FINAL

REMEDIAL INVESTIGATION REPORT FOR SITE FTMM-12

FORT MONMOUTH, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY

BRAC 05 Facility
Contract W912DY-09-D-0062
Task Order: 0012, Project No. 369857

Submitted To:

U.S. Army Engineering and Support Center
Huntsville, Alabama



Prepared By:

PARSONS
401 Diamond Dr. NW, Huntsville, AL 35806

Revision No.0
August 2015

FINAL
REMEDIAL INVESTIGATION REPORT
SITE FTMM-12

Client Name:	**U.S. Army Engineering & Support Center (USAESCH)**
Contract Name:	**Remedial Investigation/Feasibility Study/Decision Documents, Fort Monmouth, Oceanport, Monmouth County, New Jersey**
Contract Number:	**W912DY-09-D-0062, Task Order 0012, Project No. 369857**
Contractor:	**Parsons Government Services, Inc.**
Period of Performance:	**30 September 2012 to 30 September 2017**
Date of Original:	**August 2015**
Revision:	**0**

August 2015

Reviewed and Approved by:

Project Manager: _____ 8/13/15
Christina Grill, P.G. Date

Program Manager: Don Silkebakken Digitally signed by Don Silkebakken DN: cn=Don Silkebakken, o, ou=PGS, email=don.silkebakken@parsons.com, c=US Date: 2015.08.13 09:11:11 -04'00' 8-13-2015
Don Silkebakken, V.P. Date

TABLE OF CONTENTS

List of Tables iv
List of Figures v
List of Appendices v
List of Acronyms vi
EXECUTIVE SUMMARY E-1
E.1 Site Description E-1
E.2 Geology and Hydrogeology E-1
E.3 Soil Sampling Results E-1
E.4 Groundwater Sampling Results E-2
E.5 Surface Water Sampling Results E-2
E.6 Sediment Sampling Results E-2
E.7 Contaminant Fate and Transport E-3
E.8 Risk Assessment E-3
E.9 Conclusion E-4
SECTION 1 INTRODUCTION 1-1
1.1 Project Authorization 1-1
1.2 Purpose and Scope 1-1
1.3 Site Background Information 1-1
1.3.1 Site Location and Description 1-1
1.3.2 Site History 1-2
1.4 Report Organization 1-5
SECTION 2 PREVIOUS INVESTIGATIONS 2-1
2.1 Geologic/Hydrogeologic Investigations 2-1
2.2 Soil and Vadose Zone Investigations 2-1
2.3 Groundwater Investigations 2-1
2.4 Surface Water Investigations 2-2
2.5 Sediment Investigations 2-2
2.6 Ecological Investigations 2-3
2.7 Previous Investigations of Background Soil, Groundwater, and Surface Water Quality 2-3
2.7.1 Weston (1995) Background Investigation 2-3

2.7.2 Brinkerhoff (2011a) Background Evaluation 2-4
2.7.3 Base-Wide Glauconitic Soil Sampling Report 2-4
SECTION 3 PHYSICAL CHARACTERISTICS OF THE SITE 3-1
3.1 Surface Features 3-1
3.2 Surface-Water Hydrology 3-1
3.3 Geology and Hydrogeology 3-1
3.3.1 Regional Geology and Hydrogeology 3-1
3.3.2 Site-Specific Geology and Hydrogeology 3-2
3.4 Land Use 3-3
3.5 Ecology 3-4
SECTION 4 NATURE AND EXTENT OF CONTAMINATION 4-1
4.1 Soil Quality 4-1
4.1.1 Summary of Comparison Criteria Exceedances in Soil 4-2
4.1.2 COPCs in Soil 4-3
4.2 Groundwater Quality 4-4
4.2.1 Summary of Groundwater Sampling Results From 1997 to 2010 4-4
4.2.2 Summary of Results From Eight Most Recent Quarterly Sampling Events and 2013 Baseline Sampling 4-5
4.3 Surface Water 4-8
4.3.1 Summary of Surface Water Sampling Results From Most Recent Eight Quarterly Sampling Events 4-9
4.4 Sediment 4-10
SECTION 5 CONTAMINANT FATE AND TRANSPORT 5-1
5.1 Potential Routes of Migration 5-1
5.2 Contaminant Persistence 5-1
5.2.1 VOCs 5-1
5.2.2 SVOCs 5-2
5.2.3 Pesticides 5-2
5.2.4 Metals 5-2
5.3 Contaminant Migration 5-2
5.3.1 VOCs 5-2
5.3.2 SVOCs 5-2
5.3.3 Pesticides 5-2

5.3.4 Metals 5-3
5.4 Summary 5-3
SECTION 6 BASELINE RISK ASSESSMENT 6-1
6.1 Risk Assessment Process 6-1
6.1.1 Summary of Available Data for FTMM-12 6-1
6.1.2 General HHRA Approach and Guidance Documents 6-1
6.1.3 Organization of HHRA Report 6-4
6.2 Data Evaluation and Identification of Constituents of Potential Concern 6-4
6.2.1 Risk Ratio Approach 6-4
6.2.2 Soil Samples 6-7
6.2.3 Groundwater Samples 6-7
6.2.4 Sediment Samples 6-7
6.2.5 Surface Water Samples 6-7
6.3 Exposure Assessment 6-8
6.3.1 Conceptual Site Model 6-8
6.3.2 Potential Receptors and Exposure Pathways 6-8
6.3.3 Exposure Pathways 6-10
6.4 Risk Ratio and Screening Criteria Assessment 6-11
6.4.1 Risk Ratio Assessment 6-11
6.4.2 Risk Ratio Equations 6-12
6.4.3 Screening Criteria 6-13
6.5 Risk Assessment Results and Uncertainties 6-13
6.5.1 Estimated Risks for Soil 6-13
6.5.2 Risk Assessment Uncertainties 6-14
6.5.3 Conclusions 6-17
SECTION 7 REMEDIAL INVESTIGATION SUMMARY 7-1
7.1 Nature and Extent of Contamination 7-1
7.1.1 Soil 7-1
7.1.2 Groundwater 7-2
7.1.3 Surface Water 7-2
7.1.4 Sediment 7-2
7.2 Contaminant Fate and Transport 7-3
7.3 Baseline Risk Assessment 7-3

SECTION 8 CONCLUSION 8-1
SECTION 9 REFERENCES..... 9-1

LIST OF TABLES

Table 1.1 Chronology of Events
Table 2.1 Well Construction Details
Table 2.2 Groundwater Sampling Events
Table 2.3 Surface Water Sampling Events
Table 4.1 Soil Sampling Summary Results – Comparison to NJDEP Standards
Table 4.2 Soil Sampling Summary Results – Comparison to USEPA Criteria
Table 4.3 Soil Sampling Summary Results – Supplemental Soil Samples
Table 4.4 Soil Sampling Summary of Exceedances
Table 4.5 Groundwater Sampling Summary Results – March 2008 to May 2011
Table 4.6 Groundwater Sampling Summary Results – August 2013
Table 4.7 Groundwater Sampling Summary of Exceedances
Table 4.8 Surface Water Sampling Summary Results
Table 4.9 Surface Water Sampling Summary of Exceedances
Table 4.10 Sediment PCB Results
Table 6.1 Risk Ratio Calculations for Potential Exposure to Soil by a Current/Future Outdoor Worker
Table 6.2 Risk Ratio Calculations for Potential Exposure to Soil by a Future Utility Worker
Table 6.3 Risk Ratio Calculations for Potential Exposure to Soil by a Future Recreational User

LIST OF FIGURES

Figure 1.1 Fort Monmouth Location
Figure 1.2 FTMM-12 Location
Figure 1.3 Layout of FTMM-12
Figure 2.1 FTMM-12 Soil Sample Locations
Figure 2.2 FTMM-12 Surface Water and Sediment Sample Locations
Figure 4.1 Summary of Method to Determine COPCs
Figure 6.1 Evaluation of Risk to Human Receptors
Figure 6.2 Human Health Conceptual Site Model

LIST OF APPENDICES

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

LIST OF ACRONYMS

ACRONYM	DEFINITION
95% UCL	95 percent upper confidence limit
µg/dL	micrograms per deciliter
µg/L	micrograms per liter
amsl	above mean sea level
ALM	Adult Lead Model
API	American Petroleum Institute
ARARs	applicable or relevant and appropriate requirements
BEE	baseline ecological evaluation
bgs	below ground surface
BRAC	Base Realignment and Closure
Brinkerhoff	Brinkerhoff Environmental Services, Inc.
CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	constituent of concern
COPC	constituent of potential concern
COPEC	contaminants of potential ecological concern
Cosulich	William F. Cosulich Associates, P.C
CSM	conceptual site model
CWA	Charles Wood Area
DCE	Dichloroethene
DD	Decision Document
DPW	Directorate of Public Works
EA	Evans Area
EC	Engineering Control
ECP	Environmental Condition of Property
EPC	exposure point concentration
ESC	ecological screening concentrations
FMERPA	Fort Monmouth Economic Redevelopment Planning Authority
FMETL	Fort Monmouth Environmental Testing Laboratory
FS	feasibility study
ft/day	feet per day
ft/ft	foot per foot
FTMM	Fort Monmouth
FTMM-12	Fort Monmouth Landfill 12
GES	Groundwater & Environmental Services, Inc.
GIS	geographic information system
gpd/ft^2	gallons per day per square foot
gpm	gallons per minute
GWQS	Ground Water Quality Standard
HHRA	human health risk assessment
HSDB	Hazardous Substances Data Bank

ACRONYM	DEFINITION
HTRW	hazardous, toxic, and radiological waste
IC	institutional control
IGW	impact to ground water
IRP	Installation Restoration Program
K_d	soil/water distribution coefficient
K_{oc}	organic carbon/water partition coefficient
LTMP	long-term monitoring plan
LUC	land use control
MCL	Maximum Contaminant Level
mg/day	milligrams per day
mg/kg	milligrams per kilogram
MP	Main Post
NCP	National Contingency Plan
NFA	No Further Action
NHANES	National Health and Nutrition Examination Survey
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NRDCSRS	Non-Residential Direct Contact Soil Remediation Standard
NRWQC	National Recommended Water Quality Criteria
PAHs	polynuclear aromatic hydrocarbons
Parsons	Parsons Government Services Inc.
PCBs	polychlorinated biphenyls
ppt	parts per thousand
PRG	preliminary remediation goal
QA/QC	quality assurance/quality control
R&D	research and development
RAGS	Risk Assessment Guidance for Superfund
RDCSRS	Residential Direct Contact Soil Remediation Standard
RDCSCC	Residential Direct Contact Soil Cleanup Criteria
RfD	reference dose
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RIRA	RI Report Addendum
RSL	Regional Screening Level
SE	Saline
SI	site investigation
SVOC	semi-volatile organic compound
SWQS	surface water quality standard
TAL	target analyte list
THQ	target hazard quotient
TO	task order
TPV	total present value

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

EXECUTIVE SUMMARY

E.1 SITE DESCRIPTION

Fort Monmouth Landfill 12 (FTMM-12) is in the central portion of the Main Post (MP) (**Figure 1.1**) in an area west of Murphy Drive. The approximately 7.1 acre landfill site is bordered by Husky Brook to the north, Murphy Drive to the east, multiple buildings to the south including Warehouses 975 and 976, and Building 978 and Todd Avenue to the west. FTMM-12 contains domestic and industrial wastes similar to other MP landfills, and may also have been used for automobile, oil, and building rubble disposal. FTMM-12 was in operation from approximately 1950 to 1966. Since that time a stable vegetative cover has developed on the surface of the landfill. The FTMM Reuse and Redevelopment Plan indicates that the anticipated future land use at FTMM-12 is passive open space (EDAW, Inc., 2008). FTMM (MP and Charles Wood Area [CWA]) was selected for closure by the Base Realignment Commission in 2005, and officially closed on September 15, 2011.

E.2 GEOLOGY AND HYDROGEOLOGY

Landfill cover material thicknesses range from 0 to 48 inches and average 24 inches. The fill material underlying the soil cover is composed of green to brown sand with little silt and clay to a depth of 4 to 10 feet below ground surface (bgs). Small zones of cinders, ash slag, and coal were encountered at some locations. Native soil encountered below the fill consisted of brown to black fine sand, silt, and clay with organic material. The fill material encountered during intrusive investigation activities has consisted of ash, coal, slag, brick, concrete, asphalt, stone, rusting metal, bottles, wood pieces, wire, and telephone poles, sometimes intermixed with silty, coarse to fine sand.. The depth to groundwater at FTMM-12 ranges from 2 to 10 feet bgs. Groundwater at FTMM-12 migrates in a northern/northwestern direction toward Husky Brook; the calculated average advective groundwater seepage velocity is 0.51 to 0.62 foot per day (ft/day) (186 to 226 feet per year).

E.3 SOIL SAMPLING RESULTS

Near-surface soil samples were collected at FTMM-12 in 1998 and 1999. Samples collected at approximately 24 inches bgs were analyzed for volatile organic compounds (VOCs), and soil samples collected between 6 and 12 inches bgs were analyzed for metals, semi-volatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs). Detected analyte concentrations were compared to Federal and State residential, nonresidential, and impact to groundwater screening criteria as well as FTMM-specific background concentrations for metals. Residential criteria were used to support identification of constituents of potential concern (COPCs), but were not used to evaluate risk (Section E.8)

Concentrations of two VOCs, six SVOCs (all of which are polynuclear aromatic hydrocarbons [PAHs]), two pesticides, and 13 metals exceeded their current New Jersey Department of Environmental Protection (NJDEP) residential direct contact soil remediation standard (RDCSRS) and/or U.S. Environmental Protection Agency (USEPA) residential regional screening level (RSL) in at least one soil sample. Concentrations of five PAHs and four metals exceeded their NJDEP non-residential direct contact soil remediation standard (NRDCSRS) and/or USEPA industrial soil RSL in at least one soil sample. Concentrations of eight VOCs, 16

SVOCs, six pesticides/PCBs, and 18 metals exceeded their NJDEP impact to groundwater standard and/or USEPA protection of groundwater RSL in at least one soil sample.

The maximum-detected concentrations of the metals targeted for analysis in the 153 near-surface soil samples exceed their maximum background concentration for the MP presented in Weston (1995) except for thallium, which was not detected in any sample.

E.4 GROUNDWATER SAMPLING RESULTS

Quarterly groundwater monitoring occurred at FTMM-12 from June 1997 to May 2011 and in 2013 for a baseline sampling event using a network of up to 16 monitoring wells. The most recent eight quarters of groundwater monitoring data and the 2013 baseline sampling event were evaluated as being representative of recent conditions. Sampling was discontinued in 2014 following the 2013 baseline sampling event, with the concurrence of the NJDEP as stated in an approval letter "Re: November 26, 2014 Response to Comments – on the Final Baseline Ground Water Sampling Report (August 2013)" dated February 5, 2015. Detected analyte concentrations were compared to Federal and State screening criteria for potable water, as well as FTMM-specific background concentrations for metals to identify COPCs. During this period, concentrations of 17 metals exceeded the NJDEP Ground Water Quality Standard (GWQS) and/or the USEPA Tapwater RSL in at least one sample.

The metals detected at concentrations exceeding their NJDEP GWQS and/or USEPA Tapwater RSL and also the maximum background concentration for the MP established by Weston (1995) include arsenic, barium, cobalt, manganese, selenium, and silver. The highest concentrations of most metals in groundwater during the most recent eight quarters of sampling were at wells M12MW14, M12MW22, and M12MW24 located upgradient or cross-gradient from FTMM-12. Based on comparison to maximum background concentrations (Weston, 1995), the detected metals are representative of natural background conditions and are not considered to be site-related constituents of concern in groundwater. Therefore there were no metals identified as COPCs in groundwater.

E.5 SURFACE WATER SAMPLING RESULTS

Surface water samples were collected at two to four locations in Husky Brook and Husky Brook Pond from October 1996 to September 2011. These sampling locations have historically been associated with FTMM-12 (and FTMM-14) and are located upstream, adjacent to, and downstream of FTMM-12.

The most recent eight quarters of surface water monitoring data were evaluated as being representative of recent conditions. Concentrations of VOCs and metals detected upstream of FTMM-12 and FTMM-14 are similar to concentrations detected at the downstream edge of the site. This comparison indicates that FTMM-12 (as well as adjacent site FTMM-14) is not significantly impacting VOC or metal concentrations in the reach of Husky Brook that borders the site.

E.6 SEDIMENT SAMPLING RESULTS

Sediment sampling was conducted in April 2000 in Husky Brook to evaluate PCB-related impacts to stream sediments associated with FTMM-12. In the absence of sediment-specific screening criteria, soil criteria were used. One PCB (Aroclor 1254) was detected in 1 of 25 sediment samples collected at a concentration slightly greater than the NJDEP RDCSRS and the

USEPA Residential Soil RSL. The detected PCB concentration does not exceed the NJDEP or USEPA Industrial Soil RSL. The PCB detection occurred at the upstream edge of FTMM-12, and is therefore not associated with this site.

E.7 CONTAMINANT FATE AND TRANSPORT

Primary constituents of interest in terms of contaminant fate and transport at FTMM-12 include SVOCs, pesticides, and metals in soil. SVOCs, pesticides, and metals in near-surface soil at FTMM-12 are expected to be relatively persistent and immobile, limiting their impact on groundwater quality.

E.8 RISK ASSESSMENT

According to the Baseline Ecological Evaluation (BEE), exceedances of ecological screening criteria have been sufficiently evaluated and addressed for ecological consideration, and no additional ecological evaluation is necessary. Therefore, further ecological risk evaluation was not conducted at FTMM-12.

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

For outdoor workers exposed to soil at FTMM-12, the cumulative carcinogenic risk of 3×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.4, less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to outdoor workers are expected from exposure to soil at FTMM-12.

For utility workers exposed to soil at FTMM-12, the cumulative carcinogenic risk of 3×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.1, less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to utility workers are expected from exposure to soil at FTMM-12.

For recreational users exposed to soil at FTMM-12, the cumulative carcinogenic risk of 8×10^{-6} is within the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.06, which is less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to recreational users are expected from exposure to soil at FTMM-12.

Lead was evaluated separately from the other constituents. The calculated non-carcinogenic hazards are 0.09, 0.05, and 0.03 for outdoor workers, utility workers, and recreational users, respectively. Lead hazards at FTMM-12 are less than the hazard goal of 1, indicating that an unacceptable risk to outdoor workers, utility workers, or recreational users exposed to lead in soil is unlikely.

E.9 CONCLUSION

The RI concluded that risks to human health and the environment from soil are within acceptable ranges. A feasibility study (FS) will not be performed for FTMM-12. No further action is required at FTMM-12 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

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

Prior to designing and placing the cap, refinement of the landfill boundary will be performed with a pre-design investigation based on the data gaps identified in this RI. The existing landfill surface will be clear cut and regraded prior to the installation of a vegetated native soil cover. The vegetated cover will offer safety protection to non-residents from future exposure to solid waste at the landfill and control surface water runoff and erosion.

Institutional Controls (ICs) to maintain the soil cover and prevent residential land use will also be implemented at FTMM-12. The Army will prepare a Land Use Control (LUC) Implementation Plan during the remedial design phase to document the location of the engineering control (EC) and detail the landfill cover inspection, reporting and long-term management requirements. The Army will be responsible for documenting and implementing the ICs through the filing of a deed notice, and will also be responsible to conduct biennial reviews to ensure that the ICs remain protective of human health and the environment. However, the Army will not be responsible for obtaining a remedial action permit under New Jersey Technical Requirements for Site Remediation (TRSR). When the property is transferred to private ownership, the ICs will be incorporated into the title and the new owner will be responsible for complying with the ICs. Although the Army may later transfer its procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedial integrity.

SECTION 1
INTRODUCTION

1.1 PROJECT AUTHORIZATION

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

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

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

1.2 PURPOSE AND SCOPE

Parsons has prepared this RI report for landfill site FTMM-12 based on historical site characterization activities performed by others from 1995 to 2011. The report provides relevant site background information, characterizes the nature and extent of site-related contamination, evaluates the potential risk to human health and the environment, and (if needed) evaluates remedial alternatives, and provides a comparative analysis of remedial alternatives. The overall goal of this process is to obtain stakeholder concurrence on a final report for each site, and if appropriate, provide sufficient data to facilitate future remedial action or administrative closure. The New Jersey Department of Environmental Protection (NJDEP) is the lead regulatory agency for FTMM and will provide regulatory review of this document.

1.3 SITE BACKGROUND INFORMATION

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

1.3.1 Site Location and Description

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

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

Figure 1.2 shows the location of FTMM-12, which is in the central portion of the MP and has an area of 7.1 acres. The site is bordered by Husky Brook to the north, Murphy Drive to the east, multiple buildings to the south and Todd Avenue to the west. The site layout is depicted on **Figure 1.3**. FTMM-12 has also been referred to as Landfill 12 and the M-12 Landfill in historical documents.

1.3.2 Site History

FTMM-12 contains domestic and industrial wastes similar to other MP landfills, and may also have been used for automobile, oil, and building rubble disposal (Weston, 1995). FTMM-12 was in operation from approximately 1950 to 1966 (Versar, 2003b). A chronological summary of events related to the environmental characterization and remediation of FTMM-12 is provided in **Table 1.1** and detailed in this subsection.

Suspected hazardous waste sites were initially identified at FTMM in a report prepared by U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The purpose of the report was to assess the environmental quality of FTMM with regard to the use, storage, treatment, and disposal of toxic and hazardous materials. Thirty-seven sites at the MP, CWA, and EA were identified as having known or suspected waste material, including FTMM-12. The report recommended that FTMM perform surface water and groundwater sampling at the installation's landfills and report the results to USATHAMA.

A follow-up evaluation was completed by USATHAMA (1988) to determine if environmental/hazardous waste disposal conditions at FTMM (including the landfills) had changed since the assessment in the USATHAMA (1980) report. Based on an assessment of available data, it was recommended that USATHAMA not conduct a SI, but surface water and groundwater sampling at the MP landfill areas (including FTMM-12) should be continued (USATHAMA, 1988). Several studies were summarized or mentioned in this report including a landfill study performed by William F. Cosulich Associates, P.C. (Cosulich), a water quality engineering study by the U.S. Army Environmental Hygiene Agency (USAEHA), and several monitoring studies (USAEHA, 1985; NJDEP, 1985; USAEHA, 1986; and RCA Services Company, 1986).

Cosulich conducted a landfill study in 1980 identifying five locations that were considered to be major landfill areas. One of the five locations, Area B, includes FTMM-12 and FTMM-14. Groundwater and surface water samples were collected and analyzed for compliance with National Interim Primary Drinking Water Standards and National Secondary Drinking Water Regulations. The study concluded that the targeted parameters were not found at sufficiently elevated concentrations to cause degradation to groundwater or surface water, but it was

recommended that FTMM submit a landfill registration statement to the NJDEP (Cosulich, 1980).

A USAEHA water quality engineering study was conducted in 1984 to determine if landfill leachate was forming and entering streams. Surface water samples were collected in Husky Brook adjacent to FTMM-12 to the north of the site. The sampling results indicated that the landfill's impacts to the stream were minimal (USATHAMA, 1988). It was recommended that the results be presented to the NJDEP in compliance with the New Jersey Pollutant Discharge Elimination System (NJPDES). In 1985, an NJPDES permit was issued to FTMM for the landfill which required groundwater monitoring. Based on several groundwater monitoring studies conducted in 1985 and 1986, the results indicated elevated levels of some parameters, but none which significantly impacted the groundwater quality.

A Site Investigation (SI) (Weston 1995; provided in **Appendix A**) was performed at FTMM-12 that included the installation of three shallow groundwater monitoring wells in 1995 (M12MW16, M12MW17, and M12MW18), and performance of two rounds of groundwater sampling in February and March 1995. The results of the groundwater sampling were presented in the SI report (Weston, 1995). The SI report presented a recommended long-term monitoring plan (LTMP) for groundwater and surface water that utilized the existing groundwater monitoring wells and surface water sampling locations to monitor and document downgradient surface water and groundwater quality conditions over time.

Groundwater sampling was performed from 1997 to 1999 in the three monitoring wells installed at FTMM-12 in 1995. Eight additional wells were installed in 1999 as part of the quarterly groundwater monitoring program at FTMM-12, but not sampled until 2000 (Versar, 2003a; provided in **Appendix A**). In 2010, an additional five wells were installed, adding to the monitoring system at FTMM-12 (U.S. Army, 2012; provided in **Appendix A**). **Figure 1.3** shows the locations of groundwater monitoring wells associated with FTMM-12. (Wells associated with FTMM-14 are also shown on this figure.) Quarterly groundwater monitoring at FTMM-12 was performed from June 1997 to May 2011. Additional soil sampling was performed in 2001 based on the groundwater quality results from two monitoring wells which had elevated concentrations of lead and arsenic (Versar, 2003a). A baseline groundwater sampling event was conducted in 2013 to reestablish baseline site conditions following the temporary suspension of the groundwater sampling program in 2011.

Surface water samples were collected from two sampling locations, SS-8 (upstream) and SS-9 (downstream), in Husky Brook in February 1986 (USATHAMA, 1988). Quarterly surface water sampling was recommended (Weston, 1995) and conducted at four locations in Husky Brook associated with FTMM-12 from October 1996 through September 2010.

Near-surface soils were characterized by analyzing soil samples collected between March 1998 and September 1999 on a grid pattern for FTMM-12. The results of soil sampling were documented in an RI Report (Versar, 2003b; provided in **Appendix A**).

A Classification Exception Area (CEA) report for FTMM-12 was prepared by Versar (2004b) due to detections of arsenic and lead concentrations in groundwater that exceeded the NJDEP GWQS. The horizontal extent of the CEA for arsenic and lead was defined by the site monitoring well network, and the vertical extent included the shallow part of the aquifer beneath

the site from the water table to approximately 125 feet bgs; the CEA was anticipated to be in place for 4,500 years. However, this CEA was never approved by NJDEP.

Other studies conducted at nearby MP landfill sites FTMM-02 and FTMM-08 found polychlorinated biphenyls (PCB)-containing materials disposed of in each landfill. Therefore, assuming other landfills on the MP had received similar waste materials, a sediment sampling investigation was performed in 2000 to evaluate potential impacts to stream sediments in creeks and brooks adjacent to FTMM, including Husky Brook in the area of FTMM-12 (Versar, 2004a; provided in **Appendix A**). Because Husky Brook runs between FTMM-12 and FTMM-14, the sediment sampling conducted by Versar (2004a) represented both landfills.

The FTMM-12 landfill boundaries were initially determined through the 1998 soil RI and a prior review of aerial photographs of the MP from 1940 to 1974. On July 25, 2007, NJDEP commented that potential disposal areas may exist outside of the then-current landfill boundaries at FTMM-12. A 2009 investigation was undertaken in order to more precisely delineate the perimeter of the landfill, and involved advancing soil borings or excavating test pits at 33 locations near the eastern, southern, and western boundaries of the known landfill. Husky Brook is the northern boundary of FTMM-12, and pits were not excavated along this boundary (U.S. Army, 2012). Test pits depths ranged from 2 to 8 feet below ground surface (bgs). The thickness of the cover material at 163 locations ranged from 0 to 48 inches and averaged 24.3 inches (see Table 2/Cover Material Summary for the Landfill Delineation Project in **Appendix A**). Waste material observed in the test pits included ash, coal, slag, brick, concrete, asphalt, stone, rusting metal, bottles, wood pieces, wire, and telephone poles, sometimes intermixed with silty, coarse to fine sand. The delineation activities resulted in expansion of the southern boundary of FTMM-12 (U.S. Army, 2012).

The landfill boundaries were reexamined by Parsons in 2015 using the available test pit and soil boring data, as well as historical aerial photographs by NJDEP (**Appendix A**). Following the reexamination in 2015, the boundaries of Landfill FTMM-12 were refined in a few areas but remained generally similar to how they were defined in 2010. The most significant refinement was made to the southern boundary of the landfill, north of the parking lot off Murphy Drive and monitoring well M12MW13. Aerial photos indicate that this area was historically used for parking during landfill operations at FTMM-12, however, there is no evidence of material being placed in this triangular parking area. There is no debris in the test pits around this triangular area (Test Pits 2, 3, 4, 5, 6, and 7). The borings closest to the new boundary (B-23 though B-26), contain no debris, however cinders and landfill debris are noted in borings B-16 through B-22, and the boundary in this area is largely based on the aerial photographs. Therefore, the 2010 revised boundary of the landfill was moved to the north in this area, which is consistent with observations of the landfill boundary made during the 2015 review of a series of aerial photographs dated 1947, 1957, 1963, 1969, and 1970. These photographs depict the progression of suspected filling activities that occurred to produce the FTMM-12 landfill (**Appendix A**). Also, the southern side of the landfill boundary along test pits 11, 11A, 11B, 11C, and 11D was modified slightly based on the small amount of debris in the test pit logs. A review of the aerial photographs indicates the buildings were present at the time of landfilling and, therefore, the landfill does not extend any farther east or south than the edge of the building and associated parking lots. The 2015 revised boundary is shown on **Figure 1.3**. Data gaps in the landfill boundary remain near borings B-15 through B-22 in the northeast portion of FTMM-12 and these data gaps are proposed to be addressed during a pre-design investigation.

A CEA report for FTMM-12 was prepared and submitted to the NJDEP in June 2011 by Brinkerhoff Environmental Services, Inc. (Brinkerhoff, 2011c) due to detections of lead concentrations in groundwater that exceeded the NJDEP Ground Water Quality Standard (GWQS). The horizontal extent of the CEA for lead was defined by the site monitoring well network, and the vertical extent included the shallow part of the aquifer beneath the site from the water table to approximately 18 feet bgs, which represented the total depth of contamination at that time at the site. The CEA report/application for FTMM-12 was subsequently withdrawn by FTMM and was never reviewed or approved by NJDEP.

Environmental investigations performed at FTMM-12 are summarized in greater detail in Section 2, and the nature and extent of contamination detected during the environmental investigations are summarized in Section 4.

1.4 REPORT ORGANIZATION

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

- Introduction: Section 1 details the overall scope and objective of the project, presents the organization of the report, and presents an overview of the site and its history, including previous investigations;
- Previous Investigations and Interim Remedial Actions: Section 2 details the site characterization field activities and interim remedial actions that have been performed;
- Physical Characteristics of the Site: Section 3 describes the physical setting of the site, including surface features, surface water hydrology, geology and hydrogeology, land use, and ecological setting;
- Nature and Extent of Contamination: Section 4 summarizes the degree to which sampled media have been impacted by site-related contamination, and identifies those constituents that were detected above applicable cleanup criteria but are believed to be representative of natural background concentrations;
- Contaminant Fate and Transport: Section 5 describes the migration and fate of selected constituents present in the subsurface based upon site-specific data, the geologic and hydrogeologic characteristics of the site, and the physicochemical properties of the constituents;
- Baseline Risk Assessment: Section 6 provides a quantitative assessment of the risk posed by site-related COPCs to potential human receptors;
- Remedial Investigation Summary: Section 7 summarizes the main findings of the RI;
- Conclusion: Section 8 presents the conclusion and details reasons why a FS was not necessary for FTMM-12.
- References: Section 9 includes a list of references used in the preparation of this report.

Additional information is attached to this report as appendices:

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

SECTION 2
PREVIOUS INVESTIGATIONS

2.1 GEOLOGIC/HYDROGEOLOGIC INVESTIGATIONS

The geologic and hydrogeologic characteristics of FTMM have been investigated during numerous historical installation-wide and site-specific environmental studies. The primary methods of geologic/hydrogeologic investigation at FTMM-12 have consisted of describing soils encountered during monitoring well drilling, measuring water levels in site monitoring wells, and constructing potentiometric surface (i.e., groundwater surface elevation contour) maps indicating the direction and magnitude of the horizontal hydraulic gradient.

2.2 SOIL AND VADOSE ZONE INVESTIGATIONS

The Army characterized near-surface soils using borings installed throughout the site. The *Remedial Investigation Report for Near-Surface Soils, M-12 Landfill Site* (Versar, 2003b) presents the results of the soil investigation. The Army advanced 147 soil borings and collected soil samples from each boring between March 1998 and September 1999. Each of the soil samples, except those collected for VOC analysis, were collected between approximately 6 and 12 inches bgs. VOC samples were collected at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time. A total of 153 soil samples (147 primary samples plus 6 field duplicate samples) were analyzed for VOCs, SVOCs, pesticides, PCBs, and Target Analyte List (TAL) metals. Laboratory analyses were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey-certified laboratory (Certification No. 13461). The landfill site boundary (**Figure 1.3**) is based on the RI Report for Near Surface Soils (Versar, 2003), landfill boundary delineation project conducted from 2008 to 2010, and review of historical data and aerial photographs by Parsons in 2015. **Figure 2.1** depicts the current understanding of the FTMM-12 landfill boundary, the soil boring locations, and the test pit locations used for the delineation of the landfill.

Supplemental soil samples were collected from 15 borings around M12MW16 and M12MW22 on March 3, 2001 (see **Figure 2.1** of this report; and Figures 3-3A and 3-3B in Versar, 2003a, included in **Appendix A)**. The locations were based on groundwater quality results from these monitoring wells. The soil samples were collected from each boring at depths ranging from 0 to 66 inches bgs. A total of 65 samples were analyzed by FMETL for arsenic and lead (Versar, 2003a).

2.3 GROUNDWATER INVESTIGATIONS

Groundwater monitoring wells were installed at and near FTMM-12 to determine if leachate from the landfill was impacting groundwater quality. Well construction details are provided in **Table 2.1**, and the scope of the quarterly groundwater monitoring program from 1997 to 2011 is summarized in **Table 2.2**. Well locations are shown on **Figure 1.3**.

In 1995, as part of a SI, three shallow groundwater wells (M12MW16, M12MW17, and M12MW18) were installed and two groundwater sampling events were conducted in February and March 1995 (Weston, 1995). Groundwater samples were analyzed for TAL metals, VOCs, SVOCs, pesticides, PCBs, and cyanide. The results of the groundwater sampling were presented in the SI report (Weston, 1995). Based on the findings of the SI, the Army implemented a long-term groundwater monitoring program in June 1997.

Eight additional monitoring wells (M12MW19 to M12MW26) were installed in 1999, and initially sampled in 2000. Groundwater samples collected from the 11 monitoring wells installed from 1995 to 1999 were analyzed for VOCs, SVOCs, pesticides/PCBs, and TAL metals through August 2004 (**Table 2.2**) (U.S. Army, 2012). Starting in February 2005, the target analytes included only TAL metals for M12MW17 to M12MW22, and pesticides/PCBs and TAL metals for M12MW16 and M12MW23 to M12MW26. VOCs and SVOCs were removed from the target analyte list. Removal of VOC and SVOC analyses from the FTMM-12 groundwater sampling program was approved by the NJDEP in a November 16, 2004 email (**Appendix A**). Starting in March 2009 the groundwater monitoring wells were only sampled for metals. In July and September 2010, five additional monitoring wells (M12MW11 through M12MW15) were installed; they were initially sampled for VOCs and metals, but only for metals starting in November 2010 (U.S. Army, 2012).

A CEA was proposed for lead and arsenic in 2004 (Versar, 2004b). The CEA was centered on wells M12MW16 and M12MW22 for arsenic and M12MW21 for lead, extended vertically to a depth of 125 feet bgs, and the duration was set at 4,500 years. The 2004 CEA report is provided in **Appendix A**, including maps showing the locations of the CEA (Figures 3-2 to 3-4b). However, this CEA was never approved by NJDEP. A CEA was proposed for lead in 2011 by Brinkerhoff (2011c) due to detections of lead concentrations in groundwater that exceeded the NJDEP GWQS. The horizontal extent of the 2011 CEA for lead was defined by the site monitoring well network, and the vertical extent included the shallow part of the aquifer beneath the site from the water table to approximately 18 feet bgs. The duration was proposed as indeterminate based on the nature of the contaminant. The CEA report/application for FTMM-12 was subsequently withdrawn by FTMM and was never reviewed or approved by NJDEP.

2.4 SURFACE WATER INVESTIGATIONS

Surface water samples were collected from an upstream location (SS-8) and downstream location (SS-9) at FTMM-12 during the SI as shown on **Figure 2.2** (Weston, 1995). The sampling locations were considered saline, and the analytical results for VOCS, SVOCs, pesticides/PCBs, and TAL metals were compared to NJDEP saline surface water criteria. The surface water in Husky Brook at FTMM-12 is tidally-influenced (see Section 3.2), and high tide salinity measurements in the Baseline Ecological Evaluation (BEE) Report (Shaw, 2012) indicated that the reach of Husky Brook adjacent to FTMM-12 has an overall site average high tide salinity of 11.2 parts per thousand (ppt), which classifies it as saline. Upstream location SS-8 (now discontinued) was not sampled during subsequent years, and in addition to SS-9, three other locations (SS-11, SS-12, and SS-19) were sampled quarterly for VOCs from October 1996 to March 2000. SS-11 is far upstream of FTMM-12 where Husky Brook first enters the MP. SS-12 and SS-19 are also located upstream of FTMM-12 (but in closer proximity) in Husky Brook Pond and where Husky Brook crosses beneath Todd Avenue, respectively (**Figure 2.2**). Starting in June 2000, quarterly surface water samples from SS-9, SS-11, SS-12, and SS-19 were analyzed for VOCs, and some samples were also analyzed for pesticides/PCBs or metals as summarized in **Table 2.2**. Sampling results have been summarized by the U.S. Army (2012).

2.5 SEDIMENT INVESTIGATIONS

Other studies conducted at similar MP landfill sites (FTMM-02 and FTMM-08) found PCB-containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both FTMM-02 and FTMM-08. Therefore, assuming that

other landfills on the MP had received similar waste materials, the FTMM Directorate of Public Works (DPW) initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments adjacent to the MP landfill sites. FTMM-12 was included in the sediment sampling program to supplement previous characterization results for soil, surface water, and groundwater (Versar, 2004a).

To determine PCB-related impacts to sediments in Husky Brook from FTMM-12, the Army collected 11 surface (0-6 inches bgs) and 11 near-surface (6-12 inches bgs) sediment samples in Husky Brook in April 2000, as well as two duplicate samples (collected from the same two depth intervals) for quality assurance/quality control (QA/QC) purposes. At locations B-1, B-4, and B-6, sediment samples were also collected from a deeper interval (18-24 inches bgs). The 27 sediment samples (two to three depth intervals sampled per location) were collected along the 1,700-foot section of Husky Brook that forms the northern border of FTMM-12 and separates FTMM-12 and FTMM-14. Sediment sample locations are shown on **Figure 2.2**. The 27 sediment samples were analyzed for PCBs and compared by Versar (2004a) to sediment sampling guidance concentrations defined in the NJDEP's (1998) *Guidance for Sediment Quality Evaluations*.

2.6 ECOLOGICAL INVESTIGATIONS

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

The NJDEP has accepted the recommendations and conclusions of the BEE (Shaw, 2012) and concurs that no further evaluation of ecological risk is required. Therefore, based on the recommendation of the BEE, no further ecological risk assessment was conducted for FTMM-12. Additional ecological information pertinent to this site was obtained from the BEE report and is summarized in Section 3.5.

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

2.7.1 Weston (1995) Background Investigation

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

Groundwater Monitoring Activities at RCRA Facilities (USEPA, 2009) was not used. Weston (1995) states that nonparametric methods that are similar to the tolerance interval method involve selecting the data value that is at the 95th percentile of the data set. Because there were 10 data points, the equivalent method for the FTMM background data set was to use the maximum value. An outlier screening was conducted to identify background concentrations that were inconsistent with the rest of the data set. Based on the screening, outliers were identified for beryllium, chromium, cobalt, lead, vanadium, and zinc in the MP groundwater, and manganese in the CWA soil. These outliers were eliminated from the data set.

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

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

2.7.2 Brinkerhoff (2011a) Background Evaluation

Brinkerhoff (2011a, provided in **Appendix A**) performed an evaluation to achieve the following objectives:

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

For FTMM-12, Brinkerhoff (2011a) calculated the 90th percentile values for metals using groundwater quality data collected from March to September 2010, and determined that the 90th percentile values for barium, cadmium, chromium, copper, and nickel were less than the GWQS for these metals. Based on these calculations, Brinkerhoff (2011a) recommended no further sampling of groundwater for these metals, except for selenium and thallium to verify the report conclusions due to possible laboratory inaccuracies affecting selenium and/or thallium results. In addition, the CEA prepared by Brinkerhoff (2011b) compared site to background concentrations. The CEA concluded that arsenic, antimony, beryllium, cadmium, and thallium at FTMM-12 were representative of naturally occurring background conditions, and therefore these metals were not included in the CEA application. The CEA report and application for FTMM-12 was subsequently withdrawn by FTMM and was never reviewed or approved by NJDEP.

2.7.3 Base-Wide Glauconitic Soil Sampling Report

Previous studies have documented the presence of naturally occurring metal concentrations (e.g., arsenic, beryllium, lead) in glauconitic soils such as those present within the New Jersey Coastal Plain physiographic province (Dooley, 2001; U.S. Geological Survey [USGS], 1984). In an effort to confirm and document that select metals detected in groundwater on the MP are naturally associated with glauconitic soils, the FTMM DPW (FTMM, 2011; provided in **Appendix A**) conducted a soil and groundwater sampling investigation to determine whether naturally occurring metals in soil are causing metal concentrations in groundwater to exceed the

NJDEP GWQS. According to Jablonski (1968) the Red Bank and Tinton Sands that outcrop at the MP contain glauconite. Minard (1969) states that glauconite may comprise 60 to 80 percent of the sand fraction in the upper portion of the Tinton Sand.

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

SECTION 3
PHYSICAL CHARACTERISTICS OF THE SITE

3.1 SURFACE FEATURES

FTMM-12 is located adjacent to Husky Brook and is bisected by a storm water outfall and drainage ditch that is a tributary to Husky Brook (**Figure 1.3**). The ground surface topography is flat, with elevations of less than 20 feet above mean sea level.

3.2 SURFACE-WATER HYDROLOGY

Husky Brook originates off-post and becomes Husky Brook Lake in the southwestern corner of the MP (**Figure 2.2**). Surface-water drainage from the southern half of the MP flows into Husky Brook and Husky Brook Lake through a series of drainage ditches and outfalls. Husky Brook exits Husky Brook Lake and becomes Oceanport Creek just downstream of FTMM-12. Oceanport Creek and Husky Brook are tidally-influenced below Husky Brook Lake (Weston, 1995). Surface water that falls during precipitation events in the southwest portion of the site at FTMM-12 flows in a north or northeast direction via overland flow toward Husky Brook or the storm drain tributary to Husky Brook. Surface water that falls during precipitation events in the northeast portion of the site at FTMM-12 flows northwest via overland flow toward Husky Brook (**Figure 2.2**).

3.3 GEOLOGY AND HYDROGEOLOGY

3.3.1 Regional Geology and Hydrogeology

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

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

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

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

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

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

3.3.2 Site-Specific Geology and Hydrogeology

Landfill boundary delineation information presented in Appendix E of the RI Report Addendum (RIRA) for the 2nd Quarter 2001 to the 3rd Quarter 2010 (U.S. Army, 2012) indicates landfill cover material thicknesses ranging from 0 to 48 inches and averaging 24.3 inches (see Table 2/Cover Material Summary for the Landfill Delineation Project in **Appendix A**). Monitoring wells at FTMM-12 were installed to depths ranging from 14.5 to 20 feet bgs (**Table 2.1**). Versar (2003a) described the fill material at FTMM-12 as being composed of green to

brown sand with little silt and clay to a depth of 4 to 10 feet bgs. Small zones of cinders, ash slag, and coal were encountered at some locations. Soil types to a depth of 8 feet bgs identified on logs of test pits excavated in 2008 during a landfill delineation project (Section 1.3.2) include orange and tan sand, brown or tan silty sand, and some silty clay. A review of the test pit logs shows that debris encountered included ash, coal, slag, brick, concrete, asphalt, stone, rusting metal, bottles, wood pieces, wire, and telephone poles, sometimes intermixed with silty, coarse to fine sand. Native soil below the fill consisted of brown to black fine sand, silt, and clay with organic material. A site-specific geologic cross-section prepared by Versar (2003a) is provided in **Appendix A**.

The depth to groundwater at the MP typically ranges from approximately 2 to 9 feet bgs. At FTMM-12, the groundwater depth ranges from 2 to 10 feet bgs based on water level depth measurements collected from March 2009 to September 2010 (U.S. Army, 2012). Groundwater consistently migrates toward the north to northwest (i.e., toward Husky Brook, **Figure 1.3**) with a horizontal hydraulic gradient ranging from approximately 0.023 foot per foot (ft/ft) to 0.028 ft/ft based on potentiometric surface maps contained in Versar (2003a).

Versar (2003a) conducted slug tests in the monitoring wells located at FTMM-12 in February 2001. The calculated hydraulic conductivity values range from 0.09 ft/day at well M12MW26 to 208 ft/day at well M12MW17, with a calculated geometric mean value of 4.4 ft/day. The high degree of variability in the hydraulic conductivities was associated with the shallow depth of the monitoring wells, partial penetration into the aquifer, and the heterogeneous nature of the fill material at the site (Versar, 2003a).

An average advective groundwater seepage velocity for FTMM-12 was calculated using the following equation:

$$V = Ki/n_e$$

Where:

V = seepage velocity

K = hydraulic conductivity = 4.4 ft/day (the geometric mean value determined from slug tests at FTMM-12)

i = hydraulic gradient = 0.023 to 0.028 ft/ft (measured from the site-specific potentiometric surface maps for September 12, 2000 and February 6, 2001 prepared by Versar [2003a] [see **Appendix A** of this report])

n_e = effective porosity = 0.20 or 20% (estimated value for a fine to coarse sand with minor silt and clay)

The calculated average advective groundwater seepage velocity ranges from 0.51 ft/day to 0.62 ft/day (186 to 226 feet per year) depending on the hydraulic gradient used in the calculation.

3.4 LAND USE

The FTMM-12 has reportedly been inactive since 1966. Since then there has been steady growth and stabilization of vegetation (grass, trees, and bushes) at the site. The anticipated future land use at FTMM-12 is passive open space (Edaw, Inc., 2008) (see Land Use Plan in **Appendix A**). Land planned for use as "open space" is expected to remain undeveloped, with only occasional maintenance activities (e.g., grounds keeping), utility work associated with

underground or overhead utilities that may be present within the site boundary, and recreational activity (e.g., hiking and biking on established trails).

3.5 ECOLOGY

Major vegetation zones at FTMM consist of landscaped areas, estuarine and fresh water wetlands, riparian areas, upland forests, and old field habitats. Much of the upland areas of the MP and CWA consist of extensive areas of regularly mowed lawns and landscaped areas (Shaw, 2012). FTMM-12 consists of an open vegetated field that is not currently maintained, except for the part of the southern edge that is close to the parking area, which is maintained lawn. The stream bank of Husky Brook adjacent to FTMM-12 has been stabilized but the material used for stabilization was not documented (U.S. Army, 2012; Shaw, 2012). The BEE report (Shaw, 2012) indicates that to the east of FTMM-12, on the opposite side of Murphy Drive, the emergent wetland areas adjacent to Husky Brook are considered potential habitat for the New Jersey-listed endangered Least Tern (Shaw, 2012) according to the geographic information system (GIS) digital data provided by NJDEP. However, that species has not been observed downstream of FTMM-12.

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

SECTION 4
NATURE AND EXTENT OF CONTAMINATION

Environmental sampling results for soil, groundwater, surface water, and sediment at and adjacent to FTMM-12 are described in this section.

4.1 SOIL QUALITY

Soil quality results obtained during the near-surface soil characterization (Versar, 2003b) are summarized in the following subsections. One hundred fifty-three (153) samples were collected (i.e., 147 primary and 6 field duplicates) from 147 soil borings. Sample locations are shown on **Figure 2.1**. **Tables 4.1 and 4.2** show the sampling results for detected analytes only and also show selected NJDEP and background comparison criteria (**Table 4.1**) and USEPA comparison criteria (**Table 4.2**), including:

- NJDEP Residential Direct Contact Soil Remediation Standard (RDCSRS), Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS), and Impact to Ground Water (IGW) soil standards; and
- USEPA Regional Screening Level (RSLs) (target risk [TR] = 1 x 10^{-6} and target hazard quotient [THQ] = 0.1) for residential and industrial soil and protection of groundwater (the latter being analogous to the NJDEP IGW soil standards).

Since arsenic and lead were historically identified as constituents of potential concern (COPCs) in groundwater (Versar, 2003a), supplemental soil sampling for these two metals was conducted within an approximately 50-foot radius around two wells in March 2001. Nine borings were advanced around M12MW16 and six borings were advanced around M12MW22. A total of 65 samples (i.e., 61 primary and 4 field duplicates) were collected from depths ranging from 0 to 66 inches. The soil boring locations are shown on **Figure 2.1**, and the analytical results for the supplemental sampling are summarized in **Table 4.3**. Recent review of Versar (2003a) uncovered a transcription error in the document, where arsenic concentrations were reported as lead, and lead as arsenic. **Table 4.3** presents the corrected results that match the laboratory data reports in Appendix A of Versar, 2003a; these supplemental soil results fall within the range of other FTMM-12 soil arsenic and lead results shown on **Tables 4.1 and 4.2**. Monitoring well M12MW22 is located outside of the FTMM-12 landfill boundary (**Figure 2.1**); therefore, the arsenic and lead data from the 25 soil samples associated with this well have not been included in subsequent soil summaries in this report, and were not used for the Section 6 risk assessment.

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

Comparison of site concentrations to USEPA RSLs was used because the U.S Army is tasked with completing a CERCLA-compliant RI (including risk assessment). Therefore, RSLs are used to identify those chemicals that are present at a sufficient concentration to justify inclusion as a COPC and consideration in the quantitative baseline risk assessment. Any analyte present at a concentration greater than both the Residential Soil RSL based on a TR of 1 x 10^{-6} or a THQ of 0.1 and the range of FTMM-specific background concentrations for metals (Weston, 1995) is considered a COPC (except for metals considered essential human nutrients) and included for further evaluation in the baseline risk assessment. Any analyte that is present at concentrations less than these residential criteria are not expected to pose a risk to human

receptors under any future land use, and so are not included in the baseline risk assessment. A comparison to residential criteria is not meant to imply that residential land use is expected or planned at the site. Residential criteria are simply used as a tool to identify COPCs.

Table 4.4 summarizes the number of times detected soil analyte concentrations were greater than one or more NJDEP or USEPA comparison criteria, and the number of times that detected metals concentrations were greater than background concentrations presented by Weston (1995). These data include the 153 samples from the near-surface soil characterization (Versar, 2003b), and 40 samples associated with the 2001 supplemental soil sampling at monitor well M12MW16 for arsenic and lead.

4.1.1 Summary of Comparison Criteria Exceedances in Soil

Concentrations of VOCs, SVOCs, pesticides and PCBs, and metals were detected in soil samples that exceed NJDEP and/or USEPA comparison criteria. Versar (2003b) reported that analysis of the soil sampling results did not define a source area or level of contamination that necessitated the identification and evaluation of potential remedial actions. For many of the analytical results that exceeded the then-current Residential Direct Contact Soil Cleanup Criteria (RDCSCC), the "compliance averaging" approach was used by Versar (2003b) to determine compliance with NJDEP technical requirements. Compliance averaging uses the average contaminant concentration in an area of concern rather than the concentration in individual samples for comparison to applicable soil cleanup criteria. In most cases, either the calculated compliance average was below the respective (then current) RDCSCC or the exceedance was considered marginal (Versar, 2003b). For the analytes that were not eliminated based on compliance averaging, Versar (2003b) reported that a document equivalent to a Declaration of Environmental Restriction would be incorporated into the FTMM Master Plan for soils containing these exceedances, and recommended no further action for near-surface soil at FTMM-12. A Declaration of Environmental Restriction is similar to the current "Deed Notice" in the NJDEP regulations.

4.1.1.1 Summary of Exceedances of Residential Direct Contact Comparison Criteria

Concentrations of the following constituents exceeded the current NJDEP RDCSRS and/or USEPA Residential Soil RSL in at least 1 of the 193 soil samples analyzed for VOCs, SVOCs, pesticides/PCBs, and metals (**Tables 4.1 through 4.4**).

- The VOCs benzene and vinyl chloride;
- The SVOCs (classified as polynuclear aromatic hydrocarbons [PAHs]) benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides dieldrin and 4,4'-DDT; and
- The metals aluminum, antimony, arsenic, cadmium, cobalt, copper, iron, lead, manganese, mercury, thallium, vanadium, and zinc.

The VOC exceedances occurred at borings B-74 (benzene) and B-92 (vinyl chloride) in the western portion of FTMM-12. Maximum concentrations of the SVOCs were generally detected at boring B-127, also located in the western portion of FTMM-12 (**Figure 2.1**). Maximum detections of pesticides and metals were distributed among multiple soil borings. Exceedances of residential comparison criteria for dieldrin were clustered at borings B-147 and B-148 located

just west of the drainage ditch that bisects FTMM-12 and flows into Husky Brook (**Figure 2.1**). Exceedances for DDT occurred at boring B-81 in the western portion of FTMM-12, approximately 100 feet east of well M12MW23.

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

Concentrations of the following constituents exceeded the current NJDEP NRDCSRS and/or USEPA Industrial Soil RSL in at least 1 of the 193 soil samples analyzed for VOCs, SVOCs, pesticides and PCBs, and metals (**Tables 4.1** through **4.4**).

- The SVOCs (classified as PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene; and
- The metals arsenic, iron, lead, and mercury.

4.1.1.3 Summary of Exceedances of Impact to Groundwater Comparison Criteria

Concentrations of the following constituents exceeded the current NJDEP IGW standard and/or USEPA IGW risk based RSLs in at least one of the 193 soil samples analyzed for VOCs, SVOCs, pesticides/PCBs and metals (**Tables 4.1 through 4.4**).

- The VOCs methylene chloride, cis-1,2-dichloroethene (cis-1,2-DCE), benzene, toluene, acetone, vinyl chloride, ethylbenzene, and xylenes;
- The SVOCs naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, di-n-butylphthalate, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indo(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides/PCBs dieldrin, gamma-chlordane, alpha-chlordane, 4,4'-DDE, 4,4'-DDD, and 4,4'DDT; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

Bis(2-ethylhexl)phthalate, acetone, methylene chloride, and toluene are common laboratory contaminants and detected concentrations of these analytes may be representative of laboratory-derived contamination. Bis(2-ethylhexl)phthalate and di-n-butylphthalate were also frequently detected in laboratory blanks (**Tables 4.1 and 4.2**).

4.1.1.4 Identification of Background Constituents

Metal concentrations were compared to maximum background concentrations for the MP presented by Weston (1995) (**Tables 4.1** through **4.4**). The maximum-detected concentrations of aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, selenium, silver, thallium, vanadium, and zinc were greater than the maximum background concentration in background soil samples collected by Weston (1995).

4.1.2 COPCs in Soil

Following USEPA (1989) guidance, data with J, E or ER, and D qualifiers were treated as detects and usable for COPC identification purposes. U and UJ qualified data were considered to be nondetects but usable for COPC identification. B and BJ qualified data were treated as

nondetects because the analyte was detected in the associated blank and the estimated chemical concentration in the sample was not five or ten times greater than the concentration in the associated blank (USEPA, 1989). Detections flagged with B and BJ are not usable for COPC identification purposes as the detections may be associated with laboratory contamination.

COPCs in soil were identified by comparing the maximum detected concentration of each analyte to the USEPA Residential Soil RSL (TR = 1 x 10^{-6} and THQ = 0.1). If organic chemicals were detected at concentrations greater than USEPA Residential Soil RSLs in at least one sample, they were considered COPCs. Metals detected at concentrations exceeding the residential RSL were then compared to the maximum background concentration (Weston, 1995). If the maximum concentration of a metal was greater than both the USEPA Residential Soil RSL and the maximum background concentration in at least one sample, that metal was considered to be a COPC. If the maximum concentration was greater than the USEPA Residential Soil RSL but less than the maximum background concentration, it was not considered a COPC. However, metals that are considered to be essential human nutrients (calcium, iron, magnesium, potassium, and sodium) were not considered to be COPCs. This decision logic is presented on **Figure 4.1**.

COPCs in soil (**Table 4.4**) include benzene, vinyl chloride, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, dieldrin, 4,4'-DDT, aluminum, antimony, arsenic, cadmium, cobalt, copper, lead, manganese, mercury, thallium, vanadium, and zinc.

4.2 GROUNDWATER QUALITY

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

Quarterly groundwater sampling of site monitoring wells was conducted from 1997 into 2011. Groundwater sampling results obtained from March 2008 to May 2011 are presented in **Table 4.5**. Groundwater sampling results obtained during the baseline event in August 2013 are presented in **Table 4.6**. More comprehensive summary tables that provide groundwater quality data from May 1997 through September 2010 are provided in **Appendix A**. **Tables 4.5 and 4.6** also show the NJDEP GWQS and USEPA Tapwater RSLs to facilitate comparison of sampling results to criteria developed to be protective of use of groundwater as a potable water source. Maximum background concentrations for metals in groundwater by Weston (1995) are also provided in **Tables 4.5** and **4.6**.

4.2.1 Summary of Groundwater Sampling Results From 1997 to 2010

Nineteen rounds of groundwater samples were collected from June 1997 through January 2001; samples were analyzed for VOCs, SVOCs, pesticides/PCBs, and TAL metals. Groundwater samples collected during two additional rounds of sampling using low-flow methods were analyzed for TAL metals. As summarized by the U.S. Army (2012), groundwater concentrations of VOCs and pesticides/PCBs were determined by Versar (2003a) to be in compliance with NJDEP GWQS. During the same time period, one SVOC, bis(2-ethylhexyl)phthalate (a common laboratory contaminant), and eight metals were detected in

groundwater samples at concentrations exceeding NJDEP GWQS. Based on the results of groundwater sampling conducted from June 1997 to January 2001, Versar (2003a) concluded that no constituents of concern were present in groundwater at FTMM-12, and recommended no further action (NFA) for groundwater (U.S. Army, 2012). Analysis for VOCs and SVOCs at FTMM-12 wells were subsequently discontinued in 2005, and pesticides/PCBs were discontinued in 2009 (**Table 2.2**).

Quarterly groundwater sampling results for permanent monitoring wells obtained from the 2nd quarter 2001 to the 2nd Quarter 2010 are reported by the U.S. Army (2012). Metals (antimony, arsenic, beryllium, cadmium, lead, selenium, and thallium) were detected at concentrations greater than the GWQS, but were considered by the U.S. Army (2012) to be naturally occurring within native soils at FTMM. Metal detections in general, and lead specifically, were concluded to be the direct result of acid leaching of suspended solids in groundwater samples (U.S. Army, 2012). In addition, due to the extremely slow migration rates of metals in groundwater, they were deemed to pose little potential for migration.

Metals in groundwater at FTMM-12 were further evaluated in the Background Metals Evaluation prepared by Brinkerhoff (2011a). A 90th Percentile Analysis was performed on data collected from February 2005 to September 2010 to remove data outliers and obtain a more representative data set. The analysis determined that 90th percentile values for barium, cadmium, chromium, copper, and nickel were below their respective NJDEP GWQS. The mean value for beryllium, selenium, and thallium were also below their respective NJDEP GWQS. Due to possible laboratory inaccuracies affecting selenium and thallium, the 90th percentile analysis was not used to determine compliance for these metals.

4.2.2 Summary of Results From Eight Most Recent Quarterly Sampling Events and 2013 Baseline Sampling

The most recent eight quarters of groundwater monitoring data (September 2009 through May 2011) and baseline data collected in August 2013, are evaluated in greater detail in this subsection as being representative of recent conditions. (Groundwater sampling was discontinued in 2014 after the NJDEP approved the recommendation in the 2013 Baseline Sampling Report [NJDEP 2015]) Both NJDEP and USEPA comparison criteria were used for the reasons described for soil in Section 4.1. USEPA Tapwater RSLs incorporate a TR of 1×10^{-6} and a THQ of 0.1. During the most recent nine sampling events, detected concentrations of selected metals exceeded NJDEP GWQS and/or USEPA Tapwater RSLs.

Table 4.7 summarizes the number of times concentrations of a detected analyte were greater than the NJDEP GWQS and/or USEPA Tapwater RSLs during the most recent eight quarterly sampling events and the August 2013 baseline event, and the number of times detected metal concentrations exceeded the maximum background concentration presented by Weston (1995).

4.2.2.1 Summary of Exceedances of NJDEP and USEPA Comparison Criteria

Concentrations of the following constituents exceeded their current NJDEP GWQS and/or USEPA Tapwater RSL in at least 1 of the 120 samples collected during the most recent eight quarters of groundwater monitoring or the August 2013 (analysis for lead only) baseline samples:

- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, cobalt, iron, lead, manganese, mercury, nickel, silver, selenium, sodium, thallium, and vanadium.

4.2.2.2 Identification of Background Constituents

The metals detected at concentrations exceeding their NJDEP GWQS and/or USEPA Tapwater RSL and also the maximum background concentration for the MP established by Weston (1995) included arsenic, barium, calcium, cobalt, manganese, selenium, silver, and sodium. Exceedance of background levels for these metals are further evaluated below, with the exception of calcium and sodium which are considered to be essential human nutrients.

- The maximum background concentration for arsenic (89.3 µg/L; Weston, 1995) was exceeded five times during the most recent eight sampling events. These exceedances were in monitoring wells located outside of the landfill: once from M12MW14, located upgradient from FTMM-12, and the other four times from M12MW22, which is located cross-gradient from FTMM-12 (**Figure 1.3**). Based on the location of the exceedances, arsenic results are representative of background conditions;
- The maximum background concentration for barium (699 µg/L) reported by Weston (1995) was exceeded one time during the most recent eight sampling events (1,360 µg/L at M12MW12 in May 2011). The other four barium results from well M12MW12 were less than the USEPA Tapwater RSL (290 µg/L) as well as the maximum background concentration. Given the isolated nature of the maximum background exceedance, overall the barium results are representative of background conditions;
- The maximum background concentration for cobalt (18.3 µg/L; Weston, 1995) was exceeded three times during the most recent eight sampling events. Two of the three exceedances occurred in upgradient monitoring well M12MW24. The remaining exceedance (30.4 µg/L at M12MW11 in October 2011) was followed by four cobalt results that were sampled using low-flow methodology that were less than background. Given the location and occurrence of the background exceedances, cobalt results are representative of background conditions;
- The maximum background concentration for manganese (331 µg/L; Weston, 1995) was exceeded 14 times during the most recent eight sampling events. Thirteen of the exceedances occurred in upgradient monitoring wells (M12MW15 and M12MW24) or a cross-gradient monitoring well (M12MW22) and therefore are not site related. The final exceedance occurred in M12MW11 (378 µg/L in October 2010) and was followed by four events that were sampled using low-flow methodology where the manganese results were below background concentrations. Given the isolated occurrence of the background exceedance, manganese results are representative of background conditions;
- The maximum background concentration for selenium (29.6 µg/L; Weston, 1995) was exceeded 12 times during the most recent eight sampling events. Three of the 12 exceedances were in samples from wells located upgradient from FTMM-12 (M12MW14, M12MW15, and M12MW24), and a fourth sample was collected at the upgradient boundary of the landfill (M12MW23). Therefore these four exceedances are not site related. The remaining eight exceedances were in samples from six wells

that had either one or two exceedances followed by four to six results that were below the maximum background concentration. These eight samples were collected in September 2009 or February 2010, prior to initiation of a low-flow, minimal disturbance sampling method, and selenium concentrations are likely reflective of turbidity influences. Therefore, selenium is not considered site related; and

- The maximum background concentration for silver was not established by Weston in 1995 because silver was below detection limits. Therefore, any detection of silver would be over the maximum background concentration. The USEPA Tapwater RSLs (7.1 µg/L) was exceeded five times during the most recent eight sampling events. Three of the exceedances occurred in M12MW22 which is located cross-gradient to the landfill. The remaining two occurred in M12MW16 during low flow sampling events in June and September 2010, and are not readily attributable to turbidity or upgradient occurrences. Therefore, silver should not be considered as site related.

4.2.2.3 COPCs in Groundwater

As shown on **Figure 4.1**, COPCs in groundwater were identified by comparing the maximum detected concentration during the eight most recent quarterly sampling events (September 2009 to August 2011) and the August 2013 sampling event to the USEPA Tapwater RSL (TR = $1x10^{-6}$ and THQ = 0.1). Organic chemicals that were detected at concentrations greater than USEPA Tapwater RSLs would be considered COPCs; however, organic analyses were previously discontinued based on historical monitoring and approval of the NJDEP in November 2004. Metals that were detected at concentrations exceeding the Tapwater RSL were also compared to the maximum detected background concentration (Weston, 1995). Detected metals that also exceeded the maximum background concentration were then assessed more holistically to determine whether background exceedances were representative of site-related contamination or were due to other factors such as turbidity or upgradient sources. Metals exceeding background were exempted from being identified as COPCs as a result of this holistic assessment if any of the following conditions were met:

- There were only a small number of background exceedances during the most recent eight quarterly sampling events and the August 2013 sampling event such that the exceedances were anomalous outliers in time and/or space and not representative of the vast majority of the data;
- The background exceedances occurred early in the time period encompassed by the most recent eight quarterly sampling events, and concentrations in subsequent samples were below the maximum background concentration;
- The background exceedances only occurred in upgradient or cross-gradient monitoring wells;
- Background exceedances cannot be plausibly related to potential site-related sources of contamination; or
- Based on the site-specific evaluation of metals data for FTMM-12.

All metals were deemed to be representative of background conditions. In addition, metals that are considered to be essential human nutrients (calcium, iron, magnesium, potassium, and sodium) were not identified as COPCs.

SVOCs, pesticides and PCBs were ruled out as COPCs based on samples collected from May 1997 to October 2004 (see Section 2.3). NJDEP approved discontinuing analysis for VOCs, SVOCs, pesticides, and PCBs in a November 16, 2004 letter (**Appendix A**).

As a result of the evaluation conducted to determine COPCs for the site, there are no COPCs in groundwater at FTMM-12.

4.3 SURFACE WATER

The scope of the surface water monitoring program implemented from October 1996 to September 2010 is summarized in **Table 2.3**, and sampling locations historically associated with FTMM-12 are shown on **Figure 2.2**. Surface water sampling results are summarized in the following subsections. Information was obtained from previous reports (**Appendix A**) and summary sampling results tables for data collected from October 1996 through September 2010 received from the U.S. Army, and the more recent data from March 2007 through September 2010 has been reproduced in this report as **Table 4.8**.

Table 4.8 also shows NJDEP saline water (SE) Surface Water Quality Standard (SWQS) and USEPA criteria for protection of human health for VOCs, metals, and select wet chemistry constituents for comparison purposes. Both NJDEP and USEPA comparison criteria were used for the reasons described for soil in Section 4.1. A hierarchy of USEPA human health criteria were used in the priority shown below to aid the evaluation. For example, if the highest priority criterion was not available for a particular analyte, the second priority criterion was used, and so on down the line.

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

Three sampling locations (SS-11, SS-12, and SS-19) are located upstream of FTMM-12 and one location (SS-9) is located at the downstream end of FTMM-12. Based on high tide salinity measurements presented in the BEE (Shaw, 2012), SS-9 is consistently saline, with salinity ranging from 16 to 20 ppt. High tide salinity measurements at the nearest upstream location (SS-19) ranged from 1 to 10 ppt, indicating that this reach of Husky Brook is not consistently saline. The high tide salinity measurements for more distant upstream locations SS-12 and SS-11 were 0 ppt, indicating fresh water. The salinity measurements presented in the BEE (Shaw, 2012) indicate that Husky Brook becomes consistently saline between SS-9 and SS-19. Since the mean high tide salinity in the reach extending from SS-9 to SS-19 (11.2 ppt) is greater than 3.5 ppt, the reach is considered saline per N.J.A.C. 7:9B *et seq.* (Shaw, 2012).

Historical reporting indicates that surface water samples collected in Husky Brook at the nearest upstream sampling point from FTMM-12 (SS-19, **Figure 2.2**) from the 2nd Quarter 2001 to the 3rd Quarter 2010 exceeded NJDEP freshwater SWQS for arsenic, bromodichloromethane, and lead (U.S. Army, 2012). Surface water sampling results were not compared to saline SWQS by the U.S. Army (2012). Surface water samples collected at the nearest downstream sampling point from FTMM-09 (SS-09) exceeded NJDEP freshwater SWQS for arsenic and lead. Similar to groundwater samples, it was concluded that metal detections in general, and lead specifically, were the direct result of acid leaching of suspended solids in water samples. Therefore, metals

were not considered to be constituents of concern in surface water (U.S. Army, 2012). Bromodichloromethane was detected during the June 2010 stream sampling event at multiple sample locations (SS-09, SS-12 and SS-19; see **Table 4.7**). This was an isolated detection and was the first time this compound was detected at SS-09 since surface water sampling began in Husky Brook in 1996. Therefore, bromodichloromethane was not considered to be a constituent of concern in surface water (U.S. Army, 2012).

The most recent eight quarters of surface water monitoring data (December 2008 through September 2010) are evaluated in greater detail in the following subsections to represent recent conditions. Saline criteria were used as comparison criteria because sampling location SS-9, which provides the best indication of the impact of FTMM-12 (and the adjacent FTMM-14) on surface water quality, is saline based on high tide salinity measurements presented in the BEE (Shaw, 2012).

Surface water samples were also collected from Husky Brook adjacent to FTMM-12 (and FTMM-14) during the 2010 BEE (Shaw, 2012). The samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Sampling results were compared to ecological screening concentrations (ESC) that are intentionally conservative. The results of the comparisons were used to identify contaminants of potential ecological concern (COPECs). There were no COPECs identified in surface water.

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

Recent surface water monitoring data is available for samples SS-9, SS-11, SS-12, and SS-19 (**Table 4.8**). During the eight most recent sampling events (December 2008 through September 2010), arsenic was the only constituent detected in surface water exceeding the USEPA human health criteria and/or NJDEP SWQS (**Table 4.9**).

Arsenic was detected at generally similar concentrations at both upstream location SS-19 and downstream location SS-9 during the most recent eight quarterly sampling events. Arsenic was detected at upstream location SS-19 during five of eight events at concentrations ranging from 0.75 µg/L to 61.1 µg/L (average 11.7 µg/L, which factors in non-detects). Arsenic was detected at downstream location SS-9 during 8 events at concentrations ranging from 1.16 µg/L to 56.6 µg/L (average 13.9 µg/L). Given the similarity of concentrations in upstream and downstream locations, other factors were considered in the COPC determination, including:

- Arsenic is not a COPC in groundwater at either FTMM-12 or the adjacent FTMM-14 (divided by Husky Brook) because concentrations in site wells are less than the maximum background.
- Arsenic exceeds the USEPA Human Health comparison criterion (0.14 µg/L) at both upstream and downstream locations.
- Although the upstream average concentrations of arsenic (11.7 µg/L) is slightly lower than the average downstream concentration (13.9 µg/L), this change is much smaller than the overall arsenic loading in the stream, indicating minor impact along the site.
- There are at least two storm sewer outfalls at the creek between the two sample locations, which could also influence downstream arsenic concentrations independent of potential FTMM-12 impacts.

In consideration of these factors and due to the uncertainty of the source of arsenic in surface water, there are no surface water COPCs.

4.4 SEDIMENT

Sediment sampling was conducted in April 2000. Eleven borings were advanced at a spacing of approximately every 100 feet into the stream bed of Husky Brook across the 1,700-foot portion of Husky Brook that abuts FTMM-12 and adjacent to site FTMM-14; boring locations are shown on **Figure 2.2**.

Twenty-seven (27) sediment samples were collected, including two duplicate samples for QA/QC purposes. Sample depths ranged from surface (0 to 6 inches below grade) to near-surface (6 to 12 inches) at each boring location, with the exception of borings B-1, B-4, and B-6, which were also sampled at a depth of 18 to 24 inches below grade. Sediment sampling results were compared to both NJDEP and USEPA criteria for the reasons described for soil in Section 4.1. Human health-based criteria for soil are used for comparison purposes to support identification of COPCs. PCBs (specifically Aroclor 1254) were detected in one of the 25 samples collected (duplicate of B-11) at a concentration of 0.279 milligrams per kilogram (mg/kg) in the 0 to 6 inch sample depth. This concentration is slightly greater than the NJDEP RDCSRS of 0.2 mg/kg for total PCBs and also greater than the USEPA Residential Soil RSL (0.11 mg/kg) (**Table 4.10**). The detected PCB concentration does not exceed the NJDEP NRDCSRS or USEPA Industrial Soil RSL. PCBs were not detected in the primary sample at B-11, indicating a high degree of heterogeneity of the sampled medium. As shown on **Figure 2.2**, boring B-11 is located at the upstream edge of FTMM-12; therefore, the detected concentration of Aroclor 1254 is not associated with this site and this analyte is not evaluated as a COPC in the risk assessment (Section 6).

Sediment samples were also collected from Husky Brook adjacent to FTMM-12 during the 2010 BEE (Shaw, 2012). The samples were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Sampling results were compared to screening criteria that are intentionally conservative. The results of the comparisons were used to identify COPECs. COPECs identified in sediment included SVOCs (classified as PAHs), pesticides, PCBs, and metals.

The BEE (Shaw, 2012) concluded that constituents in sediment at FTMM-12 were unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments were not warranted or recommended.

SECTION 5
CONTAMINANT FATE AND TRANSPORT

This section addresses the fate and transport of VOCs, SVOCs, pesticides, and metals detected in vadose zone soil at FTMM-12 at concentrations exceeding one or more NJDEP or USEPA comparison criteria and (in the case of metals) maximum background concentrations reported in Weston (1995) (see Section 4.1). The fate and transport of detected constituents in other sampled media (groundwater, surface water, and sediment) are not addressed because sampling data indicate that these media have not been significantly impacted by historical activities at FTMM-12.

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

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

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

5.1 POTENTIAL ROUTES OF MIGRATION

Potential migration routes for constituents detected in the vadose zone at FTMM-12 include the dissolution of soluble residual concentrations in the vadose zone into infiltrating precipitation that percolates through the vadose zone to the water table, and potential volatilization of some constituents into soil vapor and/or the atmosphere.

5.2 CONTAMINANT PERSISTENCE

5.2.1 VOCs

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

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

Concentrations of VOCs exceeding NJDEP and/or USEPA comparison criteria were rarely detected in soil samples collected at FTMM-12. Therefore, the fate and transport characteristics of specific VOCs detected in vadose zone soil at FTMM-12 are not discussed in this section. In general however, VOCs in soil are subject to volatilization, biodegradation, and vertical migration toward the water table in percolating recharge water. Therefore, VOCs are expected to have a low degree of persistence in vadose zone soil at FTMM-12.

5.2.2 SVOCs

The SVOCs that exceeded NJDEP and/or USEPA comparison criteria in the largest numbers of samples are PAHs. Therefore, the fate and transport analysis in this subsection focuses on PAHs.

The SVOCs identified as COPCs in soil, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz[a,h]anthracene, and indeno(1,2,3-cd)pyrene are PAHs. As hydrocarbons approach a size of approximately 15 to 20 carbon atoms (including the above-listed PAHs), their vapor pressures and water solubilities become negligible, and partitioning to air or dissolution in water is unimportant (American Petroleum Institute [API], 2011). API (2011) generally classifies petroleum substances in the C9 to C25 range as "not readily biodegradable" because their biodegradation rates are typically slower than lighter, more volatile fuels, such as gasoline or jet fuel. Therefore, PAHs are expected to be relatively persistent in vadose zone soil at FTMM-12.

5.2.3 Pesticides

Pesticides that are classified as persistent organic pollutants (including those detected at FTMM-12: dieldrin, chlordane isomers, and DDT) are compounds that are generally insoluble in water, adsorb strongly to soil particles and are resistant to biodegradation. However, some volatilization may occur, enabling them to move long distances before atmospheric deposition occurs. Overall, organic pesticides are expected to be relatively persistent in vadose zone soil at FTMM-12.

5.2.4 Metals

Metals are subject to various transformation processes in soil. For example, metals can exist in the environment in several valence forms, and they can also exist as organometallic compounds that have a metal-carbon bond. Metal transformation processes, such as metal methylation, complexation, and oxidation/reduction occur through interactions with other chemicals and biota in the environment. In general however, metals are elements that are not subject to natural degradation in the environment and therefore are expected to be relatively persistent in vadose zone soil at FTMM-12.

5.3 CONTAMINANT MIGRATION

5.3.1 VOCs

Concentrations of VOCs exceeding NJDEP and/or USEPA comparison criteria were rarely detected in soil samples collected at FTMM-12. In general however, VOCs such as benzene and vinyl chloride are expected to be moderately to highly mobile in vadose zone soil.

5.3.2 SVOCs

For the reasons described in Section 5.2.2, PAHs identified in near-surface soil at FTMM-12 are expected to be relatively immobile and will not readily leach to groundwater.

5.3.3 Pesticides

For the reasons described in Section 5.1.3, the organic pollutant pesticides present at FTMM-12 are expected to be strongly sorbed to soil particles and have little to no mobility in soil. Therefore, they will not readily leach to groundwater.

5.3.4 Metals

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

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

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

Metals are usually cations, including those identified as COPC in Section 4.1.2. Therefore, metals COPC in vadose zone soil at FTMM-12 are expected to have low mobility.

5.4 SUMMARY

The contaminant fate and transport information presented above indicates that VOCs in vadose zone soil are expected to have a low persistence and moderate to high mobility in vadose zone soil. In contrast, SVOCs, pesticides, and metals in near-surface soil at FTMM-12 are expected to be persistent and immobile, limiting their impact on groundwater quality. Metals in groundwater will likely be moderately to highly sorbed to aquifer matrix materials and thus have more limited mobility than VOCs, but their mobility in groundwater is dependent on too many metal- and site-specific factors to predict with confidence. NJDEP (2003) found that New Jersey soils typically have high iron concentrations. Glauconitic soils have iron-rich clay minerals (Dooley, 2001); these soils are common at FTMM and potentially may enhance sorption of metals to the soil matrix in the saturated zone.

SECTION 6
BASELINE RISK ASSESSMENT

The objective of this baseline Human Health Risk Assessment (HHRA) is to provide a quantitative evaluation of the risk associated with exposure to soil, surface water, sediment, and groundwater at FTMM-12. The HHRA will determine if there is potential unacceptable risk to human health associated with exposure to contaminants present in these environmental media. The streamlined method to assess human health risk at FTMM-12 was developed as a component of a presumptive remedial strategy for the landfills at FTMM. The streamlined method was developed without consultation with the U.S. Army Public Health Command. However, as discussed below, the resulting quantitative risk estimates are comparable to those resulting from conventional risk assessment methods defined in the *Risk Assessment Guidance for Superfund* (RAGS; USEPA, 1989) and U.S. Army Corps of Engineers' (USACE) *Risk Assessment Handbook* (EM 200-1-4) (USACE, 1999) for the purpose of evaluating risk at a landfill site where a presumptive remedy will be implemented.

In a letter to Ms. Wanda Green, BRAC Environmental Coordinator at FTMM, dated August 27, 2012, NJDEP (2012) accepted the revised BEE submittal (Shaw, 2012), agreed that "all exceedances have been sufficiently evaluated and addressed for ecological receptor considerations", and stated that "no additional ecological evaluation or assessment is necessary for the Main Post and Charles Wood Area." Therefore, additional ecological risk evaluation was not performed for FTMM-12.

6.1 RISK ASSESSMENT PROCESS

6.1.1 Summary of Available Data for FTMM-12

This quantitative HHRA for FTMM-12 used the data collected in the investigations summarized in Section 2 of this RI. As described in Section 2, environmental sampling at the site included surface soil, sediment, surface water, and groundwater.

The analytical results for chemicals detected in each environmental medium at FTMM-12 are provided in data summary tables in Section 4 of this RI (**Tables 4.1, 4.2, 4.3, and 4.4** [soil], **Tables 4.5**, **4.6, and 4.7** [groundwater], **Table 4.8 and 4.9** [surface water], and **Table 4.10** [sediment]). COPCs were identified in soil (**Table 4.4**). No COPCs were identified in groundwater (**Table 4.7**), surface water (**Table 4.9),** or sediment (**Table 4.10**)**.**

6.1.2 General HHRA Approach and Guidance Documents

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

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

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

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

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

The USEPA RSLs are risk-based concentrations that were developed by USEPA to rapidly identify chemicals that have the potential to present human health risks as a result of exposure. The exposures of concern for FTMM-12 include inhalation, ingestion, and dermal contact of outdoor workers, utility workers, and recreational users to COPCs. Site-specific screening levels for exposure of utility workers and recreational users to soil were calculated to support this risk evaluation.

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

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

RAGS-based approach and the USEPA risk ratio approach conducted for FTMM-12 as described in this report.

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

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

6.1.3 Organization of HHRA Report

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

6.1 Risk Assessment Process;

6.2 Data Evaluation and Identification of Constituents of Potential Concern;

6.3 Exposure Assessment;

6.4 Risk Ratio and Screening Criteria Assessment; and

6.5 Risk Assessment Results and Uncertainties.

6.2 DATA EVALUATION AND IDENTIFICATION OF CONSTITUENTS OF POTENTIAL CONCERN

Soil data included in the risk assessment were collected in 1998 and 1999 (Versar, 2004b). Surface water and groundwater data are included from the most recent eight sampling events and lead sampling data collected in August 2013 during the baseline groundwater sampling event. The validated data were evaluated in the selection of COPCs. Data validation classified the data through the use of several qualifiers. Data without qualifiers were considered appropriate for risk assessment purposes. Following USEPA guidance (1989), data with J, E or ER, and D qualifiers were treated as detects and used for risk assessment purposes. U and UJ qualified data were considered to be nondetected, but usable for risk assessment purposes. B and BJ qualified data were treated as nondetected chemicals because the chemical was detected in the associated blank and the estimated chemical concentration in the sample was less than five or ten times the concentration in the associated blank (USEPA, 1989).

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

COPCs at FTMM-12 are those site-related contaminants for which there is evidence of a potential release due to historical site activities. COPCs are then evaluated for their potential to pose a risk to human health. Soil, surface water, sediment, and groundwater have been sampled at the site. Sampling results for the chemicals detected in each of the environmental media are summarized in **Tables 4.1, 4.2, 4.3, and 4.4** [soil], **Tables 4.5**, **4.6, and 4.7** [groundwater], **Table 4.8 and 4.9** [surface water], and **Table 4.10** [sediment]). The COPCs identified in soil are presented in **Table 4.4**. No COPCs were identified in groundwater (**Table 4.7**), surface water (**Table 4.9**), or sediment (**Table 4.10**). Therefore, groundwater, surface water, and sediment will not be evaluated further in the risk assessment.

6.2.1 Risk Ratio Approach

The quantitative HHRA uses a risk ratio approach to quantify the potential cumulative carcinogenic risk and non-carcinogenic hazard for COPCs in each contaminated medium. The general risk assessment process for FTMM-12 is summarized in **Figure 6.1**.

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

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

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

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

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

Lead is not included in the cumulative risk ratios. Following USEPA guidance, lead is evaluated based on the potential for exposure to increase blood lead levels and not the potential for carcinogenic or non-carcinogenic risks. Therefore, lead concentrations (either the maximum detected concentration or the 95% UCL, as appropriate) at the site are directly compared to the screening level. For soil, the Industrial Soil RSL (TR = 1 x 10^{-6}; THQ = 1.0) is used for outdoor

workers, and the site-specific utility worker or recreational user screening level is used in the risk ratio. If lead concentrations at the site exceed the screening level, then unacceptable risk is assumed. However, if lead concentrations are less than the screening level, then further evaluation of the risk associated with exposure to lead is not required and further management of the risk associated with exposure to lead will not be required.

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

The ALM assumes a baseline blood lead level to ensure that exposure does not result in exceedances of a target blood lead level when considered additively. The ALM references two different National Health and Nutrition Examination Survey (NHANES) studies that estimated baseline blood lead levels in adults. To determine a soil concentration that would not result in a blood lead level (considering a baseline blood lead level) greater than 10 micrograms per deciliter (µg/dL), the soil concentration is adjusted until the model returns a blood lead level of 10 µg/dL. The ALM can also calculate a preliminary remediation goal (PRG) for women of child-bearing age, assuming a fetal blood lead level of 10 µg/dL. The screening level for the utility worker, is based on the lowest (most conservative) PRG that attains a target fetal blood lead level of 10 µg/dL (1,400 mg/kg). The ALM was also used to calculate a PRG assuming that a pregnant adolescent recreational user contacted lead contaminated soil at the site. This is a conservative approach, since the probability of a pregnant recreational user contacting soil at the site in a manner consistent with the exposure assumptions used in this calculation is quite low. The lowest (most conservative) PRG that attains a target fetal blood lead level of 10 µg/dL is 2,700 mg/kg, which is protective of the pregnant adolescent recreational user. Therefore, this PRG is used as the screening level for recreational users exposed to lead in soil at the site. If lead concentrations at the site exceed the screening level, then unacceptable risk is possible. However, if lead concentrations are less than the screening level, then further evaluation of the risk associated with exposure to lead is not required and further management of the risk associated with exposure to lead will not be required.

USEPA guidance (USEPA, 1989) also allows elimination of COPCs if they are detected in fewer than 5 percent of the samples in a particular medium. This would require at least 20 samples. However, detection frequency was only qualitatively reviewed on a case by case basis in this HHRA and only following the risk ratio analysis (e.g., infrequently detected chemicals that are driving an unacceptable risk are identified). Thus, constituents were not screened from the HHRA based on detection frequency.

6.2.2 Soil Samples

This HHRA evaluates constituents identified as COPCs, which includes those analytes attributed to site activities for which there is evidence of a release to environmental media. Organic compounds detected at concentrations greater than screening levels, and metals detected at concentrations greater than screening levels and greater than background concentrations, were identified as COPCs and included in the risk assessment. Surface soil at the site is defined as soil collected at depths less than two feet from the surface and would include exposure pathways with no, or very minor, soil disturbance (e.g., wind dispersion of surface soil, landscaping/grounds keeping activities in surface soil). Surface soil samples were collected in 1998 and 1999 (Versar, 2004b). Each of the soil samples, except those prepared for VOC analysis, were collected between approximately 6 and 12 inches bgs. VOC samples were taken at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time. **Tables 4.1, 4.2, and 4.3** provides the sampling depths and analytical laboratory results and **Figure 2.1** shows the soil sampling location **Table 4.4** shows the COPCs in soil that are evaluated in the HHRA.

6.2.3 Groundwater Samples

Multiple rounds of groundwater samples were collected from monitoring wells at FTMM-12 (**Figure 1.3**). Many of these samples were collected at the same wells during different time frames and not all sampling activities included analyses for a complete suite of analytes.

The locations of groundwater monitoring wells at FTMM-12 are provided on **Figure 1.3**. **Tables 2.1 and 2.2** present the well construction summary and groundwater sampling summary. Groundwater sampling results for data from 2008 through 2011 are presented in **Table 4.5** and groundwater sample results for data from August 2013 are presented in **Table 4.6**. No COPCs were identified in groundwater at FTMM-12 (**Table 4.7**). Therefore, there are no complete exposure pathways for groundwater, and no unacceptable risks due to exposure to groundwater are expected.

6.2.4 Sediment Samples

Sediment samples were collected in April 2000. Sample depths ranged from surface (0 to 6 inches below grade) to near-surface (6 to 12 inches) at each boring location, with the exception of borings B-1, B-4, and B-6, which were also sampled at a depth of 18 to 24 inches below grade (**Table 4.10**). Sediment sample locations are shown on **Figure 2.2.** No COPCs were identified in sediment at FTMM-12. Therefore, there are no complete exposure pathways for sediment, and no unacceptable risks due to exposure to sediment are expected.

6.2.5 Surface Water Samples

Surface water samples were collected from locations upgradient and downgradient of FTMM-12 (**Figure 2.2**). The data set includes multiple samples collected at the same locations at different times and not all sampling activities included analyses for a complete suite of analytes. Because of the sampling strategy in the area and the potential for changing conditions over time, only the maximum detected concentrations of the samples analyzed from the most recent eight surface water sample events were evaluated, which includes samples collected between March 2007 and September 2010. Three sampling locations (SS-11, SS-12, and SS-19) are located upstream of FTMM-12 and one location (SS-9) is located at the downstream end of FTMM-12.

No site-related COPCs were identified in surface water at FTMM-12. Therefore, exposure to surface water at FTMM-12 is considered an incomplete pathway, and no unacceptable risks due to exposure to surface water are expected.

6.3 EXPOSURE ASSESSMENT

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

Soil is evaluated as the environmental medium of concern at FTMM-12. The exposure pathways relevant to the site are described in this exposure assessment of the HHRA and shown in the CSM.

6.3.1 Conceptual Site Model

A CSM is an effective tool for defining site dynamics, streamlining risk assessments, establishing exposure hypotheses, and developing appropriate corrective actions. The CSM diagram for FTMM-12 is provided as **Figure 6.2**. CSMs are useful for identifying completed exposure pathways between the contaminated media and potential receptors. The purpose of the CSM is to aid in understanding and describing a site and presents the assumptions regarding:

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

An overall description of contaminant sources, affected media, and removal actions was provided in previous sections. Potential receptors and completed exposure pathways are discussed in the following subsections.

6.3.2 Potential Receptors and Exposure Pathways

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

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

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

Observations and reasonable assumptions for the potential human receptors for FTMM-12 are listed below, and summarized in **Figure 6.2**.

- **Current Receptors –** FTMM-12 is a landfill that was used for domestic and industrial waste disposal. The Fort Monmouth Economic Redevelopment Planning Authority (FMERPA) reuse plan calls for FTMM-12 to be designated as passive open space (Edaw, Inc., 2008). It is currently vacant and unused. There are no new development activities occurring. Current activities at the site include infrequent visits, such as those that would be performed during routine landscaping/mowing, resulting in exposure to COPCs in soil through incidental ingestion, dermal contact, and inhalation of volatiles and particulates. Exposure to soil by a current outdoor worker was assumed for this current land use scenario. This calculation assumes an exposure frequency of 225 days per year and an exposure duration of 25 years. Thus, it provides a conservative evaluation for a potential current outdoor worker who would be expected to have less frequent exposure at this particular site. Husky Brook exits Husky Brook Lake and becomes Oceanport Creek just downstream of FTMM-12. Surface water at FTMM-12 is transported northward or northeastward via overland flow toward Husky Brook (**Figure 2.2**). The surface water is not used as a potable water resource. Incidental ingestion of surface water/sediment, inhalation of volatiles from surface water/sediment, and dermal contact with surface water/sediment were assumed for this current land use scenario. However, no COPCs were identified in surface water or sediment at the site. Therefore, current exposure to surface water/sediment is an incomplete pathway;
- **Future Receptors –** Evaluation of the outdoor worker as a current receptor would be protective of future outdoor workers as well and is not re-evaluated for the future scenario. There are no current plans to develop commercial buildings at the site, but if commercial buildings were constructed in the future, then indoor workers would potentially be exposed to soil. Evaluation of the current outdoor worker would also protect the hypothetical future indoor commercial worker, because indoor commercial worker exposure to soil would be much less than the outdoor worker. Thus, the indoor worker exposure scenario was considered to be conservatively evaluated by the above current outdoor worker scenario. Future utility workers may be present on the site, involved in single short-term excavation projects at a given location, such as would be expected to be associated with repair or installation of utility lines. The calculation of the exposure of a utility worker to soil assumes that the utility crew would not return to the same location to conduct additional repairs, installation, or maintenance of underground utility lines. Utility workers are assumed to be on-site for 30 days of the year, over the course of one year and would be expected to come in contact with soil and shallow groundwater during excavation activities. Utility workers may also come in contact with surface water and sediment. However, surface water and sediment pathways are evaluated for the outdoor worker, which would be protective of the utility worker, since the exposure duration for outdoor workers is longer than for utility workers. No COPCs were identified in groundwater, surface

water, or sediment at the site. Therefore, future exposure to groundwater and surface water/sediment is an incomplete pathway for utility workers. The FMERPA reuse plan calls for FTMM-12 to be designated as passive open space. Because the site is planned to be passive open space, a future recreational user could be exposed to COPCs in the soil. The calculation of the exposure of a recreational user to soil assumed that the person is onsite once a week for 50 weeks of the year, for 24 years. Further, the site-specific screening value for the recreational user assumes that a portion of the time is spent on the site as an adolescent (age 6 to 16) and a portion as an adult (age 17 to 30). This provides a conservative evaluation for a future recreational user that is not likely to be onsite every week of the year. The site is not residential and no plans are in place to convert it to residential use. Therefore, the future residential scenario was not further evaluated;

- **Current Exposure to Groundwater –** Site groundwater is not used by current outdoor workers or indoor workers because municipal water is provided for use. Therefore, there are no current exposures to groundwater. Groundwater does not contain COPCs and the current outdoor worker exposure to groundwater scenario was not further evaluated; and
- **Future Exposure to Groundwater** – In areas with shallow groundwater (i.e., groundwater present at depths less than 15 ft bgs), utility workers may also be exposed to contaminants present in groundwater. Future utility workers may be present on the site, involved in single short-term excavation projects at a given location, such as would be expected to be associated with repair or installation of utility lines. The calculation of the exposure of a utility worker to groundwater assumes that the utility crew would not return in subsequent years to the same location to conduct additional repairs, installation, or maintenance of underground utility lines. Utility workers are assumed to be on-site for 30 days of the year, over the course of one year. However, there are no COPCs present in groundwater. Therefore, utility worker exposure to groundwater is an incomplete pathway and is not further evaluated. Outdoor workers, indoor workers, and recreational users are not exposed to groundwater. Therefore, the outdoor worker, indoor worker, and recreational user groundwater exposure pathways are incomplete. The site is not planned for future residential use. Therefore, future residential exposure to groundwater is an incomplete exposure pathway.

6.3.3 Exposure Pathways

6.3.3.1 Soil Exposure Pathways

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

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

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

- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future outdoor worker. This is a potentially complete exposure pathway but is not included in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (based on the exposure frequency and exposure duration);
- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future utility worker. This calculation assumes an exposure frequency of 30 days per year and an exposure duration of one year; and
- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future recreational user. This calculation assumes an exposure frequency of 50 days per year (one time per week) for 24 years. Further, the calculation assumes that a portion of the recreational user exposure occurs as an adolescent (age 6-16) and a portion as an adult (age 17-30). Thus, it provides a conservative evaluation for a future recreational user that is expected to be onsite less frequently than one time per week.

6.3.3.2 Groundwater Exposure Pathways

Exposure to groundwater can occur through direct contact (ingestion and dermal contact) and through inhalation of volatile COPCs present in groundwater. However, FTMM-12 is currently vacant and unused and there are no plans for development of the land. There are no supply wells present on-site and none are planned. All potable water is provided through municipal water supplies. No COPCs were identified in groundwater, so all groundwater exposure pathways are incomplete.

6.3.3.3 Surface Water and Sediment Exposure Pathways

Surface water at FTMM-12 is transported northward or northeastward via overland flow toward Husky Brook (**Figure 2.2**). The surface water is not used as a potable water resource. No COPCs were identified in surface water or sediment, so the surface water and sediment exposure pathways are incomplete.

6.4 RISK RATIO AND SCREENING CRITERIA ASSESSMENT

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

6.4.1 Risk Ratio Assessment

The risk ratio method considered risk due to exposure to soil at FTMM-12. For the risk ratio assessment, the EPC, either the maximum detected concentrations or the 95% UCL (as defined in Section 6.2.1), was used to calculate risk for soil.

In the risk ratio analysis, the EPC was divided by the appropriate screening level (as described in Section 6.2.1) for the environmental medium to calculate the risk ratio. The risk ratio for soil was calculated for outdoor workers, utility workers, and recreational users. The risk ratio screening levels for soil are the USEPA Industrial Soil RSLs (TR = 1 x 10^{-6}; THQ = 1.0),

site-specific screening levels for utility workers, and site-specific screening levels for recreational users.

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

6.4.2 Risk Ratio Equations

Carcinogenic risks were estimated using the following equation.

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

where:

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

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

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

$RSL_{c\text{-}i}$ = Medium–specific human health screening level (mg/kg for soil) for carcinogenic chemical "i".

Non-carcinogenic risks were estimated using the following equation.

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

where:

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

THQ = Target hazard quotient of one (unitless);

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

$RSL_{nc\text{-}i}$ = Medium-specific human health screening levels (mg/kg for soil for non-carcinogenic chemical "i".

6.4.3 Screening Criteria

6.4.3.1 Soil Screening Criteria

The soil results were evaluated using USEPA Industrial RSLs for outdoor workers, site-specific screening levels for utility workers, and site-specific screening levels for recreational users. The USEPA RSL is based on a combined exposure (i.e., incidental ingestion of soil, dermal contact and inhalation of particulates and volatiles). The utility worker and recreational user screening levels were calculated using the USEPA RSL calculator, based on site-specific exposure parameters (USEPA, 2013b). The equations and inputs used in the calculator are provided in **Appendix B**. The calculated utility worker and recreational user screening levels are based on combined exposure (i.e., incidental ingestion, dermal contact, and inhalation of particulates and volatiles). The exposure parameters for utility workers assumed exposure of 30 days per year, over the course of one year. The utility worker is assumed to be an adult. The exposure parameters for recreational users assumed exposure of one time per week. Thus, there are 50 exposure events per year for 24 years. Further, the recreational user is expected to be onsite partially as an adolescent (age 6 to 16 years) and partially as an adult (age 17 to 30). The exposure parameters used in the utility worker and recreational user screening levels calculations are shown in **Appendix B**. The outdoor worker screening levels are provided in the USEPA Industrial RSL tables, but for comparison, the exposure parameters for the outdoor worker are also shown in **Appendix B**. The USEPA RSL table indicates whether a chemical is carcinogenic, non-carcinogenic, or both. If a chemical is considered both carcinogenic and non-carcinogenic, it will be included in the cumulative cancer risk calculation and the cumulative hazard quotient calculation.

6.5 RISK ASSESSMENT RESULTS AND UNCERTAINTIES

The primary objective of this HHRA was to quantitatively characterize the human health risk associated with current and reasonably expected future exposure to contaminated media at FTMM-12. As discussed in Section 6.3, potentially complete exposure pathways for the site were evaluated. The exposure pathways were outlined in Section 6.3 and were also shown on the CSM (**Figure 6.2**). The results of the risk ratio quantification are presented in this section.

6.5.1 Estimated Risks for Soil

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

No unacceptable hazards were calculated for the non-carcinogenic COPCs in soil at FTMM-12, using the maximum detected concentration or the 95% UCL for those COPCs that are the greatest contributors to cumulative risk. The cumulative hazard for outdoor workers was 0.4 (**Table 6.1**), the cumulative hazard for utility workers was 0.1 (**Table 6.2**), and the cumulative hazard for future recreational users was 0.06 (**Table 6.3**). The cumulative hazards are less than 1, indicating that an unacceptable non-carcinogenic risk to outdoor workers, utility workers, utility workers, or recreational users exposed to soil is unlikely.

As previously discussed, lead was evaluated separately from the other chemicals. The maximum detected concentration of lead provides a hazard quotient greater than one, however, when the 95% UCL is used as the EPC (to provide a more accurate estimate of exposure) the

hazard quotient was less than 1 for outdoor workers (**Table 6.1**), utility workers (**Table 6.2**), and recreational users (**Table 6.3**), indicating that an unacceptable risk to outdoor workers, utility works, or recreational users exposed to soil is unlikely.

The cumulative carcinogenic risk ratio for outdoor workers was 3×10^{-5} (**Table 6.1)** which is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative carcinogenic risk ratio for future utility workers was 3×10^{-7} (**Table 6.2**), which is less than the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative carcinogenic risk for recreational users was 8×10^{-6} (**Table 6.2**), which is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. Therefore, unacceptable carcinogenic risks associated with exposure to soil for outdoor workers, utility workers, and recreational users is unlikely.

6.5.2 Risk Assessment Uncertainties

All risk assessments involve use of assumptions, professional judgments, and imperfect data to varying degrees, which result in uncertainty in the final estimates of risk. Risk assessment in general is often based on conservative assumptions and scenarios. Uncertainty can be introduced into a risk assessment at every step of the process outlined in this document. Uncertainties are present in a risk assessment because it required integration of the following:

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

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

6.5.2.1 Uncertainty in Data Collection and Evaluation

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

Constituents detected in soil at the site and included in the risk assessment were retained regardless of how frequently they had been detected. USEPA's ProUCL 5.0 will calculate UCLs for datasets with small sample sizes in order to accommodate the Incremental Sampling Method (USEPA, 2013a). Because the soil samples collected at FTMM-12 were collected as discrete samples, not all UCLs calculated or suggested by ProUCL are appropriate for use in the risk calculations. Parametric and non-parametric methods (i.e., Chebyshev [Mean, Sd], KM [Percentile Bootstrap], KM [Chebyshev], Adjusted Gamma KM, and Approximate Gamma KM) were used to determine the 95 % UCL for the analytes with six or more samples. For analytes with six samples or less or if ProUCL generated a warning with regards to unreliable statistics,

the maximum detected concentration was used as the EPC. The use of the maximum detected concentration introduces uncertainty into the risk assessment, since the use of one analytical result likely does not accurately represent the concentration of the constituent in the volume of soil that is being evaluated. In cases where the analyte is infrequently detected, the use of the maximum concentration will likely overestimate the actual EPC, resulting in an overestimate of the risk. In cases with few total samples, the use of the maximum detected concentration can either over- or under-estimate the exposure concentration depending on the distribution of the actual concentrations in the medium of concern.

USEPA has researched how to determine the appropriate method for calculating a 95% UCL based on the data distribution, data set size, skewness, and percentage of non-detect observations. The ProUCL output included in **Appendix B** states, "Suggestions regarding the selection of a 95% UCL are provided to help the user select the most appropriate 95% UCL." ProUCL generates UCLs using all available methods for each data set, regardless of the appropriateness of the method. The results listed under "Suggested UCLs to Use" are the results recommended by ProUCL based on data size, data distribution, and skewness of the data set, as well as the results of simulation studies. Where more than one result was listed in the ProUCL output in "Suggested UCLs to Use", the most conservative (highest) of the recommended "Suggested UCLs to Use" was selected for use as the EPC. This is a default selection made without regard to scientific validity. The use of the most conservative UCL may overestimate the EPC and, therefore, the risk.

Risk was calculated for constituents detected in individual wells to determine where on the site the risks due to exposure to groundwater were present. If risk divers were identified, the 95% UCL for the risk drivers in that well were calculated from the most recent eight quarters of groundwater data, plus the data collected as part of the baseline groundwater study conducted in 2013. The calculation of a 95% UCL for individual wells will have the same uncertainties as 95% UCLs for soil as described above. In addition, the 95% UCL for each well includes data over time, and may overestimate the risk if the concentration of constituents in water is naturally attenuating. The 95% UCL for each well may underestimate risk if the number of detected concentrations is less than six.

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

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

6.5.2.2 Uncertainty in Exposure Assessment

The risk assessment estimates are conditional on actual and potential exposure pathways identified at the site. If exposure does not occur, no risks are present. Furthermore, the risk assessment process does not factor in the probability of exposure occurring. For example, there

may not be a reason for an outdoor worker to be present on site 225 days per year. The actual exposure for the potential landscaper/groundskeeper is likely to be less often than 225 days per year.

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

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

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

6.5.2.3 Uncertainty in Toxicity Assessment

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

6.5.2.4 Uncertainty in Estimating Chemical Risk

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

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

6.5.3 Conclusions

The HHRA was conducted to evaluate the potential for human health impacts as a result of potential exposures to chemicals in soil at FTMM-12.

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

- Current/future outdoor worker exposed to surface soil: The cumulative carcinogenic risk of 3×10^{-5} is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.4, which is less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.09, which is less than 1;
- Future utility worker exposed to surface soil: The cumulative carcinogenic risk of 3×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.1, less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.05, which is less than 1. These results indicate that unacceptable carcinogenic risk, unacceptable non-carcinogenic hazard, or risks from exposure to lead in soil are unlikely for future utility workers; and
- Future recreational users exposed to surface soil: The cumulative carcinogenic risk of 8×10^{-6} is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.06, less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.03, which is less than 1.

SECTION 7
REMEDIAL INVESTIGATION SUMMARY

7.1 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of targeted constituents exceeding NJDEP and/or USEPA comparison criteria in sampled media at FTMM-12 are summarized below.

7.1.1 Soil

A total of 153 near-surface soil samples were collected from the top 2 feet of the soil column at FTMM-12 during RI sampling activities in 1998 and 1999, and an additional 65 supplemental soil samples were collected in 2001. Concentrations of the following constituents exceeded the current NJDEP RDCSRS and/or USEPA Residential Soil RSL in at least one soil sample:

- The VOCs benzene and vinyl chloride;
- The SVOCs (classified as PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo (k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides dieldrin and 4,4'-DDT; and
- The metals aluminum, antimony, arsenic, cadmium, cobalt, copper, iron, lead, manganese, mercury, thallium, vanadium, and zinc.

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

- The SVOCs (classified as PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene; and
- The metals arsenic, iron, lead, and mercury.

Concentrations of the following constituents exceeded the current NJDEP IGW standard and/or USEPA IGW Risk-Based RSL in at least one soil sample:

- The VOCs methylene chloride, cis-1,2-dichloroethene (cis-1,2-DCE), benzene, toluene, acetone, vinyl chloride, ethylbenzene, and xylenes;
- The SVOCs naphthalene, 2-methylnaphthalene, acenaphthene, dibenzofuran, fluorene, di-n-butylphthalate, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h) anthracene;
- The pesticides/PCBs dieldrin, gamma-chlordane, alpha-chlordane, 4,4'-DDE, 4,4'-DDD, and 4,4'DDT; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

The maximum-detected concentrations of the metals targeted for analysis in the 153 near-surface soil samples exceed their maximum background concentration for the MP presented in Weston (1995).

Based on comparison to USEPA Residential Soil RSLs and (in the case of metals) maximum background concentrations presented in Weston (1995), COPCs in soil that are evaluated in the risk assessment include: 1) the VOCs benzene and vinyl chloride; 2) the SVOCs benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene; 3) the pesticides dieldrin and 4,4'-DDT; and 4) the metals aluminum, antimony, arsenic, cadmium, cobalt, copper, lead, manganese, mercury, thallium, vanadium, and zinc.

7.1.2 Groundwater

The Versar RI (2003a) identified arsenic and lead as the primary constituents of concern in FTMM-12 groundwater, but additional soil borings centered on two wells along with low hydraulic conductivity, sorption of the metals to the soil, and low potential for contaminant migration indicate that the impact of arsenic and lead in groundwater is minimal.

During the 10-year period from 2001 to 2010, metals (antimony, arsenic, beryllium, cadmium, lead, selenium, and thallium) were detected at concentrations greater than the GWQS, but were considered by the U.S. Army (2012) to be naturally occurring within FTMM soils, and it was concluded that concentrations were biased high due to turbidity influences. In addition, due to the extremely slow migration rates of metals in groundwater, they were deemed to pose little potential for migration and were not considered to be constituents of concern.

During the most recent eight quarters of monitoring, only concentrations of arsenic, barium, cobalt, manganese, selenium and silver exceeded the current USEPA Tapwater RSL and maximum background concentration (Weston, 1995) in at least one sample. The highest concentrations of most metals in groundwater during the most recent eight quarters of sampling were at wells M12MW14, M12MW22, and M12MW24 located upgradient or cross-gradient from FTMM-12. Based on comparison to maximum background concentrations (Weston, 1995) and additional weight of evidence (Section 4.2.3), the detected metals are representative of natural background conditions and are not considered to be site-related constituents of concern in groundwater. No COPCs were identified in groundwater.

7.1.3 Surface Water

Surface water samples were collected at two to four locations in Husky Brook and Husky Brook Pond from October 1996 to September 2011. These sampling locations have historically been associated with FTMM-12 in previously prepared reports and are located upstream and downstream of FTMM-12.

The most recent eight quarters of surface water monitoring data (December 2008 to September 2010) were evaluated as being representative of recent conditions. Concentrations of VOCs and metals detected upstream of FTMM-12 and FTMM-14 are similar to concentrations detected at the downstream edge of the sites. This comparison indicates that FTMM-12 (including adjacent site FTMM-14) is not significantly impacting VOC or additional metal concentrations in the reach of Husky Brook that borders the site. There are no surface water COPCs.

7.1.4 Sediment

Sediment sampling was conducted in April 2000 in Husky Brook to evaluate PCB-related impacts to stream sediments associated with FTMM-12. One PCB (Aroclor 1254) was detected

in 1 of 25 samples collected at a concentration slightly greater than the NJDEP RDCSRS and USEPA Residential RSL for soil. The detected PCB concentration does not exceed the NJDEP NRDCSRS or USEPA Industrial Soil RSL. The PCB detection occurred at the upstream boundary of FTMM-12, and is therefore not associated with this site.

7.2 CONTAMINANT FATE AND TRANSPORT

Primary constituents of interest in terms of contaminant fate and transport at FTMM-12 include SVOCs, pesticides, and metals in soil. SVOCs, pesticides, and metals in near-surface soil at FTMM-12 are expected to be relatively persistent and immobile, as described in Section 5, limiting their IGW quality.

7.3 BASELINE RISK ASSESSMENT

An evaluation of the potential risk resulting from human exposure to soil, surface water, sediment, and groundwater was conducted as part of this RI. No COPCs were identified in groundwater, surface water, or sediment. Therefore, further evaluation of these media in the baseline risk assessment was not conducted. The HHRA utilized a conservative screening approach that overestimates potential human exposure to the maximum detected concentration of analytes in soil.

For outdoor workers exposed to soil at FTMM-12, the cumulative carcinogenic risk of 3×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.4, less than the cumulative hazard goal of 1. The risk ratio for lead is 0.09, which is also less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for outdoor workers are expected from exposure to soil at FTMM-12.

For utility workers exposed to soil at FTMM-12, the cumulative carcinogenic risk of 3×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.1, less than the cumulative hazard goal of 1. The risk ratio for lead is 0.05, which is also less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for utility workers are expected from exposure to soil at FTMM-12.

For recreational users exposed to soil at FTMM-12, the cumulative carcinogenic risk of 8×10^{-6} is within the cumulative risk goal of 1×10^{-4} to 10^{-6} for soil. The cumulative non-carcinogenic hazard is 0.06, which is less than the cumulative hazard goal of 1. The risk ratio for lead is 0.03, which is also less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for recreational users are expected from exposure to soil at FTMM-14.

SECTION 8
CONCLUSION

The RI concluded that risks to human health and the environment from soil are within acceptable ranges for current and future intended land use. A FS was not performed because the RI concluded that NFA is required at FTMM-12 under CERCLA.

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

Institutional Controls (ICs) to maintain the soil cover and prevent residential land use will also be implemented at FTMM-12. The U.S. Army will prepare a Land Use Control (LUC) Implementation Plan during the remedial design phase to document the location of the engineering control and detail the landfill cover inspection, reporting and long-term management requirements. In addition, as part of the LUC implementation, and prior to designing and placing the vegetated soil cover, refinement of the landfill boundary will be performed with a pre-design investigation based on the data gaps identified in Section 1.3.2.

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

The estimated total present value (TPV) of the soil cover and ICs is approximately $1,620,000. The capital cost to install the vegetative cap is $1,470,000. Costs associated with ICs include preparation of a LUC Implementation Plan is $150,000. Refinement of the landfill boundaries, as well as IC inspection and reporting is for a 30-year duration. Costs associated with the vegetative cover include advancement of two geotechnical borings, placement of 18 inches of a soil cover, followed by 6 inches of a vegetative cover, grading for runoff, and seeding. The cost estimate is provided in **Appendix C**.

SECTION 9
REFERENCES

American Petroleum Institute, 2011. Heavy Fuel Oils Category Analysis and Hazard Characterization. Interim Final Submitted to the US EPA. July 12.

Brinkerhoff Environmental Services, Inc. (Brinkerhoff). 2010. MODFLOW Groundwater Modeling, US Army, Fort Monmouth, Main Post and Charles Wood Areas. June 10.

Brinkerhoff. 2011a. Background Metals Evaluation. U.S. Army Garrison Fort Monmouth, Main Post. May.

Brinkerhoff. 2011b. Landfill M-12 (FTMM-12) Classification Exception Area. U.S. Army Garrison Fort Monmouth, Main Post, Fort Monmouth, New Jersey. June.

Dooley, J.H., 2001. Baseline Concentrations of Arsenic, Beryllium, and Associated Elements in Glauconite and Glauconite Soils in the New Jersey Coastal Plain. New Jersey Geological Survey. Trenton, New Jersey.

Edaw, Inc. 2008. Fort Monmouth Reuse and Redevelopment Plan, Final Plan. Prepared for Fort Monmouth Economic Revitalization Planning Authority. August 22.

Fort Monmouth (FTMM), 2008. Fort Monmouth Reuse and Redevelopment Plan, Final Plan. Prepared for: Fort Monmouth Economic Revitalization Planning Authority. Prepared by: EDAW, Inc/AECOM August, 2008.

FTMM, 2011. *Base-Wide Glauconitic Soil Sampling Report*. Directorate of Public Works. Fort Monmouth, New Jersey.

Groundwater & Environmental Services, Inc., (GES). 1999. *Remedial Action Work Plan Addendum, Building 699, Main Post Area, Fort Monmouth, New Jersey.* Prepared for the Fort Monmouth Directorate of Public Works. June 10.

Jablonski, L.A., 1968. Groundwater Resources of Monmouth County, New Jersey. USGS Special Report 23. USGS, Washington, DC.

Minard, J.P., 1969. Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey. U.S. Government Printing Office, Washington, DC.

New Jersey Department of Environmental Protection (NJDEP), 1997. Ecological Risk Assessment in NJDEP's Site Remediation Program: Conducting a Baseline Ecological Evaluation, Site Remediation News, Vol. 9, No. 1. January 1997.

NJDEP, 1998. Guidance for Sediment Quality Evaluations. November.

NJDEP. 2003. Ambient Levels of Metals in New Jersey Soils. Research Project Summary by Paul F. Sanders, PhD. May.

NJDEP, 2004. Re: Groundwater Analysis Reduction (Part II). Email. November 16, 2004.

NJDEP. 2010. Groundwater Quality Standards. New Jersey Administrative Code Title 7 Chapter 9C. July 22.

NJDEP, 2015. Approval, Re: November 26, 2014 Response to Comments – on the Final Baseline Ground Water Sampling Report (August 2013). February 5, 2015.

Shaw, 2012. Final Fort Monmouth Main Post and Charles Wood Area Baseline Ecological Evaluation Report, U. S. Army Garrison Fort Monmouth, Fort Monmouth, New Jersey U.S. Prepared for the Army Corps of Engineers, Baltimore District. Rev 1.

Stanford, S.D. 2000. *Surficial Geology of the Long Branch Quadrangle, Monmouth County, New Jersey*. Open-File Map OFM 38, Department of Environmental Protection, Division of Science, Research, and Technology, New Jersey Geological Survey.

Stanford, S.D. and P.J. Sugarman. 2010. *Bedrock Geology of the Long Branch Quadrangle*. Open-File Map OFM 78, Department of Environmental Protection, Land Use Management, New Jersey Geological Survey. U.S. Army Toxic and Hazardous Materials Agency (USATHAMA). 1980. Installation Assessment of Fort Monmouth, Report No. 171. U.S. Army Toxic and Hazardous Material Agency. May.

USATHAMA, 1988. Update of the Initial Installation Assessment of Fort Monmouth and Subinstallations: Charles Wood Area and Evans Area. Prepared by J.D. Bonds, J.K Sherwood, and K.A. Decker, Environmental Science and Engineering, Inc, Prepared for U.S. Army Communications-Electronics Command, Fort Monmouth, NJ, and U.S. Army Toxic and Hazardous Material Agency, Aberdeen Proving Ground, MD. June.

U.S. Army, 2012. U.S. Army, Fort Monmouth, New Jersey, M-12 Landfill (FTMM-12) - Remedial Investigation Report Addendum (2nd Quarter 2001 through 3rd Quarter 2010), U.S. Army Garrison Fort Monmouth, Main Post, Fort Monmouth, New Jersey. October.

USACE. 2001. Standard Scopes of Work for HTRW Risk Assessments. U.S. Army Corps of Engineers, Washington, DC. Pamphlet No. 200-1-15. December 15, 2001.

U.S. Environmental Protection Agency (USEPA). 1988. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final. Office of Emergency and Remedial Response. EPA /540/G-89/004. October.

USEPA. 1989. Risk Assessment Guidance for Superfund (RAGS), Volume 1 – Human Health Evaluation Manual (Part A). Interim final. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. Washington, DC. EPA/540/1-89/002.

USEPA 2003a. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. Technical Review Workgroup for Lead. EPA-540-R-03-001. January 2003.

USEPA 2003b. Assessing Intermittent or Variable Exposure at Lead Sites. Office of Solid Waste and Emergency Response. EPA-540-$-03-008.

USEPA. 2007. Framework for Metals Risk Assessment. Office of the Science Advisor, Risk Assessment Forum. EPA 120/R-07/001. March.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Unified Guidance, March 2009. EPA 530/R-09-007. Office of Resource Conservation and Recovery.

USEPA. 2013. Regional Screening Table Users Guide. May. Available at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/usersguide.htm.

U.S. Geological Survey (USGS). 1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, Professional Paper No. 270.

Versar, 2003a. Final Remedial Investigation Report, M-12 Landfill Site, U.S. Army Garrison, Fort Monmouth, New Jersey. September.

Versar, 2003b. Final Remedial Investigation Report for Near-Surface Soils, M-12 Landfill Site, U.S. Army Installation, Fort Monmouth, New Jersey. October 15.

Versar. 2004a. Final Remedial Investigation Report and Sediment Quality Evaluation Report, M-12/M-14 Landfill Site, U.S. Army Installation, Fort Monmouth, New Jersey. January 26.

Versar, 2004b. Classification Exception Area Information for Various Sites, M-12 Landfill Site, M-18 Landfill Site, Site 80/166, Site 108, Site 283, Site 812, Site 1122 and Site 2567. U.S. Army Installation Fort Monmouth, Fort Monmouth, New Jersey. July.

Weston (Roy F. Weston Inc.), 1993. Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey. Prepared for Directorate of Engineering and Housing, Fort Monmouth, New Jersey. December.

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

Zapecza, O. 1989. Hydrogeologic Framework of the New Jersey Coastal Plain. U.S. Geological Survey Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

TABLES

Table 1.1 Chronology of Events
Table 2.1 Well Construction Details
Table 2.2 Groundwater Sampling Events
Table 2.3 Surface Water Sampling Events
Table 4.1 Soil Sampling Summary Results – Comparison to NJDEP Standards
Table 4.2 Soil Sampling Summary Results – Comparison to USEPA Criteria
Table 4.3 Soil Sampling Summary Results – Supplemental Soil Samples
Table 4.4 Soil Sampling Summary of Exceedances
Table 4.5 Groundwater Sampling Summary Results – March 2008 to May 2011
Table 4.6 Groundwater Sampling Summary Results – August 2013
Table 4.7 Groundwater Sampling Summary of Exceedances
Table 4.8 Surface Water Sampling Summary Results
Table 4.9 Surface Water Sampling Summary of Exceedances
Table 4.10 Sediment PCB Results
Table 6.1 Risk Ratio Calculations for Potential Exposure to Soil by a Current/Future Outdoor Worker
Table 6.2 Risk Ratio Calculations for Potential Exposure to Soil by a Future Utility Worker
Table 6.3 Risk Ratio Calculations for Potential Exposure to Soil by a Future Recreational User

TABLE 1.1
CHRONOLOGY OF EVENTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

1918 – Fort Monmouth (FTMM) was established.
1980 – Installation Assessment of FTMM. Report 71. U.S. Army Toxic and Hazardous Materials Agency (USATHAMA). Conducted a records search to assess the environmental quality of FTMM (USATHAMA, 1980).
1980 – William F. Cosulich performed landfill study. Study identified Areas A-E as major areas on the base where landfill activities occurred. Samples were collected from Parkers Creek, Lafetra Brook, and Mill Brook (note: later reports refer to Lafetra Creek and Mill Creek). Area B refers to FTMM-12 and FTMM-14.
1984 – Water quality engineering study to determine if landfill leachate was forming and entering streams. Surface water samples were collected in Husky Brook between FTMM-12 and FTMM-14 (USATHAMA, 1988).
1986 – A New Jersey Pollutant Discharge Elimination System (NJPDES) permit was issued and quarterly surface water monitoring began at FTMM-12.
1988 – Update of the Initial Installation Assessment of FTMM and Subinstallations: Main Post, Charles Wood Area, and Evans Area. A survey was conducted to determine if any environmental/hazardous waste disposal conditions had changed since the Installation Assessment conducted in 1980. (USATHAMA, 1988).
1993 – An investigation of suspected hazardous waste sites at FTMM was conducted. FTMM-12 was identified, and quarterly surface water sample data were summarized. Weston performed an investigation of 45 sites identified by FTMM and the New Jersey Department of Environmental Protection (NJDEP). Additional remedial investigation (RI) was recommended for the FTMM-12 landfill (Weston, 1993).
1995 – A Site Investigation (SI) was conducted at FTMM. At FTMM-12, three groundwater monitoring wells were installed and sampled, and tidal monitoring was conducted. During the same time period, background soil, groundwater, surface water and sediment samples were collected at FTMM to determine naturally occurring concentrations of metals and a limited number of organic compounds (Weston, 1995). The groundwater and surface-water sampling results for the SI indicated that no compounds of concern were detected above NJDEP Groundwater Quality Criteria (GWQC) and surface-water criteria (Weston, 1995).
1996-2001 – A RI was performed to investigate soil, groundwater, and surface water conditions (Versar, 2003a). Quarterly groundwater monitoring was initiated in June 1997.
1998-1999 – A RI for Near-Surface Soils was conducted to demonstrate the compliance equivalence of the existing soil cover over the FTMM-12 landfill (Versar, 2003b).
1999 – Eight monitoring wells were installed.
2000 – A RI / Sediment Quality Evaluation was conducted to determine if surface water associated with FTMM-12 contained polychlorinated biphenyls (PCBs), as had been detected at other landfill sites (Versar, 2004).
2004 – A Classification Exception Area (CEA) report was prepared for FTMM-12 for arsenic and lead in groundwater (Versar, 2004b).
2005 - FTMM (Main Post [MP] and Charles Wood Area [CWA]) was selected for closure by the Base Realignment and Closure Commission
2008 – Landfill Boundary Delineation Study involved the advancement and photo-documentation of test pits and soil borings (U.S. Army, 2012).
2010 – An additional five wells were installed, adding to the monitoring system at FTMM-12 (U.S. Army, 2012). In addition, Shaw Environmental, Inc. (2012) conducted a Baseline Ecological Evaluation (BEE).
2011 – The base was officially closed on September 15, 2011.
2011 – A Classification Exception Area report was prepared for FTMM-12 for lead in groundwater (Brinkerhoff, 2011c).
2012 – A RI report addendum was prepared for FTMM-12 that presented sampling results obtained from 2001 to 2010, in addition to an aerial photograph analysis (U.S. Army, 2012). In addition, the NJDEP

approved “no additional ecological evaluation or assessment for the Main Post and Charles Wood Area” in an August 27, 2012 letter.
2015 – NJDEP agreed to discontinue groundwater sampling at FTMM-12 after the 2013 Baseline Sampling Event in a letter dated February 5, 2015 (NJDEP, 2015).

TABLE 2.1
WELL CONSTRUCTION DETAILS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Site	Well Permit #	Y Coord. (Northing)	X Coord. (Easting)	Installation Date	Depth (ft bgs)	Casing Length (ft)	Screen Length (ft)	Top of Casing (ft amsl)	Slot Size (inches)
M12MW11	E201010531	539010.213	620708.187	9/23/2010	20.00	5.00	15.00	11.59	0.01
M12MW12	E201010532	539446.768	620984.773	9/23/2010	20.00	5.00	15.00	8.13	0.01
M12MW13	E201010533	539408.034	621318.057	9/24/2010	20.00	5.00	15.00	10.58	0.01
M12MW14	E201007330	539133.332	621032.886	7/20/2010	20.00	5.00	15.00	14.10	0.01
M12MW15	E201007331	539266.819	621404.003	7/19/2010	20.00	5.00	15.00	12.49	0.01
M12MW16	29-32576	539498.292	621162.664	1/4/1995	14.50	4.50	10.00	7.04	0.01
M12MW17	29-32577	539365.294	620884.499	1/11/1995	14.50	4.50	10.00	6.69	0.01
M12MW18	29-32578	539599.924	621247.334	1/11/1995	14.50	4.50	10.00	5.53	0.01
M12MW19	29-41779	539156.543	620648.632	11/8/1999	18.00	3.00	15.00	**10.24**	0.01
M12MW20	29-41780	539162.910	620391.800	11/18/1999	18.00	3.00	15.00	**8.41**	0.01
M12MW21	29-41781	539113.568	620111.479	11/18/1999	18.00	3.00	15.00	**8.32**	0.01
M12MW22	29-41782	539069.196	619927.574	11/19/1999	18.00	3.00	15.00	**10.47**	0.01
M12MW23	29-41783	538964.114	620174.773	11/19/1999	18.00	3.00	15.00	**7.62**	0.01
M12MW24	29-41784	538958.169	620429.594	11/19/1999	18.00	3.00	15.00	13.17	0.01
M12MW25	E201008227	539160.985	620513.748	11/22/1999	18.00	3.00	15.00	11.56	0.01
M12MW26	29-41856	539161.843	620234.751	12/3/1999	18.00	3.00	15.00	**8.30**	0.01

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

TABLE 2.2
GROUNDWATER SAMPLING EVENTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

	Well ID															
Date	**M12MW11**	**M12MW12**	**M12MW13**	**M12MW14**	**M12MW15**	**M12MW16**	**M12MW17**	**M12MW18**	**M12MW19**	**M12MW20**	**M12MW21**	**M12MW22**	**M12MW23**	**M12MW24**	**M12MW25**	**M12MW26**
6/12/1997	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
7/2/1997	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
11/6/1997	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
2/20/1998	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
5/7/1998	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
8/6/1998	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
11/3/1998	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
1/29/1999	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
5/25/1999	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
7/23/1999	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
10/14/1999	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
2/25/2000	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
3/14/2000				--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
5/23/2000	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
8/18/2000	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
9/9/2000	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
9/12/2000	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
11/17/2000	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
1/26/2001	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
5/2/2001	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
9/22/2001	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
12/5/2001	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
2/14/2002	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
6/4/2002	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
8/22/2002	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
11/20/2002	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
3/19/2003	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
5/14/2003	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
7/25/2003	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
10/23/2003	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--
11/7/2003				--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
2/17/2004	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
5/10/2004	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
8/11/2004	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
11/16/2004	--	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
2/9/2005	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
5/5/2005	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
9/7/2005	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
11/15/2005	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
1/27/2006	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
4/20/2006	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
7/28/2006	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
11/3/2006	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
2/12/2007	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
5/9/2007	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
8/7/2007	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
11/30/2007	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
3/7/2008	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
5/15/2008	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
8/7/2008	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
10/27/2008	--	--	--	--	--	P,M	M	M	M	M	M	M	P,M	P,M	P,M	P,M
3/13/2009	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
6/8/2009	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
9/8/2009	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
11/18/2009	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
2/4/2010	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
6/2/2010	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
8/20/2010	--	--	--	V,M	V,M	--	--	--	--	--	--	--	--	--	--	--
9/8/2010	--	--	--	--	--	M	M	M	M	M	M	M	M	M	M	M
10/7/2010	V,M	V,M	V,M	--	--	--	--	--	--	--	--	--	--	--	--	--
10/22/2010	V,M	V,M	--	V,M	--	--	--	--	--	--	--	--	--	--	--	--
11/30/2010	--	M	M	--	--	M	M	M	M	M	M	--	--	M	--	M
12/7/2010	M	--	--	M	M	--	--	--	--	--	--	M	M	--	M	--
3/1/2011	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5/9/2011	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8/20/2013	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

Notes:
V = volatile organic compounds (VOCs) + tentatively-identified compounds (TICs), S = semivolatile organic compounds (SVOCs) + TICs, M = metals,
P = pesticides and polychlorinated biphenyls (PCBs), dash (--) = not sampled, L = lead only
NJDEP agreed in the February 15, 2015 letter (provided in **Appendix A**) to discontinue long-term monitoring of the groundwater at FTMM-12 following the 2013 Baseline Sampling Event.

TABLE 2.3
SURFACE WATER SAMPLING EVENTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

	Location			
Date	**SS-9**	**SS-11**	**SS-12**	**SS-19**
Oct-96	V	V	V	--
Nov-96	V	V	V	V
Dec-96	V	V	V	V
Jan-97	V	V	V	V
Feb-97	V	V	V	V
Mar-97	V	V	V	V
Apr-97	V	V	V	V
Jul-97	V	V	V	V
Oct-97	V	V	V	V
Feb-98	V	V	V	V
Apr-98	V	V	V	V
Aug-98	V	V	V	V
Nov-98	V	V	V	V
Feb-99	V	V	V	V
Jun-99	V	V	V	V
Sep-99	V	V	V	V
Dec-99	V	V	V	V
Mar-00	V	V	V	V
Jun-00	V,P	V,P	V	V,P
Aug-00	V,P	V,P	V	V,P
Nov-00	V,P	V,P	V	V,P
Feb-01	V,P	V,P	V	V,P
May-01	V,P	V,P	V	V,P
Sep-01	V,P	V,P	V	V,P
Nov-01	V,P	V,P	V	V,P
Feb-02	V,P	V,P	V	V,P
Jun-02	V,P	V,P	V	V,P
Sep-02	V,P	V,P	V	V,P
Nov-02	V,P	V,P	V	V,P
Mar-03	V,P	V,P	V	V,P
May-03	V,P	V,P	V	V,P
Sep-03	V,P	V,P	V	V,P
Nov-03	V,P	V,P	V	V,P
Mar-04	V,P	V,P	V	V,P
Jun-04	V,P	V,P	V	V,P
Aug-04	V,P	V,P	V	V,P
Nov-04	V	V,P	V	V
Mar-05	V	V,P	V	V
Jun-05	V,M	V,M,P	V	V,M
Sep-05	V,M	V,M,P	V	V,M
Dec-05	V,M	V,M,P	V	V,M
Feb-06	V,M	V,M,P	V	V,M
May-06	V,M	V,M,P	V	V,M
Sep-06	V,M	V,M,P	V	V,M
Dec-06	V,M	V,M,P	V	V,M
Mar-07	V,M	V,M	V	V,M
Jun-07	V,M	V,M	V	V,M
Sep-07	V,M	V,M	V	V,M
Dec-07	V,M	V,M	V	V,M
Mar-08	V,M	V,M	V	V,M
Jun-08	V,M	V,M	V	V,M
Sep-08	V,M	V,M	V	V,M
Dec-08	V,M	V,M	V	V,M
Mar-09	V,M	V,M	V	V,M
Jun-09	V,M	V,M	V	V,M
Sep-09	V,M	V,M	V	V,M
Dec-09	V,M	V,M	V	V,M
Mar-10	V,M	V,M	V	V,M
Jun-10	V,M	V,M	V	V,M
Sep-10	V,M	V,M	V	V,M

Notes:

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

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Sample Date					03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/20/98	03/20/98	03/20/98
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					3420.02	3420.04	3420.06	3420.08	3420.10	3420.12	3420.14	3420.16	3420.18	3424.03	3424.05	3424.07
Methylene Chloride	34000	97,000	10	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280
Benzene	2,000	5,000	5	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280
Toluene	6.30E+06	9.10E+07	7,000	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280
Acetone	7.00E+07	NLE	19,000	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560
Vinyl Chloride	700	2,000	5	--	< 810	< 1300	< 940	< 1200	< 2000	< 870	< 1200	< 920	< 920	< 1100	< 680	< 830
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 810	< 1300	< 940	< 1200	< 2000	< 870	< 1200	< 920	< 920	< 1100	< 680	< 830
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	**4100**	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3420.01	3420.03	3420.05	3420.07	3420.09	3420.11	3420.13	3420.15	3420.17	3424.02	3424.04	3424.06
Naphthalene	6,000	17,000	25,000	--	< 130	< 160	< 150	< 300	< 140	< 300	**140** J	**1200** D	**110** J	< 130	**280**	< 140
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 100	< 120	< 110	< 230	< 110	< 230	< 110	< 230	< 120	< 99	< 100	< 100
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 150	**83** J	< 170	< 340	< 160	< 340	< 77	**1100** D	**74** J	< 150	**210**	< 150
Acenaphthylene	NLE	3.00E+08	NLE	--	< 110	**87** J	< 110	< 240	< 110	< 240	< 210	**320** D	**81** J	< 100	< 110	< 110
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 96	< 120	< 110	< 220	< 100	< 220	< 110	**610** D	**93** J	< 95	< 98	**73** J
Dibenzofuran	NLE	NLE	NLE	--	< 100	< 120	< 120	< 230	< 110	< 230	< 110	**560** D	< 120	< 100	< 100	< 110
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 110	< 130	< 130	< 250	< 120	< 250	< 120	< 250	< 130	< 110	< 110	< 110
Fluorene	2.30E+06	2.40E+07	170,000	--	< 100	< 130	**72** J	< 240	< 110	< 240	< 96	**1800** D	**98** J	< 100	< 110	**58** J
Phenanthrene	NLE	3.00E+08	NLE	--	**200**	**460**	**650**	< 240	**140**	**190** JD	**850**	**9000** D	**1100**	**150**	**120**	**540**
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 110	< 130	**94** J	< 240	< 110	< 240	**120** J	**1200** D	**190**	< 100	< 110	**110** J
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**4300** B	**6500** B	**2300** B	**7300** BD	**3400** B	**11000** BD	**3000** B	**1900** BD	**500** JB	**170** JB	**340** JB	**390** JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**420**	**460**	**730**	< 240	**210**	**320** D	**990**	**6400** D	**1600**	**160**	**96** J	**700**
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**300**	**500**	**750**	< 280	**170**	**290** D	**1000**	**5900** D	**1100**	**160**	**79** J	**430**
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 140	< 170	< 160	< 310	< 150	< 310	< 150	< 310	< 170	< 140	< 140	< 140
Benzo(a)anthracene	600	2,000	800	--	**190**	**270**	**390**	< 240	**110** J	**210** JD	**470**	**3000** D	**640**	**130**	< 110	**220**
Chrysene	62,000	230,000	80,000	--	**280**	**500**	**800**	< 310	**180**	**340** D	**1100**	**4300** D	**1100**	**260**	**95** J	**380**
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**170** B	**200** B	**88** JB	< 340	**130** JB	**140** JBD	**88** JB	**140** JBD	**150** JB	**98** JB	**67** JB	**90** JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**100** J	**170**	**320**	< 300	**66** J	**210** JD	**450**	**1500** D	**610**	**160**	< 140	**190**
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**200**	**280**	**290**	< 230	**140**	**210** JD	**380**	**2800** D	**650**	**300**	< 100	**190**
Benzo(a)pyrene	200	200	200	--	**210**	**290**	**460**	< 230	**120**	**230** JD	**560**	**2600** D	**740**	**230**	< 100	**250**
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	**120**	**190**	**250**	< 250	< 120	**130** JD	**310**	**1200** D	**370**	**160**	< 110	< 120
Dibenz(a,h)anthracene	200	200	800	--	< 130	< 160	< 150	< 300	< 140	< 290	< 150	< 300	< 160	< 130	< 130	< 140
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	**95** J	**190**	**250**	< 300	**78** J	**130** JD	**290**	**1300** D	**340**	**180**	< 130	< 140
TICs	NLE	NLE	NLE	--	**4170**	**1440**	**11410**	**3500**	**3170**	**10000**	**15500**	**20300**	**8560**	**3510**	**4760**	**5840**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.009**	**0.069**	**0.074**	**0.014**	**0.028**	**0.07**	**0.075**	**0.541**	**0.307**	**0.265**	**0.042**	**0.065**
Dieldrin	0.04	0.2	0.003	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011
4,4'-DDD	3	13	4	--	**0.004**	**0.09**	**0.115**	**0.008**	**0.055**	**0.088**	**0.311**	**0.736**	**0.364**	**0.255**	**0.028**	**0.052**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011
4,4'-DDT	2	8	11	--	**0.035**	**0.223**	**0.202**	**0.081**	**0.084**	**0.306**	**0.113**	**0.5**	**0.271**	**0.203**	**0.078**	**0.154**
gamma-Chlordane	0.2	1	0.05	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011
alpha-Chlordane	0.2	1	0.05	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Sample Date					03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/20/98	03/20/98	03/20/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**5642**	**6919**	**12820**	**9691**	**5612**	**6598**	**8075**	**5616**	**12110**	**4508**	**10700**	**5997**
Antimony	31	450	6	ND	**0.71**	**1.051**	**2.367**	**1.731**	**1.483**	**1.046**	**1.001**	**1.034**	**3.401**	**0.58**	**2.641**	**1.738**
Arsenic	19	19	19	22.9	**5.558**	**10.87**	**12.76**	**10.61**	**11.11**	**9.919**	**17.43**	**6.688**	**38.02**	**7.287**	**12.19**	**7.383**
Barium	16,000	59,000	2,100	32.3	**26.94**	**35.36**	**49.88**	**60.55**	**85.09**	**44.48**	**74.22**	**289.3**	**60.36**	**54.95**	**42.85**	**50.36**
Beryllium	16	140	0.7	2	**0.535**	**0.461**	**1.18**	**0.555**	**0.664**	**0.4763**	**0.5101**	**0.6405**	**1.304**	**0.7108**	**1.462**	**0.7754**
Cadmium	78	78	2	ND	**1.307**	< 0.064	< 0.062	< 0.061	< 0.067	< 0.059	< 0.066	< 0.064	< 0.061	< 0.049	< 0.054	< 0.052
Calcium	NLE	NLE	NLE	921	**172.2**	**251.3**	**320.3**	**383.6**	**488.9**	**338.2**	**223.3**	**453**	**594.4**	**376.9**	**333.2**	**205.5**
Chromium	NLE	NLE	NLE	269	**39.64**	**64.16**	**135.6**	**80.22**	**75.81**	**61.98**	**83.75**	**42.5**	**133.9**	**37.92**	**168.8**	**90.86**
Cobalt	1,600	590	90	2.5	**1.599**	**1.463**	**1.435**	**1.243**	**1.208**	**1.372**	**1.415**	**1.515**	**1.896**	**5.776**	**0.7841**	**0.5523**
Copper	3,100	45,000	11,000	8	**6.895**	**40.21**	**18.34**	**45.3**	**50.19**	**46.45**	**45.52**	**197.1**	**141.7**	**112**	**12.21**	**13.34**
Iron	NLE	NLE	NLE	55,800	**14940**	**18570**	**37620**	**45290**	**23110**	**19700**	**27560**	**13090**	**41770**	**13640**	**31460**	**16200**
Lead	400	800	90	19.5	**52.03**	**53.54**	**65.37**	**33.97**	**32.95**	**67.67**	**77.75**	**84.35**	**123.5**	**95.11**	**11.72**	**16.93**
Magnesium	NLE	NLE	NLE	7,230	**1257**	**1477**	**4207**	**2117**	**2073**	**1905**	**1914**	**1314**	**3514**	**745.9**	**4609**	**2133**
Manganese	11,000	5,900	65	90.7	**51.87**	**17.21**	**21.31**	**25.55**	**16.93**	**22.75**	**22.02**	**35.4**	**32.09**	**24.13**	**10.6**	**9.861**
Mercury	23	65	0.1	ND	**29.909**	**0.39**	**0.21**	**0.051**	**0.05**	**0.118**	**0.234**	**0.012**	**1.461**	**0.501**	**0.061**	**0.085**
Nickel	1,600	23,000	48	8.4	**4.266**	**5.328**	**6.129**	**5.36**	**4.669**	**5.057**	**5.464**	**4.738**	**8.985**	**13.03**	**4.273**	**2.672**
Potassium	NLE	NLE	NLE	15,400	**3509**	**3656**	**8666**	**5885**	**6901**	**5405**	**5755**	**4024**	**7195**	**1989**	**10140**	**4544**
Selenium	390	5,700	11	1.9	< 0.293	**0.885**	< 0.371	**0.429**	**1.159**	**0.709**	**1.033**	**0.394**	**1.374**	**0.589**	**0.505**	< 0.314
Silver	390	5,700	1	1.1	< 0.293	**1.571**	**1.699**	< 0.364	< 0.401	< 0.356	**0.581**	**1.013**	**1.493**	**0.548**	< 0.326	< 0.314
Sodium	NLE	NLE	NLE	51.6	**24.61**	**207.6**	**91.26**	**574.1**	**411.4**	**376.3**	**646.7**	**229.5**	**139**	**196.5**	**124.1**	**71.27**
Thallium	5	79	3	ND	< 0.293	< 0.385	< 0.371	< 0.364	< 0.401	< 0.356	< 0.394	< 0.381	< 0.365	< 0.293	< 0.326	< 0.314
Vanadium	78	1,100	NA	94.1	**22.45**	**32.82**	**65.1**	**58.32**	**29.18**	**31.03**	**40.81**	**30.22**	**54.67**	**21.2**	**48**	**16.35**
Zinc	23,000	110,000	930	81.4	**48.29**	**29.07**	**51.51**	**42.63**	**24.21**	**36.88**	**36.02**	**49.93**	**112.4**	**416.3**	**48.45**	**34.98**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = not analyzed
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
DUP = field duplicate sample
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21	B-22	B-23
Sample Date					03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					3424.09	3424.11	3424.13	3424.15	3424.17	3424.19	3424.21	3425.03	3425.25	3425.05	3425.07	3425.09
Methylene Chloride	34000	97,000	10	--	< 680	< 530	< 1000	< 620	< 830	< 570	< 620	< 290	< 580	< 890	< 620	< 540
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 340	< 260	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270
Benzene	2,000	5,000	5	--	< 340	< 260	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270
Toluene	6.30E+06	9.10E+07	7,000	--	< 340	< 260	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270
Acetone	7.00E+07	NLE	19,000	--	< 680	< 530	< 1000	< 620	< 830	< 570	< 620	< 290	< 580	< 890	< 620	< 540
Vinyl Chloride	700	2,000	5	--	< 1000	< 790	< 1600	< 930	< 1200	< 860	< 930	< 860	< 860	< 1300	< 930	< 820
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 680	< 530	< 1000	< 620	< 830	< 570	< 620	< 570	< 580	< 890	< 620	< 540
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 1000	< 790	< 1600	< 930	< 1200	< 860	< 930	< 860	< 860	< 1300	< 930	< 820
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 680	< 530	< 1000	< 620	< 830	< 570	< 620	< 570	< 580	< 890	< 620	< 540
TICs	NLE	NLE	NLE	--	ND	ND	**7800**	ND	**6600**	ND	ND	**32000**	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3424.08	3424.10	3424.12	3424.14	3424.16	3424.18	3424.20	3425.02	3425.24	3425.04	3425.06	3425.08
Naphthalene	6,000	17,000	25,000	--	< 140	< 130	**51** J	< 160	< 150	< 160	< 150	< 130	< 140	< 1400	< 140	< 150
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 100	< 100	**56** J	< 120	< 110	< 120	< 110	< 98	< 100	< 1000	< 100	< 110
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 150	< 150	**60** J	< 180	< 170	< 170	< 170	< 150	< 150	< 1500	< 150	< 170
Acenaphthylene	NLE	3.00E+08	NLE	--	< 110	< 100	**18** J	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	< 120
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 99	< 95	< 110	< 110	< 110	< 110	< 110	< 94	< 98	< 990	< 98	< 110
Dibenzofuran	NLE	NLE	NLE	--	< 110	< 100	**21** J	< 120	< 120	< 120	< 110	< 100	< 100	< 1100	< 100	< 120
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 110	< 110	**18** J	< 130	< 130	< 130	< 130	< 110	**84** J	< 1200	< 110	< 160
Fluorene	2.30E+06	2.40E+07	170,000	--	< 110	< 100	< 120	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	**68** J
Phenanthrene	NLE	3.00E+08	NLE	--	< 110	**57** J	**120**	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	**120**	**850**
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 110	< 100	**17** J	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	**120**
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**370** JB	**320** JB	**610** B	**450** JB	**510** JB	**560** B	**330** JB	**340** JB	**1200** B	**1100** JB	**300** JB	**140** JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	< 110	**110**	**140**	**84** J	< 120	< 120	< 120	**72** J	< 110	< 1100	**170**	**1200**
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	< 130	**80** J	**140**	**73** J	< 140	**85** J	**64** J	**80** J	< 130	**750** J	**200**	**1200**
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 140	< 140	< 150	< 160	**65** J	< 160	< 150	< 130	< 140	< 1400	< 140	< 160
Benzo(a)anthracene	600	2,000	800	--	< 110	< 110	**63** J	< 130	< 120	< 130	< 120	< 110	< 110	< 1100	**88** J	**540**
Chrysene	62,000	230,000	80,000	--	< 140	**96** J	**160**	< 160	**74** J	**69** J	< 150	**68** J	< 140	**740** J	**160**	**950**
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**85** JB	**73** JB	**230** B	**260** B	**350** B	**220** B	**310** B	**390** B	**160** B	**770** JB	**110** JB	**190** B
Benzo(b)fluoranthene	600	2,000	2,000	--	< 140	< 130	**160**	< 160	< 150	< 160	< 150	< 130	< 140	< 1400	**60** J	**490**
Benzo(k)fluoranthene	6,000	23,000	25,000	--	< 100	< 65	**180**	< 120	**62** J	< 120	< 110	**57** J	< 100	< 1000	**100** J	**420**
Benzo(a)pyrene	200	200	200	--	< 110	< 100	**72** J	< 120	< 120	< 120	< 120	< 100	< 110	**790** J	**80** J	**550**
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 120	< 110	< 120	< 130	< 130	< 130	< 130	< 110	< 110	< 1200	< 110	**330**
Dibenz(a,h)anthracene	200	200	800	--	< 140	< 130	< 140	< 150	< 150	< 150	< 150	< 130	< 130	< 1400	< 130	< 150
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 140	< 130	< 140	< 150	< 150	< 150	< 150	< 130	< 130	< 1400	**63** J	**340**
TICs	NLE	NLE	NLE	--	**8330**	**7830**	**4800**	**2430**	**3750**	**3370**	**4860**	**4810**	**7320**	ND	**7390**	**6330**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.35**	**0.044**	**0.559**	**0.039**	**0.002**	**0.033**	**0.048**	**0.098**	**0.032**	**0.232**	**0.317**	**0.109**
Dieldrin	0.04	0.2	0.003	--	< 0.0059	< 0.0010	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012
4,4'-DDD	3	13	4	--	**0.397**	**0.024**	**0.139**	**0.012**	**0.003**	**0.044**	**0.015**	**0.072**	**0.05**	**0.207**	**0.158**	**0.113**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0059	< 0.0010	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012
4,4'-DDT	2	8	11	--	**0.504**	**0.067**	**0.481**	**0.035**	**0.006**	**0.011**	**0.036**	**0.194**	**0.008**	**0.116**	**0.326**	**0.304**
gamma-Chlordane	0.2	1	0.05	--	< 0.0059	< 0.0010	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012
alpha-Chlordane	0.2	1	0.05	--	< 0.0059	< 0.0010	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21	B-22	B-23
Sample Date					03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**7942**	**2469**	**2620**	**4328**	**5798**	**1336**	**3624**	**4607**	**5021**	**3855**	**5241**	**8348**
Antimony	31	450	6	ND	**2.273**	**0.467**	**0.345**	**1.02**	**1.526**	**0.319**	**1.34**	**0.947**	**0.717**	**1.281**	**0.458**	**0.653**
Arsenic	19	19	19	22.9	**13.66**	**1.655**	**2.987**	**3.42**	**7.245**	**1.479**	**6.735**	**5.143**	**4.409**	**4.345**	**4.688**	**5.923**
Barium	16,000	59,000	2,100	32.3	**65.44**	**10.62**	**28.31**	**72.64**	**138.7**	**59.2**	**71.49**	**13.94**	**19.65**	**29.9**	**15.92**	**42.62**
Beryllium	16	140	0.7	2	**0.9925**	**0.2271**	**0.2784**	**0.8532**	**0.512**	**0.1552**	**1.148**	**0.492**	**0.3926**	**0.3599**	**0.4215**	**0.8002**
Cadmium	78	78	2	ND	< 0.057	**0.0659**	< 0.063	**0.6784**	**0.1049**	**0.1673**	**0.7389**	< 0.043	**0.1791**	**0.9103**	**1.677**	**0.549**
Calcium	NLE	NLE	NLE	921	**360**	**81.68**	**650.6**	**2110**	**3422**	**1379**	**1033**	**494.4**	**421.1**	**320.3**	**3112**	**556**
Chromium	NLE	NLE	NLE	269	**124.6**	**24.03**	**7.636**	**31.38**	**7.333**	**2.01**	**32.18**	**60.39**	**39.15**	**59.63**	**12.92**	**41.83**
Cobalt	1,600	590	90	2.5	**0.8438**	**0.3294**	**1.586**	**3.902**	**2.603**	**1.813**	**6.331**	**0.368**	**1.202**	**1.067**	**2.251**	**4.349**
Copper	3,100	45,000	11,000	8	**6.003**	**4.121**	**81.92**	**31.96**	**22.16**	**12.58**	**182**	**7.432**	**10.68**	**502.4**	**35.26**	**80.43**
Iron	NLE	NLE	NLE	55,800	**21030**	**4887**	**4008**	**6384**	**13410**	**1710**	**11100**	**11940**	**9427**	**12300**	**6758**	**11120**
Lead	400	800	90	19.5	**3.55**	**4.462**	**21.63**	**75.93**	**83.68**	**4.709**	**149.2**	**9.944**	**18.19**	**404.4**	**22.43**	**149**
Magnesium	NLE	NLE	NLE	7,230	**2946**	**456.8**	**286.1**	**326.9**	**311.6**	**165.3**	**832.9**	**1600**	**1095**	**654**	**322.6**	**1102**
Manganese	11,000	5,900	65	90.7	**7.919**	**5.807**	**13.92**	**29.19**	**36.44**	**10.51**	**37.97**	**5.166**	**23.91**	**36.35**	**126.3**	**64.37**
Mercury	23	65	0.1	ND	**0.015**	**0.021**	**0.045**	**0.258**	**0.021**	**0.017**	**0.138**	**0.058**	**0.297**	**0.493**	**0.683**	**0.092**
Nickel	1,600	23,000	48	8.4	**3.231**	**1.82**	**4.973**	**11.59**	**10.22**	**5.396**	**17.57**	**2.437**	**4.139**	**11.76**	**5.666**	**16.19**
Potassium	NLE	NLE	NLE	15,400	**6153**	**1171**	**530.5**	**595**	**464.3**	**176.6**	**1968**	**2931**	**3145**	**1611**	**621.1**	**3165**
Selenium	390	5,700	11	1.9	< 0.345	< 0.315	**0.383**	**0.528**	**0.453**	**0.521**	**0.818**	< 0.256	< 0.333	< 0.386	< 0.385	**0.952**
Silver	390	5,700	1	1.1	< 0.345	< 0.315	< 0.377	< 0.357	< 0.341	< 0.400	< 0.374	< 0.256	< 0.333	**1.18**	< 0.385	< 0.394
Sodium	NLE	NLE	NLE	51.6	**72.53**	**30.94**	**136.2**	**228.9**	**249.3**	**170.6**	**141**	**36.77**	**73.27**	**54.23**	**110.2**	**25.22**
Thallium	5	79	3	ND	< 0.345	< 0.315	< 0.377	< 0.357	< 0.341	< 0.400	< 0.374	**0.502**	< 0.333	< 0.386	< 0.385	< 0.394
Vanadium	78	1,100	NA	94.1	**13.61**	**12.98**	**12.17**	**14.33**	**16.03**	**7.215**	**18.92**	**22.07**	**21.36**	**16.46**	**11.38**	**29.96**
Zinc	23,000	110,000	930	81.4	**54.28**	**12.55**	**15.35**	**55.18**	**70.97**	**59.54**	**619.7**	**35.67**	**176.7**	**753.8**	**910.2**	**195.6**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = not analyzed
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
DUP = field duplicate sample
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-24		B-25		B-26		B-27		B-28		B-29		B-30		B-31		B-32		B-33		B-34		B-35	
Sample Date					03/23/98		03/23/98		03/23/98		03/23/98		03/23/98		03/23/98		03/23/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					3425.11		3425.13		3425.15		3425.17		3425.19		3425.21		3425.23		3428.03		3428.05		3428.07		3428.09		3428.11	
Methylene Chloride	34000	97,000	10	--	< 650		< 540		< 620		< 650		< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 330		< 270		< 310		< 320		< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280	
Benzene	2,000	5,000	5	--	< 330		< 270		< 310		< 320		< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280	
Toluene	6.30E+06	9.10E+07	7,000	--	< 330		< 270		< 310		< 320		< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280	
Acetone	7.00E+07	NLE	19,000	--	< 650		< 540		< 620		< 650		< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560	
Vinyl Chloride	700	2,000	5	--	< 980		< 810		< 920		< 970		< 810		< 890		< 870		< 850		< 900		< 830		< 810		< 830	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 650		< 540		< 620		< 650		< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 980		< 810		< 920		< 970		< 810		< 890		< 870		< 850		< 900		< 830		< 810		< 830	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 650		< 540		< 620		< 650		< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3425.10		3425.12		3425.14		3425.16		3425.18		3425.20		3425.22		3428.02		3428.04		3428.06		3428.08		3428.10	
Naphthalene	6,000	17,000	25,000	--	< 140		**82**	J	< 140		< 140		< 140		< 150		< 140		< 260		< 290		< 300		< 290		< 280	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 110		< 98		< 100		< 110		< 100		< 110		< 110		< 200		< 220		< 220		< 220		< 210	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 160		**97**	J	< 150		< 160		< 150		< 170		< 160		< 290		< 320		< 330		< 330		< 320	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 110		**480**		< 110		< 110		< 110		< 120		< 110		< 210		**320**		< 280		< 230		< 220	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 100		< 94		< 99		< 100		< 98		< 110		< 100		<190		< 210		< 210		< 210		< 200	
Dibenzofuran	NLE	NLE	NLE	--	< 110		< 100		< 110		< 110		< 100		< 110		< 110		< 200		< 220		< 230		< 220		< 220	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 120		< 110		< 110		< 120		< 110		< 120		< 120		< 220		**120**	J	< 250		< 240		< 240	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 110		**250**		< 110		< 110		< 110		< 120		< 110		< 210		< 230		< 230		< 230		< 220	
Phenanthrene	NLE	3.00E+08	NLE	--	**80**	J	**2100**		**70**	J	< 110		< 110		< 120		**150**		**120**	J	**700**		**580**		**800**		**170**	J
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 110		**540**		< 110		< 110		< 110		< 120		< 110		< 210		**170**	J	**160**	J	**190**	J	< 220	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**130**	JB	**99**	JB	**120**	JB	**140**	JB	**130**	JB	**140**	JB	**1600**	B	**1400**	B	**4300**	B	**790**	JB	**1200**	B	**1600**	B
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**120**		**3700**		**67**	J	**64**	J	< 110		< 120		**210**		**170**	J	**720**		**800**		**1100**		**320**	
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**150**		**3800**		**96**	J	**68**	J	< 130		< 140		**240**		**220**	J	**1300**		**1500**		**1100**		**440**	
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 150		< 130		< 140		< 140		< 140		< 150		< 150		< 270		< 300		< 300		< 300		< 290	
Benzo(a)anthracene	600	2,000	800	--	**65**	J	**1900**		< 110		< 110		< 110		< 120		**97**	J	< 210		**690**		**700**		**450**		**200**	J
Chrysene	62,000	230,000	80,000	--	**150**	J	**3200**		**99**	J	**66**	J	< 140		< 150		**330**		**230**	J	**1300**		**1400**		**910**		**450**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**200**	B	**55**	JB	**89**	JB	**93**	JB	**110**	JB	**150**	JB	**110**	JB	**260**	JB	**630**	B	**360**	B	**300**	JB	**510**	B
Benzo(b)fluoranthene	600	2,000	2,000	--	**68**	J	**1100**		< 140		< 140		< 140		< 150		**91**	J	< 260		**470**		**380**		**340**		**150**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**81**	J	**1900**		< 100		< 100		< 100		< 110		**160**		**180**	J	**580**		**750**		**590**		**250**	
Benzo(a)pyrene	200	200	200	--	**60**	J	**1900**		< 110		< 110		< 100		< 110		**110**	J	< 200		**830**		**840**		**510**		**250**	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 120		**890**		< 120		< 120		< 110		< 130		**75**	J	< 220		**390**		**470**		**320**		**160**	J
Dibenz(a,h)anthracene	200	200	800	--	< 140		**320**		< 140		< 140		< 130		< 150		< 140		< 260		< 280		< 290		< 290		< 280	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 140		**1000**		< 140		< 140		< 130		< 150		**85**	J	< 260		**550**		**600**		**350**		< 280	
TICs	NLE	NLE	NLE	--	**4750**		**5800**		**1200**		**2980**		**6820**		**4790**		**15440**		**14600**		**35800**		**10000**		**13220**		**14960**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	**0.066**		**0.041**		**0.171**		**0.044**		< 0.0009		< 0.0009		**0.273**		**0.136**		**0.107**		**0.141**		**0.066**		**0.166**	
Dieldrin	0.04	0.2	0.003	--	< 0.0012		< 0.0011		< 0.0011		< 0.0012		< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013	
4,4'-DDD	3	13	4	--	**0.063**		**0.037**		**0.066**		**0.113**		< 0.0014		< 0.0014		**0.051**		**0.039**		**0.019**		**0.03**		**0.026**		**0.076**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0012		**0.043**		< 0.0011		< 0.0012		< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013	
4,4'-DDT	2	8	11	--	**0.045**		**0.043**		**0.309**		**0.057**		< 0.0026		< 0.0025		**0.231**		**0.208**		**0.188**		**0.146**		**0.122**		**0.299**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0012		< 0.0011		< 0.0011		< 0.0012		< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013	
alpha-Chlordane	0.2	1	0.05	--	< 0.0012		< 0.0011		< 0.0011		< 0.0012		< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-24	B-25	B-26	B-27	B-28	B-29	B-30	B-31	B-32	B-33	B-34	B-35
Sample Date					03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**3407**	**4485**	**2628**	**8444**	**8185**	**7810**	**5413**	**4364**	**5564**	**11890**	**8151**	**6575**
Antimony	31	450	6	ND	**0.458**	**0.787**	**0.371**	**2.104**	**1.951**	**1.98**	**1.448**	**1.06**	**0.687**	**2.65**	**2.078**	**1.272**
Arsenic	19	19	19	22.9	**2.446**	**6.348**	**1.722**	**21.54**	**19.35**	**24.33**	**14.68**	**11.32**	**8.863**	**14.73**	**11.1**	**11.02**
Barium	16,000	59,000	2,100	32.3	**18.26**	**31.35**	**7.015**	**14.1**	**13.03**	**9.416**	**70.55**	**61.24**	**46.39**	**45.66**	**48.79**	**40.17**
Beryllium	16	140	0.7	2	**0.2194**	**0.3329**	**0.1691**	**0.9307**	**0.9068**	**0.9298**	**0.6609**	**0.5325**	**0.5311**	**1.329**	**0.8959**	**0.7196**
Cadmium	78	78	2	ND	**0.2835**	**1.219**	< 0.060	< 0.064	< 0.049	< 0.065	**0.1488**	**0.1458**	**0.2347**	**0.1126**	**0.1174**	**0.3434**
Calcium	NLE	NLE	NLE	921	**445.1**	**530.7**	**273.4**	**1138**	**2421**	**832.5**	**1231**	**1396**	**1394**	**1671**	**2981**	**960.9**
Chromium	NLE	NLE	NLE	269	**19.37**	**31.53**	**17.93**	**125.1**	**131.8**	**123.9**	**67.89**	**54.13**	**43.96**	**142.8**	**127.6**	**72.95**
Cobalt	1,600	590	90	2.5	**0.5124**	**0.9139**	**0.6978**	**0.7505**	**0.6415**	**0.8132**	**1.317**	**1.087**	**1.799**	**1.703**	**1.563**	**1.172**
Copper	3,100	45,000	11,000	8	**7.057**	**13.97**	**5.848**	**21.01**	**5.498**	**5.66**	**47.89**	**20.64**	**35.33**	**25.16**	**89.97**	**23.25**
Iron	NLE	NLE	NLE	55,800	**4743**	**8822**	**4258**	**20310**	**21280**	**18960**	**16300**	**13620**	**12970**	**31800**	**20940**	**18550**
Lead	400	800	90	19.5	**13.96**	**33.86**	**6.379**	**18.9**	**4.03**	**4.268**	**56.31**	**32.83**	**45.47**	**45.28**	**37.17**	**33.38**
Magnesium	NLE	NLE	NLE	7,230	**555.1**	**689.6**	**440.2**	**2896**	**3065**	**3019**	**1883**	**1631**	**1474**	**4675**	**2802**	**2070**
Manganese	11,000	5,900	65	90.7	**14.35**	**9.481**	**10.97**	**20.8**	**17.65**	**14.72**	**46.26**	**37.65**	**64.16**	**55.22**	**34.04**	**25.04**
Mercury	23	65	0.1	ND	**0.031**	**0.16**	**0.02**	**0.013**	**0.013**	< 0.013	**0.108**	**0.076**	**0.073**	**0.102**	**0.077**	**0.082**
Nickel	1,600	23,000	48	8.4	**2.344**	**4.075**	**1.512**	**3.944**	**3.926**	**3.968**	**4.6**	**3.909**	**7.046**	**7.272**	**5.997**	**5.129**
Potassium	NLE	NLE	NLE	15,400	**1315**	**1472**	**711.2**	**5945**	**6312**	**6000**	**5250**	**4738**	**3611**	**9811**	**5084**	**6139**
Selenium	390	5,700	11	1.9	< 0.305	**0.341**	< 0.362	< 0.387	< 0.296	< 0.390	< 0.379	**0.45**	**0.683**	< 0.366	< 0.373	**0.49**
Silver	390	5,700	1	1.1	< 0.305	< 0.317	< 0.362	< 0.387	< 0.296	< 0.390	< 0.379	< 0.393	< 0.386	< 0.366	< 0.373	< 0.324
Sodium	NLE	NLE	NLE	51.6	**61.06**	**50.03**	**24.8**	**86.46**	**65.74**	**65.74**	**135**	**81.76**	**174**	**158.7**	**147.4**	**153.7**
Thallium	5	79	3	ND	< 0.305	< 0.317	< 0.362	< 0.387	< 0.296	< 0.390	< 0.379	< 0.393	< 0.386	< 0.366	< 0.373	< 0.324
Vanadium	78	1,100	NA	94.1	**13.33**	**22.48**	**11.77**	**16.77**	**19.77**	**16.38**	**18.24**	**16.48**	**21.78**	**47.65**	**33.17**	**24.74**
Zinc	23,000	110,000	930	81.4	**38.34**	**120.4**	**26.73**	**45.95**	**27.66**	**28.3**	**65.28**	**54.9**	**57.21**	**79.91**	**59.09**	**58.7**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-36		B-37		B-38		B-39		B-40		B-40 Dup		B-41		B-42		B-43		B-44		B-45		B-46	
Sample Date					03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					3428.13		3428.15		3428.17		3428.19		3428.21		3428.25		3428.23		3432.03		3432.05		3432.07		3432.09		3432.11	
Methylene Chloride	34000	97,000	10	--	< 510		< 550		< 540		< 790		< 550		< 550		< 580		< 590		< 610		< 540		< 650		< 510	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 250		< 270		< 270		< 400		< 270		< 280		< 290		< 290		< 310		< 270		< 320		< 250	
Benzene	2,000	5,000	5	--	< 250		< 270		< 270		< 400		< 270		< 280		< 290		< 290		< 310		< 270		< 320		< 250	
Toluene	6.30E+06	9.10E+07	7,000	--	< 250		< 270		< 270		< 400		< 270		< 280		< 290		< 290		< 310		< 270		< 320		< 250	
Acetone	7.00E+07	NLE	19,000	--	< 510		< 550		< 540		< 790		< 550		< 550		< 580		< 590		< 610		< 540		< 650		< 510	
Vinyl Chloride	700	2,000	5	--	< 760		< 820		< 810		< 1200		< 820		< 830		< 870		< 880		< 920		< 810		< 970		< 760	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 510		< 550		< 540		< 790		< 550		< 550		< 580		< 590		< 610		< 540		< 650		< 510	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 760		< 820		< 810		< 1200		< 820		< 830		< 870		< 880		< 920		< 810		<970		< 760	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 510		< 550		< 540		< 790		< 550		< 550		< 580		< 590		< 610		< 540		<650		< 510	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**4000**		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3428.12		3428.14		3428.16		3428.18		3428.20		3428.24		3428.22		3432.02		3432.04		3432.06		3432.08		3432.10	
Naphthalene	6,000	17,000	25,000	--	< 260		< 300		< 270		< 270		< 270		< 280		< 270		< 280		< 290		< 270		< 290		< 260	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 190		< 230		< 200		< 200		< 200		< 210		< 200		< 210		< 220		< 200		< 220		< 210	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 290		< 340		< 300		< 300		< 300		< 320		< 300		< 310		< 320		< 310		< 320		< 290	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 200		< 240		< 210		< 210		< 210		< 220		< 210		< 220		< 230		< 210		< 260		< 210	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 190		< 220		< 190		< 190		< 200		< 200		< 190		< 200		< 210		< 200		< 210		< 190	
Dibenzofuran	NLE	NLE	NLE	--	< 200		< 230		< 210		< 210		< 210		< 220		< 200		< 210		< 220		< 210		< 220		< 200	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 220		< 250		< 230		< 230		< 230		< 240		< 220		< 230		< 240		< 230		< 240		< 220	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 200		< 240		< 210		< 210		< 210		< 220		< 210		< 220		< 220		< 210		< 230		< 210	
Phenanthrene	NLE	3.00E+08	NLE	--	< 210		< 240		**130**	J	< 210		**220**		**720**		**220**		**720**		< 230		**320**		**200**	J	< 210	
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 210		< 240		< 210		< 210		< 220		**180**	J	< 210		**120**	J	< 230		< 220		< 230		< 210	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**590**	JB	**720**	JB	**2200**	B	**660**	JB	**1500**	B	**650**	JB	**670**	JB	**560**	JB	**1400**	B	**1200**	B	**1200**	B	**1100**	B
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	< 210		< 240		**160**	J	< 220		**390**		**830**		**230**		**1600**		**290**		**580**		**180**	J	< 210	
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	< 240		< 280		**180**	J	< 250		**470**		**780**		**300**		**1500**		**290**		**530**		**260**	J	< 240	
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 270		< 310		< 280		< 280		< 280		< 290		< 270		< 280		< 300		< 280		< 300		< 270	
Benzo(a)anthracene	600	2,000	800	--	< 210		< 240		< 220		< 220		**220**		**350**		**130**	J	**690**		**330**		**240**		< 230		< 210	
Chrysene	62,000	230,000	80,000	--	< 270		< 310		**230**	J	**110**	J	**530**		**660**		**380**		**1800**		**820**		**530**		< 300		< 270	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**260**	JB	**320**	JB	**410**	B	**660**	B	**340**	B	**360**	B	**350**	B	**260**	JB	**420**	B	**140**	JB	**170**	JB	**220**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	< 260		< 300		< 270		< 270		**210**	JD	**250**	J	**110**	J	**840**		**470**		**160**	J	< 290		< 260	
Benzo(k)fluoranthene	6,000	23,000	25,000	--	< 190		< 220		**170**	J	< 200		**330**		**560**		**210**		**990**		**670**		**350**		**160**	J	< 200	
Benzo(a)pyrene	200	200	200	--	< 200		< 230		< 210		< 210		**300**		**400**		**130**	J	**1000**		**350**		**300**		< 220		< 200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 220		< 250		< 230		< 230		**190**	J	**210**	J	< 220		**560**		< 240		**190**	J	< 240		< 220	
Dibenz(a,h)anthracene	200	200	800	--	< 250		< 290		< 270		< 260		< 270		< 280		< 260		**390**		< 280		< 270		< 280		< 260	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 250		< 290		< 270		< 260		< 270		**220**	J	< 260		**550**		<280		< 270		< 280		< 260	
TICs	NLE	NLE	NLE	--	**3120**		**3800**		**8400**		**11450**		**18120**		**9900**		**11290**		**7300**		**22800**		**9590**		**6180**		**4360**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	**0.059**		**0.014**		**0.164**		**0.044**		**0.211**		**0.944**		**0.456**		**0.111**		**0.098**		**0.186**		**0.275**		**0.09**	
Dieldrin	0.04	0.2	0.003	--	< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011	
4,4'-DDD	3	13	4	--	**0.005**		< 0.0015		**0.069**		**0.009**		**0.142**		**0.289**		**0.133**		**0.05**		**0.059**		**0.022**		**0.041**		**0.035**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011	
4,4'-DDT	2	8	11	--	**0.063**		**0.008**		**0.25**		**0.117**		**0.112**		**0.208**		**0.176**		**0.176**		**0.312**		**0.225**		**0.467**		**0.18**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011	
alpha-Chlordane	0.2	1	0.05	--	< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-36	B-37	B-38	B-39	B-40	B-40 Dup	B-41	B-42	B-43	B-44	B-45	B-46
Sample Date					03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**1855**	**3235**	**3410**	**3162**	**5132**	**4053**	**6090**	**5180**	**10420**	**8551**	**1757**	**4696**
Antimony	31	450	6	ND	**0.426**	**0.474**	**0.801**	**1.016**	**1.075**	**0.863**	**1.38**	**0.69**	**2.23**	**0.696**	**5.67**	**0.979**
Arsenic	19	19	19	22.9	**1.315**	**3.544**	**12.05**	**9.484**	**11.61**	**14.58**	**9.922**	**11.23**	**16.21**	**10**	**4.379**	**8.333**
Barium	16,000	59,000	2,100	32.3	**5.639**	**45.59**	**128.7**	**17.24**	**71.02**	**70.08**	**84.03**	**49.63**	**54.09**	**49.56**	**28.44**	**82.1**
Beryllium	16	140	0.7	2	**0.127**	**0.8634**	**0.4662**	**0.3693**	**0.6631**	**0.4958**	**0.6972**	**1.5599**	**1.267**	**0.5654**	**0.18**	**0.6231**
Cadmium	78	78	2	ND	< 0.058	**0.5593**	**0.2638**	**0.4148**	**0.1471**	< 0.064	**0.8425**	**0.1605**	< 0.062	**0.2881**	**0.1212**	**0.1333**
Calcium	NLE	NLE	NLE	921	**996.7**	**1143**	**1109**	**931.5**	**1317**	**1271**	**1478**	**1111**	**1687**	**1054**	**475.2**	**810.8**
Chromium	NLE	NLE	NLE	269	**23.75**	**5.249**	**29.69**	**27.07**	**63.37**	**51.15**	**56.51**	**46.02**	**134**	**37.94**	**10.56**	**43.98**
Cobalt	1,600	590	90	2.5	**0.2485**	**4.283**	**2.585**	**3.301**	**1.679**	**1.116**	**1.863**	**1.767**	**1.629**	**2.152**	**0.9717**	**2.176**
Copper	3,100	45,000	11,000	8	**24.37**	**26.39**	**44.16**	**37.37**	**23.91**	**17.75**	**58.75**	**61.41**	**25.73**	**39.89**	**9.757**	**41.31**
Iron	NLE	NLE	NLE	55,800	**3564**	**1569**	**13290**	**16380**	**15810**	**14460**	**16560**	**16950**	**29340**	**14440**	**3999**	**12530**
Lead	400	800	90	19.5	**3.324**	**18.56**	**129.4**	**40.67**	**35.42**	**23.37**	**82.95**	**49.1**	**37.93**	**54.89**	**28.98**	**28.24**
Magnesium	NLE	NLE	NLE	7,230	**314.8**	**96.27**	**820.2**	**460.3**	**1663**	**1321**	**1584**	**1388**	**4127**	**1113**	**286.6**	**1346**
Manganese	11,000	5,900	65	90.7	**5.719**	**38.8**	**66.82**	**46.57**	**34.75**	**18.91**	**50.74**	**49.29**	**41.07**	**60.75**	**17.01**	**27.42**
Mercury	23	65	0.1	ND	**0.031**	**0.084**	**0.212**	**0.054**	**0.1**	**0.093**	**0.136**	**0.113**	**0.078**	**0.095**	**0.113**	**0.102**
Nickel	1,600	23,000	48	8.4	**1.095**	**11.74**	**6.638**	**10.18**	**5.603**	**3.999**	**10.42**	**6.326**	**6.554**	**6.718**	**4.667**	**6.517**
Potassium	NLE	NLE	NLE	15,400	**424.6**	**265.2**	**2133**	**997.4**	**5385**	**4211**	**4839**	**3470**	**9093**	**2890**	**307.1**	**3777**
Selenium	390	5,700	11	1.9	< 0.347	< 0.402	**1.126**	**1.046**	**1.198**	**1.305**	< 0.373	< 0.363	< 0.372	**0.334**	< 0.341	**0.777**
Silver	390	5,700	1	1.1	< 0.347	< 0.402	< 0.394	< 0.350	< 0.355	< 0.383	< 0.373	< 0.363	< 0.372	< 0.320	< 0.341	< 0.361
Sodium	NLE	NLE	NLE	51.6	**88.89**	**115.3**	**130.1**	**50.75**	**319.1**	**135.8**	**105.6**	**61.41**	**162.2**	**94.87**	**52.82**	**123.6**
Thallium	5	79	3	ND	< 0.347	< 0.402	< 0.394	< 0.350	< 0.355	< 0.383	< 0.373	< 0.363	< 0.372	< 0.320	< 0.341	< 0.361
Vanadium	78	1,100	NA	94.1	**11.45**	**10.93**	**13.96**	**19.15**	**16.68**	**13.25**	**25.89**	**19.26**	**43.12**	**16.99**	**8.171**	**18.76**
Zinc	23,000	110,000	930	81.4	**9.468**	**181.7**	**84.81**	**157.7**	**58.14**	**52.61**	**129.7**	**68.39**	**78.77**	**87.89**	**35.31**	**40.08**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-47		B-48		B-49		B-50		B-51		B-52		B-53		B-54		B-55		B-56		B-57		B-58	
Sample Date					03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		08/26/99		08/26/99		08/26/99		08/26/99		08/26/99		08/26/99		08/26/99	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					3432.13		3432.15		3432.17		3432.19		3432.21		4748.03		4748.05		4748.07		4748.09		4748.11		4748.13		4748.15	
Methylene Chloride	34000	97,000	10	--	< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600		< 700		< 620		< 620		< 550	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300		< 350		< 310		< 310		< 270	
Benzene	2,000	5,000	5	--	< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300		< 350		< 310		< 310		< 270	
Toluene	6.30E+06	9.10E+07	7,000	--	< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300		< 350		< 310		< 310		< 270	
Acetone	7.00E+07	NLE	19,000	--	< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600		< 700		< 620		< 620		< 550	
Vinyl Chloride	700	2,000	5	--	< 960		< 850		< 880		< 900		< 880		< 890		< 780		< 890		< 1100		< 930		< 940		< 820	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600		< 700		< 620		< 620		< 550	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 960		< 850		< 880		< 900		< 880		< 890		< 780		< 890		< 1100		< 930		< 940		< 820	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600		< 700		< 620		< 620		< 550	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3432.12		3432.14		3432.16		3432.18		3432.20		4748.02		4748.04		4748.06		4748.08		4748.10		4748.12		4748.14	
Naphthalene	6,000	17,000	25,000	--	< 260		< 260		< 250		< 300		< 280		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 200		< 200		< 190		< 220		< 210		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 290		< 300		< 280		< 330		< 310		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 210		< 210		< 200		< 230		< 220		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 190		< 190		< 180		< 210		< 200		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Dibenzofuran	NLE	NLE	NLE	--	< 200		< 200		< 190		< 230		< 210		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 220		< 140		< 210		< 250		< 230		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 210		< 210		< 190		< 230		< 220		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Phenanthrene	NLE	3.00E+08	NLE	--	**170**	J	< 210		< 200		< 230		< 220		**150**	J	< 1100		**330**	J	< 1200		**140**	J	< 1200		< 1100	
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 210		< 210		< 200		< 230		< 220		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**2100**	B	**2000**	B	**400**	JB	**960**	JB	**360**	JB	**490**	JB	**1100**	JB	**1100**	JB	**1100**	JB	**320**	JB	**1100**	JB	**1600**	B
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**210**	J	**140**	J	< 200		**160**	J	< 220		**280**	J	**120**	J	**920**	J	**180**	J	**330**	J	< 1200		< 1100	
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**230**	J	**140**	J	< 230		**160**	J	< 260		**230**	J	< 1100		**790**	J	**160**	J	**320**	J	< 1200		< 1100	
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 270		< 270		< 260		< 300		< 290		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Benzo(a)anthracene	600	2,000	800	--	< 210		< 210		< 200		< 240		< 220		**120**	J	< 1100		**390**	J	< 1200		**200**	J	< 1200		< 1100	
Chrysene	62,000	230,000	80,000	--	< 270		**150**	J	< 260		**180**	J	**120**	J	**130**	J	< 1100		**590**	J	**120**	J	**300**	J	< 1200		< 1100	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**150**	JB	**170**	JB	< 280		**190**	JB	**440**	B	**210**	JB	**190**	JB	**220**	JB	**230**	JB	**130**	JB	**190**	JB	**190**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**120**	J	< 260		< 250		< 300		< 280		< 1200		< 1100		**500**	J	< 1200		**350**	J	< 1200		< 1100	
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**140**	J	< 200		< 190		< 220		< 210		< 1200		< 1100		**380**	J	< 1200		**250**	J	< 1200		< 1100	
Benzo(a)pyrene	200	200	200	--	< 200		< 200		< 190		< 230		< 210		< 1200		< 1100		**320**	J	< 1200		**250**	J	< 1200		< 1100	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 220		< 220		< 210		< 250		< 230		< 1200		< 1100		**220**	J	< 1200		**150**	J	< 1200		< 1100	
Dibenz(a,h)anthracene	200	200	800	--	< 260		< 260		< 240		< 290		< 270		< 1200		< 1100		< 1300		< 1200		< 1200		< 1200		< 1100	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 260		< 260		< 240		< 290		< 270		< 1200		< 1100		**220**	J	< 1200		**170**	J	< 1200		< 1100	
TICs	NLE	NLE	NLE	--	**15760**		**17400**		**6930**		**66300**		**4320**		**10530**		**31960**		**25210**		**71400**		**31340**		**19680**		**18240**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	**0.128**		**0.086**		**0.14**		**0.234**		**0.044**		**0.005**		**0.037**		**0.264**		**0.05**		**0.56**		**0.002**		**0.006**	
Dieldrin	0.04	0.2	0.003	--	< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDD	3	13	4	--	**0.033**		**0.035**		**0.073**		**0.089**		**0.008**		< 0.0007		**0.05**		**0.781**		**0.026**		**0.714**		< 0.0007		**0.003**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDT	2	8	11	--	**0.138**		**0.27**		**0.461**		**0.485**		**0.055**		**0.011**		**0.112**		**0.28**		**0.046**		**0.097**		**0.004**		**0.023**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0006		< 0.0006	
alpha-Chlordane	0.2	1	0.05	--	< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0006		< 0.0006	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-47	B-48	B-49	B-50	B-51	B-52	B-53	B-54	B-55	B-56	B-57	B-58
Sample Date					03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**3458**	**8286**	**3854**	**5679**	**6382**	**20800**	**15300**	**19000**	**11500**	**7960**	**11600**	**13500**
Antimony	31	450	6	ND	**0.451**	**0.969**	**0.565**	**0.618**	**0.707**	< 0.446	< 0.413	**1.12**	< 0.411	**3.53**	< 0.507	< 0.402
Arsenic	19	19	19	22.9	**4.976**	**8.409**	**8.337**	**7.217**	**9.589**	**27.2**	**19.1**	**46.9**	**19.5**	**7.64**	**20.5**	**22.6**
Barium	16,000	59,000	2,100	32.3	**34.5**	**26.35**	**35.95**	**21.4**	**29.13**	**26.9**	**35.2**	**27.6**	**39.4**	**38.6**	**7.42**	**5.25**
Beryllium	16	140	0.7	2	**0.3267**	**0.7705**	**0.4051**	**0.5608**	**0.6929**	**2.65**	**2.14**	**2.35**	**0.753**	**0.623**	**1.55**	**1.76**
Cadmium	78	78	2	ND	**0.2149**	< 0.061	**0.0833**	< 0.061	< 0.057	**2.43**	**1.96**	**2.7**	**0.868**	**0.94**	**1.19**	**1.22**
Calcium	NLE	NLE	NLE	921	**529.5**	**753.4**	**1062**	**640.5**	**1341**	**1130**	**2270**	**1020**	**598**	**1200**	**260**	**931**
Chromium	NLE	NLE	NLE	269	**18.74**	**61.33**	**37.89**	**35.65**	**48.86**	**333**	**237**	**293**	**84.3**	**60.4**	**187**	**200**
Cobalt	1,600	590	90	2.5	**1.182**	**1.755**	**0.9757**	**2.081**	**1.857**	**1.17**	**1.08**	**1.2**	**1.53**	**2.23**	**0.641**	**0.493**
Copper	3,100	45,000	11,000	8	**19.19**	**12.98**	**8.154**	**10.21**	**30.46**	**23.3**	**20.5**	**24.2**	**33.6**	**13.6**	**4.81**	**5.68**
Iron	NLE	NLE	NLE	55,800	**7228**	**18920**	**11470**	**14250**	**17640**	**68500**	**53200**	**67000**	**26000**	**20200**	**37500**	**37700**
Lead	400	800	90	19.5	**56.02**	**36.42**	**18.73**	**27.98**	**28.4**	**38.8**	**16**	**61.5**	**41.7**	**34.6**	**6.53**	**5.24**
Magnesium	NLE	NLE	NLE	7,230	**619.9**	**2045**	**1166**	**1031**	**1523**	**10800**	**7670**	**9040**	**2510**	**1330**	**4420**	**5510**
Manganese	11,000	5,900	65	90.7	**26.87**	**37.7**	**21.86**	**49.01**	**45.29**	**35.1**	**28.6**	**28**	**26.4**	**24.5**	**21.4**	**15**
Mercury	23	65	0.1	ND	**0.14**	**0.166**	**0.087**	**0.057**	**0.102**	**0.077**	**0.132**	**0.051**	**0.151**	**0.226**	< 0.026	< 0.024
Nickel	1,600	23,000	48	8.4	**3.272**	**5.857**	**3.606**	**4.805**	**5.213**	**7.81**	**7.18**	**9.4**	**7.84**	**7.38**	**6.28**	**4.51**
Potassium	NLE	NLE	NLE	15,400	**1120**	**6228**	**3119**	**2451**	**4066**	**24100**	**18400**	**21100**	**4420**	**2980**	**10200**	**12600**
Selenium	390	5,700	11	1.9	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	**1.42**	**1.74**	**2.23**	**1.77**	< 0.737	**2.46**	**1.33**
Silver	390	5,700	1	1.1	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	< 0.670	< 0.620	< 0.670	< 0.616	< 0.737	< 0.760	< 0.603
Sodium	NLE	NLE	NLE	51.6	**67.61**	**124.6**	**43.61**	**32.32**	**37.33**	**165**	**325**	**154**	**187**	**97.1**	**76.3**	**180**
Thallium	5	79	3	ND	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	< 0.670	< 0.620	< 0.670	< 0.616	< 0.737	< 0.760	< 0.603
Vanadium	78	1,100	NA	94.1	**11.81**	**33.25**	**12.98**	**21.22**	**23.79**	**125**	**83.5**	**120**	**55.1**	**55.2**	**72.5**	**81.6**
Zinc	23,000	110,000	930	81.4	**44.42**	**50.77**	**42.09**	**45.21**	**69.75**	**87.7**	**82.3**	**114**	**48.7**	**103**	**43.5**	**38.5**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = not analyzed
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
DUP = field duplicate sample
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-59		B-60		B-61		B-63		B-64		B-65		B-66		B-67		B-68		B-69		B-70		B-71	
Sample Date					08/26/99		08/26/99		08/26/99		08/27/99		08/27/99		08/27/99		08/27/99		08/27/99		08/27/99		08/27/99		08/27/99		08/27/99	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					4748.17		4748.19		4748.21		4754.03		4754.05		4754.07		4754.09		4754.11		4754.13		4754.15		4754.17		4754.19	
Methylene Chloride	34000	97,000	10	--	< 560		< 660		< 610		< 580		< 640		< 600		< 630		< 570		< 580		< 570		< 590		< 590	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 280		< 330		< 310		< 290		< 320		< 300		< 310		< 290		< 290		< 290		< 300		< 290	
Benzene	2,000	5,000	5	--	< 280		< 330		< 310		< 290		< 320		< 300		< 310		< 290		< 290		< 290		< 300		< 290	
Toluene	6.30E+06	9.10E+07	7,000	--	< 280		< 330		< 310		< 290		< 320		< 300		< 310		< 290		< 290		< 290		< 300		< 290	
Acetone	7.00E+07	NLE	19,000	--	< 560		< 660		< 610		< 580		< 640		< 600		< 630		< 570		< 580		< 570		< 590		< 590	
Vinyl Chloride	700	2,000	5	--	< 830		< 980		< 920		< 870		< 950		< 910		< 940		< 860		< 870		< 860		< 890		< 880	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 560		< 660		< 610		< 580		< 640		< 600		< 630		< 570		< 580		< 570		< 590		< 590	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 830		< 980		< 920		< 870		< 950		< 910		< 940		< 860		< 870		< 860		< 890		< 880	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 560		< 660		< 610		< 580		< 640		< 600		< 630		< 570		< 580		< 570		< 590		< 590	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4748.16		4748.18		4748.20		4754.02		4754.04		4754.06		4754.08		4754.10		4754.12		4754.14		4754.16		4754.18	
Naphthalene	6,000	17,000	25,000	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Dibenzofuran	NLE	NLE	NLE	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		**200**	J	**140**	J	< 1000		< 1100		< 1100		< 1100	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Phenanthrene	NLE	3.00E+08	NLE	--	**120**	J	< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**1800**	
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**520**	J
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**510**	JB	**800**	JB	**1800**	B	**2200**	B	**970**	JB	**1100**	JB	**280**	JB	**290**	JB	**720**	JB	**840**	JB	**1300**	B	**460**	JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**260**	J	< 1100		< 1000		**310**	J	**720**	J	< 1200		< 1200		< 1100		**130**	J	< 1100		< 1100		**3400**	
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**240**	J	< 1100		< 1000		**260**	J	< 1200		< 1200		< 1200		< 1100		**140**	J	< 1100		< 1100		**2500**	
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		< 1100	
Benzo(a)anthracene	600	2,000	800	--	**150**	J	< 1100		< 1000		**150**	J	**580**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**1400**	
Chrysene	62,000	230,000	80,000	--	**230**	J	< 1100		< 1000		**160**	J	**780**	J	< 1200		< 1200		< 1100		**120**	J	< 1100		< 1100		**1400**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**250**	JB	**190**	JB	**260**	JB	**400**	JB	**140**	JB	**240**	JB	**120**	JB	**150**	JB	**200**	JB	**120**	JB	**190**	JB	**290**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**200**	J	< 1100		< 1000		**130**	J	**510**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**1200**	
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**150**	J	< 1100		< 1000		**120**	J	**390**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**1100**	
Benzo(a)pyrene	200	200	200	--	**130**	J	< 1100		< 1000		**130**	J	**490**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**1300**	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1100		< 1100		< 1000		< 1100		**210**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**620**	J
Dibenz(a,h)anthracene	200	200	800	--	< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**180**	J
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1100		< 1100		< 1000		< 1100		**240**	J	< 1200		< 1200		< 1100		< 1000		< 1100		< 1100		**610**	J
TICs	NLE	NLE	NLE	--	**12450**		**10120**		**22140**		**29040**		**10310**		**15600**		**15460**		**15380**		**16800**		**15740**		**29020**		**10090**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	**0.252**		**0.004**		**0.002**		**0.048**		< 0.0005		**0.013**		**0.009**		**0.21**		< 0.0004		**0.003**		**0.064**		**0.005**	
Dieldrin	0.04	0.2	0.003	--	< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDD	3	13	4	--	< 0.0006		< 0.0006		**0.001**		**0.024**		< 0.0007		**0.003**		**0.009**		**0.961**		< 0.0006		< 0.0006		**0.025**		< 0.0007	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDT	2	8	11	--	**0.499**		**0.003**		< 0.0012		**0.015**		**0.003**		**0.174**		**0.011**		**0.08**		< 0.0012		**0.002**		**0.33**		**0.008**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
alpha-Chlordane	0.2	1	0.05	--	< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-59	B-60	B-61	B-63	B-64	B-65	B-66	B-67	B-68	B-69	B-70	B-71
Sample Date					08/26/99	08/26/99	08/26/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**8210**	**14000**	**4480**	**13600**	**18700**	**15700**	**19100**	**11700**	**11700**	**4900**	**17400**	**20200**
Antimony	31	450	6	ND	< 0.457	< 0.413	< 0.434	< 0.442	< 0.534	< 0.529	< 0.523	< 0.428	< 0.393	< 0.485	< 0.485	< 0.471
Arsenic	19	19	19	22.9	**12.7**	**5.53**	**4.05**	**12.6**	**51.3**	**29.4**	**24.4**	**14.1**	**6.95**	**4.79**	**22.3**	**24.2**
Barium	16,000	59,000	2,100	32.3	**40.9**	**21.8**	**6.32**	**74**	**25.3**	**6.35**	**15**	**38.2**	**17.7**	**9.32**	**29.3**	**22.9**
Beryllium	16	140	0.7	2	**0.513**	**0.379**	**0.33**	**1.95**	**2.14**	**2.18**	**2.19**	**0.962**	**1.23**	**0.361**	**2.13**	**1.91**
Cadmium	78	78	2	ND	**0.816**	**0.242**	**0.564**	**1.36**	**0.339**	**0.385**	**0.42**	**0.36**	**0.308**	**0.281**	**0.557**	**0.257**
Calcium	NLE	NLE	NLE	921	**364**	**190**	**88.7**	**5780**	**555**	**290**	**447**	**2590**	**840**	**105**	**997**	**694**
Chromium	NLE	NLE	NLE	269	**48.5**	**21.9**	**39.1**	**215**	**251**	**256**	**266**	**91.4**	**114**	**40.4**	**258**	**239**
Cobalt	1,600	590	90	2.5	**3.32**	**2.5**	**1.27**	**2.03**	**1.3**	**0.874**	**1.36**	**2.38**	**1.87**	**1.32**	**1.4**	**1.14**
Copper	3,100	45,000	11,000	8	**7.01**	**1.39**	< 0.652	**15.9**	**24.4**	**12.2**	**12**	**14.9**	**4.94**	**4.48**	**12.8**	**14.7**
Iron	NLE	NLE	NLE	55,800	**24100**	**14300**	**12400**	**48800**	**50900**	**49900**	**54000**	**28600**	**38200**	**14200**	**58200**	**48000**
Lead	400	800	90	19.5	**23.1**	**7.33**	**2.97**	**7.58**	**16.1**	**4.73**	**7.94**	**7.56**	**4.98**	**2.86**	**17.5**	**45.5**
Magnesium	NLE	NLE	NLE	7,230	**703**	**855**	**785**	**6900**	**7490**	**7580**	**8040**	**3340**	**4400**	**839**	**8190**	**7280**
Manganese	11,000	5,900	65	90.7	**55.3**	**38.6**	**28.6**	**52.5**	**37.6**	**19.6**	**36.7**	**55.7**	**41.7**	**27.2**	**27.6**	**41.3**
Mercury	23	65	0.1	ND	**0.117**	**0.023**	**0.021**	< 0.024	**0.084**	< 0.024	< 0.024	**0.028**	< 0.025	< 0.021	**0.026**	< 0.020
Nickel	1,600	23,000	48	8.4	**9.49**	**7.05**	**2.71**	**17.6**	**6.65**	**6.47**	**5.95**	**6.75**	**5.61**	**2.58**	**7.59**	**5.77**
Potassium	NLE	NLE	NLE	15,400	**1480**	**618**	**1520**	**16200**	**16700**	**17300**	**18000**	**6420**	**10600**	**1900**	**18800**	**16100**
Selenium	390	5,700	11	1.9	**1.9**	< 0.619	< 0.652	**1.53**	**0.886**	< 0.793	**0.848**	**0.882**	< 0.590	< 0.728	**0.766**	< 0.706
Silver	390	5,700	1	1.1	< 0.685	< 0.619	< 0.652	< 0.664	< 0.801	< 0.793	< 0.785	< 0.642	< 0.590	< 0.728	< 0.727	< 0.706
Sodium	NLE	NLE	NLE	51.6	**83.2**	**94.3**	**56**	**279**	**228**	**191**	**367**	**151**	**150**	**174**	**171**	**166**
Thallium	5	79	3	ND	< 0.685	< 0.619	< 0.652	< 0.664	< 0.801	< 0.793	< 0.785	< 0.642	< 0.590	< 0.728	< 0.727	< 0.706
Vanadium	78	1,100	NA	94.1	**65.5**	**29.2**	**36.3**	**71.6**	**118**	**112**	**123**	**57.2**	**64.2**	**37.3**	**106**	**112**
Zinc	23,000	110,000	930	81.4	**41.6**	**33.1**	**16.8**	**77.3**	**59.8**	**48.9**	**83.4**	**49.3**	**35**	**16.4**	**77**	**69.5**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-72		B-72 Dup		B-73		B-74		B-75		B-76		B-77		B-78		B-79		B-80		B-81		B-82	
Sample Date					08/27/99		08/27/99		08/27/99		08/30/99		08/30/99		08/30/99		08/30/99		08/30/99		08/30/99		08/30/99		08/30/99		08/30/99	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					4754.21		4754.25		4754.23		4760.03		4760.05		4760.07		4760.09		4760.11		4760.13		4760.15		4760.17		4760.19	
Methylene Chloride	34000	97,000	10	--	< 610		< 570		< 610		< 630		< 600		< 700		< 580		< 720		< 550		< 620		< 610		< 850	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 310		< 290		< 310		**1100**		< 300		< 350		< 290		< 360		< 280		< 310		< 300		< 420	
Benzene	2,000	5,000	5	--	< 310		< 290		< 310		**1300**		< 300		< 350		< 290		< 360		< 280		< 310		< 300		< 420	
Toluene	6.30E+06	9.10E+07	7,000	--	< 310		< 290		< 310		**680**		< 300		< 350		< 290		< 360		< 280		< 310		< 300		< 420	
Acetone	7.00E+07	NLE	19,000	--	< 610		< 570		< 610		< 630		< 600		< 700		< 580		< 720		< 550		< 620		< 610		< 850	
Vinyl Chloride	700	2,000	5	--	< 920		< 860		< 920		< 950		< 910		< 1000		< 860		< 1100		< 830		< 930		< 910		< 1300	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 610		< 570		< 610		**880**		< 600		< 700		< 580		< 720		< 550		< 620		< 610		< 850	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 920		< 860		< 920		**740**	J	< 910		< 1000		< 860		< 1100		< 830		< 930		< 910		< 1300	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 610		< 570		< 610		**510**	J	< 600		< 700		< 580		< 720		< 550		< 620		< 610		< 850	
TICs	NLE	NLE	NLE	--	ND		ND		ND		**31000**		ND		ND		ND		ND		**12000**		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4754.20		4754.24		4754.22		4760.02		4760.04		4760.06		4760.08		4760.10		4760.12		4760.14		4760.16		4760.18	
Naphthalene	6,000	17,000	25,000	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Dibenzofuran	NLE	NLE	NLE	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		**120**	J	< 1200		**140**	J	< 1200		**150**	J	< 1200	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Phenanthrene	NLE	3.00E+08	NLE	--	< 1200		< 1100		< 1000		< 1100		**450**	J	< 1000		< 1100		< 1200		**210**	J	< 1200		< 1200		< 1200	
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**940**	JB	**1400**	B	**670**	JB	**3740**	JB	**1300**	B	**240**	JB	**230**	JB	**1000**	JB	**260**	JB	**440**	JB	**1000**	JB	**860**	JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	< 1200		< 1100		**120**	J	< 1100		**820**	J	**230**	J	< 1100		< 1200		**310**	J	< 1200		< 1200		**130**	J
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	< 1200		< 1100		**120**	J	< 1100		**710**	J	**260**	J	< 1100		< 1200		**300**	J	< 1200		< 1200		**130**	J
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Benzo(a)anthracene	600	2,000	800	--	< 1200		< 1100		< 1000		< 1100		**400**	J	**230**	J	< 1100		< 1200		**140**	J	< 1200		< 1200		< 1200	
Chrysene	62,000	230,000	80,000	--	< 1200		< 1100		< 1000		< 1100		**500**	J	**300**	J	< 1100		< 1200		**210**	J	< 1200		< 1200		< 1200	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**160**	JB	**230**	JB	**110**	JB	**230**	JB	**260**	JB	**220**	JB	**180**	JB	**230**	JB	**230**	JB	**190**	JB	**220**	JB	**200**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	< 1200		< 1100		< 1000		< 1100		**420**	J	**320**	J	< 1100		< 1200		**140**	J	< 1200		< 1200		< 1200	
Benzo(k)fluoranthene	6,000	23,000	25,000	--	< 1200		< 1100		< 1000		< 1100		**430**	J	**320**	J	< 1100		< 1200		**130**	J	< 1200		< 1200		< 1200	
Benzo(a)pyrene	200	200	200	--	< 1200		< 1100		< 1000		<1100		**390**	J	**300**	J	< 1100		< 1200		**140**	J	< 1200		< 1200		< 1200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1200		< 1100		< 1000		< 1100		**230**	J	**170**	J	< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Dibenz(a,h)anthracene	200	200	800	--	< 1200		< 1100		< 1000		< 1100		< 1100		< 1000		< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1200		< 1100		< 1000		< 1100		**230**	J	**170**	J	< 1100		< 1200		< 1200		< 1200		< 1200		< 1200	
TICs	NLE	NLE	NLE	--	**15420**		**16300**		**27200**		**17380**		**13800**		**31110**		**14350**		**16300**		**21820**		**14900**		**26550**		**43530**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	< 0.0005		< 0.0004		**0.166**		**0.039**		**0.491**		**0.137**		< 0.0004		**0.001**		**0.097**		< 0.0005		**0.751**		**0.181**	
Dieldrin	0.04	0.2	0.003	--	< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDD	3	13	4	--	< 0.0007		< 0.0007		**1.766**		**0.012**		**0.689**		**0.115**		< 0.0007		< 0.0007		**0.23**		< 0.0007		**0.414**		**0.28**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDT	2	8	11	--	< 0.0013		< 0.0012		**0.2**		**0.085**		**0.156**		**0.246**		**0.003**		**0.003**		**0.054**		< 0.0013		**1.98**		**0.124**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		**0.11**		< 0.0006	
alpha-Chlordane	0.2	1	0.05	--	< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		**0.063**		< 0.0006	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-72	B-72 Dup	B-73	B-74	B-75	B-76	B-77	B-78	B-79	B-80	B-81	B-82
Sample Date					08/27/99	08/27/99	08/27/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**20100**	**19100**	**10400**	**15100**	**16400**	**11600**	**21600**	**13700**	**14300**	**9650**	**11700**	**9940**
Antimony	31	450	6	ND	< 0.493	< 0.472	< 0.415	< 0.465	< 0.483	< 0.437	< 0.496	< 0.452	< 0.451	< 0.500	< 0.534	< 0.548
Arsenic	19	19	19	22.9	**43.3**	**42.1**	**10**	**16**	**21.8**	**9.59**	**28.6**	**27.1**	**13.4**	**16.4**	**16.8**	**13.1**
Barium	16,000	59,000	2,100	32.3	**11.3**	**11.8**	**66.1**	**29.1**	**32**	**47.4**	**18.2**	**17.1**	**41.7**	**17.7**	**16.7**	**84.2**
Beryllium	16	140	0.7	2	**2.71**	**2.56**	**0.738**	**1.42**	**1.85**	**1.15**	**2.63**	**1.86**	**1.47**	**0.64**	**1.41**	**1.38**
Cadmium	78	78	2	ND	**0.612**	**0.6**	**0.272**	**0.336**	**0.42**	**0.33**	**0.831**	**0.458**	**0.385**	**0.257**	**0.612**	**0.483**
Calcium	NLE	NLE	NLE	921	**481**	**426**	**439**	**752**	**599**	**750**	**702**	**482**	**629**	**941**	**635**	**1690**
Chromium	NLE	NLE	NLE	269	**314**	**295**	**55.6**	**171**	**221**	**134**	**330**	**208**	**143**	**74.8**	**149**	**152**
Cobalt	1,600	590	90	2.5	**1.17**	**1.22**	**3.33**	**1.61**	**1.3**	**1.47**	**1.25**	**0.697**	**2.33**	**1.55**	**1.4**	**1.1**
Copper	3,100	45,000	11,000	8	**5.72**	**2.14**	**22**	**4.34**	**14.9**	**12.4**	**24.5**	**15.1**	**1.92**	**21.8**	**30.9**	**8.95**
Iron	NLE	NLE	NLE	55,800	**67600**	**65200**	**24900**	**36800**	**52000**	**35300**	**71100**	**44200**	**42000**	**17800**	**35100**	**37600**
Lead	400	800	90	19.5	**13.2**	**11.3**	**34.3**	**16**	**25**	**15.1**	**32.3**	**15**	**7.38**	**33.8**	**41.3**	**14.7**
Magnesium	NLE	NLE	NLE	7,230	**9930**	**9420**	**1490**	**5110**	**6960**	**3980**	**9920**	**5670**	**4990**	**2270**	**4300**	**4260**
Manganese	11,000	5,900	65	90.7	**24**	**23.9**	**22.8**	**39.8**	**27.7**	**25.1**	**28**	**23.7**	**28.1**	**30.1**	**29.3**	**22.9**
Mercury	23	65	0.1	ND	**0.037**	**0.043**	**0.286**	< 0.024	< 0.022	**0.036**	< 0.023	< 0.024	< 0.025	< 0.025	< 0.024	**0.034**
Nickel	1,600	23,000	48	8.4	**7.06**	**6.68**	**10.4**	**5.19**	**6.37**	**5.19**	**7.82**	**5.54**	**6.01**	**7.09**	**6.91**	**5.03**
Potassium	NLE	NLE	NLE	15,400	**23200**	**22100**	**3900**	**10800**	**16000**	**9700**	**23400**	**13500**	**11500**	**3820**	**9980**	**10500**
Selenium	390	5,700	11	1.9	< 0.739	< 0.709	**1.43**	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	**1**
Silver	390	5,700	1	1.1	< 0.739	< 0.709	< 0.622	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	< 0.822
Sodium	NLE	NLE	NLE	51.6	**156**	**187**	**199**	**471**	**126**	**127**	**662**	**86.3**	**218**	**109**	**116**	**130**
Thallium	5	79	3	ND	< 0.739	< 0.709	< 0.622	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	< 0.822
Vanadium	78	1,100	NA	94.1	**125**	**121**	**42.3**	**84**	**98**	**64.5**	**125**	**69.8**	**77.5**	**34**	**59.2**	**66.7**
Zinc	23,000	110,000	930	81.4	**61.4**	**56.8**	**61.7**	**49.9**	**54.4**	**42.3**	**84.1**	**51.3**	**43.6**	**76**	**85.2**	**52.5**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-83	B-84	B-85	B-86	B-87	B-88	B-89	B-90	B-91	B-92	B-92 Dup	B-93
Sample Date					08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					4760.21	4760.23	4760.25	4760.27	4760.29	4760.31	4762.03	4762.05	4762.07	4762.09	4762.31	4762.11
Methylene Chloride	34000	97,000	10	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	< 280	< 280	< 280
Benzene	2,000	5,000	5	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	< 280	< 280	< 280
Toluene	6.30E+06	9.10E+07	7,000	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	**630**	**300**	< 280
Acetone	7.00E+07	NLE	19,000	--	< 580	< 600	< 570	< 570	< 590	< 660	**13000**	**12000**	**11000**	**12000**	**12000**	**11000**
Vinyl Chloride	700	2,000	5	--	< 870	< 900	< 860	< 850	< 880	< 980	< 890	< 820	< 810	**670** J	**320** J	< 830
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 870	< 900	< 860	< 850	< 880	< 980	< 890	< 820	< 810	< 850	< 840	< 830
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	ND	**3100**	ND	ND	ND	**1800**	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4760.20	4760.22	4760.24	4760.26	4760.28	4760.30	4762.02	4762.04	4762.06	4762.08	4762.30	4762.10
Naphthalene	6,000	17,000	25,000	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Dibenzofuran	NLE	NLE	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1100	**240** J	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**130** J
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Phenanthrene	NLE	3.00E+08	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	**200** J	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**1200** B	**2200** B	**1300** B	**1600** B	**310** JB	**680** JB	**350** JB	**250** JB	**360** JB	**840** JB	**1900** B	**290** JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	< 1100	< 1200	< 980	< 1000	< 1100	**280** J	< 1100	< 1000	< 1100	< 1200	< 1100	**340** J
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	< 1100	< 1200	< 980	< 1000	< 1100	**270** J	< 1100	< 1000	< 1100	< 1200	< 1100	**500** J
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Benzo(a)anthracene	600	2,000	800	--	< 1100	< 1200	< 980	< 1000	< 1100	**120** J	< 1100	< 1000	< 1100	< 1200	< 1100	**360** J
Chrysene	62,000	230,000	80,000	--	< 1100	< 1200	< 980	< 1000	< 1100	**190** J	< 1100	< 1000	< 1100	< 1200	< 1100	**470** J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**3100** B	**260** JB	**200** JB	**190** JB	**250** JB	**150** JB	**240** JB	**590** JB	**210** JB	**270** JB	**240** JB	**220** JB
Benzo(b)fluoranthene	600	2,000	2,000	--	< 1100	< 1200	< 980	< 1000	< 1100	**160** J	< 1100	< 1000	< 1100	< 1200	< 1100	**340** J
Benzo(k)fluoranthene	6,000	23,000	25,000	--	< 1100	< 1200	< 980	< 1000	< 1100	**130** J	< 1100	< 1000	< 1100	< 1200	< 1100	**290** J
Benzo(a)pyrene	200	200	200	--	< 1100	< 1200	< 980	< 1000	< 1100	**130** J	< 1100	< 1000	< 1100	< 1200	< 1100	**380** J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**160** J
Dibenz(a,h)anthracene	200	200	800	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**200** J
TICs	NLE	NLE	NLE	--	**18630**	**23160**	**27990**	**16740**	**21890**	**35220**	**29240**	**13900**	**26340**	**20630**	**23950**	**5530**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.003**	**0.017**	**0.061**	< 0.0004	< 0.0005	**0.28**	**0.103**	**0.004**	**0.016**	**0.003**	**0.003**	< 0.0004
Dieldrin	0.04	0.2	0.003	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005
4,4'-DDD	3	13	4	--	< 0.0007	**0.005**	**0.1**	< 0.0006	< 0.0007	**0.659**	**0.111**	**0.022**	**0.048**	**0.002**	**0.002**	< 0.0007
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005
4,4'-DDT	2	8	11	--	**0.01**	**0.076**	**0.043**	< 0.0011	< 0.0013	**0.077**	**0.125**	**0.003**	**0.015**	**0.006**	**0.003**	< 0.0012
gamma-Chlordane	0.2	1	0.05	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005
alpha-Chlordane	0.2	1	0.05	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-83	B-84	B-85	B-86	B-87	B-88	B-89	B-90	B-91	B-92	B-92 Dup	B-93
Sample Date					08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**17900**	**18600**	**12500**	**17800**	**17000**	**15100**	**14100**	**8780**	**12400**	**17400**	**21400**	**19100**
Antimony	31	450	6	ND	< 0.449	< 0.507	< 0.454	< 0.498	< 0.462	< 0.464	< 0.493	< 0.460	< 0.477	< 0.510	< 0.456	< 0.529
Arsenic	19	19	19	22.9	**40.4**	**21.7**	**8.21**	**21.2**	**40.7**	**18.8**	**25.3**	**7.51**	**9.26**	**31**	**26.9**	**26.5**
Barium	16,000	59,000	2,100	32.3	**10.5**	**15**	**57.3**	**15.1**	**83**	**32.5**	**53**	**22.8**	**47.9**	**17.6**	**30.1**	**15.2**
Beryllium	16	140	0.7	2	**2.36**	**2.15**	**1.19**	**2.02**	**2.05**	**1.74**	**1.06**	**0.632**	**0.931**	**1.47**	**1.58**	**2.32**
Cadmium	78	78	2	ND	**0.646**	**0.667**	**0.242**	**0.378**	**0.527**	**0.52**	**0.608**	**0.538**	**0.192**	**0.244**	**0.578**	**0.784**
Calcium	NLE	NLE	NLE	921	**624**	**735**	**655**	**484**	**1050**	**1180**	**2050**	**612**	**349**	**525**	**669**	**1140**
Chromium	NLE	NLE	NLE	269	**274**	**259**	**66.6**	**240**	**242**	**191**	**94.8**	**69.7**	**95.8**	**187**	**193**	**273**
Cobalt	1,600	590	90	2.5	**1.02**	**1.14**	**7.25**	**1.09**	**1.89**	**1.34**	**2.66**	**2.25**	**1.83**	**1.45**	**1.48**	**1.06**
Copper	3,100	45,000	11,000	8	**16.3**	**24.5**	**35.2**	**13.1**	**24.5**	**15.3**	**16.1**	**8.91**	**21.4**	**17.7**	**14.7**	**17.7**
Iron	NLE	NLE	NLE	55,800	**57700**	**53900**	**19100**	**46200**	**52700**	**44600**	**32100**	**21200**	**26400**	**38500**	**39800**	**54700**
Lead	400	800	90	19.5	**8.58**	**18.6**	**58.8**	**6.57**	**35.7**	**32.1**	**56.9**	**35.7**	**37.6**	**17.3**	**26.7**	**10.8**
Magnesium	NLE	NLE	NLE	7,230	**8130**	**7620**	**1610**	**6920**	**6780**	**5790**	**2850**	**1730**	**2920**	**5100**	**5370**	**8130**
Manganese	11,000	5,900	65	90.7	**21.5**	**30.4**	**39.4**	**31**	**49.2**	**71.6**	**40.9**	**38.8**	**24.4**	**47.2**	**54.9**	**22.8**
Mercury	23	65	0.1	ND	< 0.026	**0.051**	**0.09**	< 0.023	**0.059**	**0.084**	**0.261**	**0.062**	**0.05**	**0.051**	<0.025	**0.063**
Nickel	1,600	23,000	48	8.4	**6.26**	**7.73**	**21.3**	**5.26**	**7.88**	**6.31**	**8.46**	**5.58**	**5.75**	**5.2**	**5.95**	**7.67**
Potassium	NLE	NLE	NLE	15,400	**19100**	**17800**	**3980**	**15800**	**15300**	**13400**	**6530**	**3840**	**6750**	**10600**	**11500**	**18700**
Selenium	390	5,700	11	1.9	< 0.673	< 0.761	**1.17**	< 0.747	< 0.692	< 0.697	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794
Silver	390	5,700	1	1.1	< 0.673	< 0.761	< 0.682	< 0.747	< 0.692	**1.09**	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794
Sodium	NLE	NLE	NLE	51.6	**96.5**	**145**	**242**	**142**	**185**	**117**	**167**	**126**	**215**	**120**	**134**	**132**
Thallium	5	79	3	ND	< 0.673	< 0.761	< 0.682	< 0.747	< 0.692	< 0.697	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794
Vanadium	78	1,100	NA	94.1	**115**	**113**	**44.3**	**113**	**105**	**80.5**	**57.5**	**44.4**	**50.7**	**88.7**	**91**	**116**
Zinc	23,000	110,000	930	81.4	**56.4**	**76.7**	**47**	**49**	**120**	**115**	**37.1**	**82.6**	**47.9**	**57.4**	**142**	**82.8**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = not analyzed
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
DUP = field duplicate sample
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-94	B-95	B-96	B-97	B-98	B-99	B-100	B-101	B-102	B-103	B-104	B-105
Sample Date					08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	09/07/99	09/07/99	09/07/99
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					4762.13	4762.15	4762.17	4762.19	4762.21	4762.23	4762.25	4762.27	4762.29	4774.03	4774.05	4774.07
Methylene Chloride	34000	97,000	10	--	< 540	< 580	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 270	< 290	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270
Benzene	2,000	5,000	5	--	< 270	< 290	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270
Toluene	6.30E+06	9.10E+07	7,000	--	< 270	< 290	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270
Acetone	7.00E+07	NLE	19,000	--	**13000**	**13000**	**14000**	**13000**	**13000**	**14000**	**14000**	**16000**	**13000**	< 550	< 550	< 530
Vinyl Chloride	700	2,000	5	--	< 810	< 870	< 930	< 830	< 890	< 890	< 930	< 1000	< 870	< 830	< 820	< 800
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 540	< 580	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 810	< 870	< 930	< 830	< 890	< 890	< 930	< 1000	< 870	< 830	< 820	< 800
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 540	< 580	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530
TICs	NLE	NLE	NLE	--	ND	ND	ND	**2000**	**2500**	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4762.12	4762.14	4762.16	4762.18	4762.20	4762.22	4762.24	4762.26	4762.28	4774.02	4774.04	4774.06
Naphthalene	6,000	17,000	25,000	--	< 1100	< 1100	**170** J	< 1200	< 1100	< 1000	**230** J	< 1100	< 1100	< 1100	**290** J	< 1000
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1100	< 1100	**240** J	< 1200	< 1100	< 1000	**290** J	< 1100	< 1100	< 1100	**180** J	< 1000
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**880** J	**150** J
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000
Dibenzofuran	NLE	NLE	NLE	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1100	**320** J	**400** J	**230** J	**140** J	**230** J	**140** J	**120** J	< 1100	< 1100	< 1100	< 1000
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000
Phenanthrene	NLE	3.00E+08	NLE	--	< 1100	< 1100	**350** J	< 1200	< 1100	< 1000	**140** J	< 1100	< 1100	**250** J	**590** J	**470** J
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**400** J	**170** J
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**280** JB	**870** JB	**800** JB	**1100** JB	**790** JB	**1500** B	**260** JB	**1100** JB	**1100** JB	**1300** B	**1500** B	**560** JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	< 1100	< 1100	**1300**	**290** J	**120** J	**170** J	< 1200	< 1100	< 1100	**430** J	**2700**	**850** J
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	< 1100	< 1100	**1100** J	**320** J	**190** J	**180** J	< 1200	< 1100	< 1100	**400** J	**3100**	**920** J
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000
Benzo(a)anthracene	600	2,000	800	--	< 1100	< 1100	**620** J	**210** J	< 1100	**110** J	< 1200	< 1100	< 1100	**200** J	**2300**	**500** J
Chrysene	62,000	230,000	80,000	--	< 1100	< 1100	**1100** J	**270** J	**130** J	**230** J	< 1200	< 1100	< 1100	**260** J	**2600**	**660** J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**200** JB	**200** JB	**280** JB	**260** JB	**190** JB	**250** JB	**230** JB	**230** JB	**200** JB	**240** JB	**220** JB	**260** JB
Benzo(b)fluoranthene	600	2,000	2,000	--	< 1100	< 1100	**640** J	**310** J	< 1100	**250** J	**150** J	< 1100	< 1100	**210** J	**3500**	**510** J
Benzo(k)fluoranthene	6,000	23,000	25,000	--	< 1100	< 1100	**660** J	**230** J	< 1100	**160** J	< 1200	< 1100	< 1100	**210** J	**3000**	**450** J
Benzo(a)pyrene	200	200	200	--	< 1100	< 1100	**370** J	**260** J	< 1100	**120** J	< 1200	< 1100	< 1100	**190** J	**3600**	**520** J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1100	< 1100	**170** J	**190** J	< 1100	< 1000	< 1200	< 1100	< 1100	**120** J	**1900**	**240** J
Dibenz(a,h)anthracene	200	200	800	--	< 1100	< 1100	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**730** J	< 1000
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1100	< 1100	**160** J	**190** J	< 1100	< 1000	< 1200	< 1100	< 1100	**130** J	**1800**	**250** J
TICs	NLE	NLE	NLE	--	**12590**	**28070**	**78280**	**8740**	**23070**	**32150**	**22500**	**17120**	**15710**	**50360**	**30520**	**20170**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.008**	**0.087**	**0.492**	**0.003**	**0.045**	**0.021**	**0.012**	< 0.0005	**0.01**	**0.316**	**0.01**	**0.06**
Dieldrin	0.04	0.2	0.003	--	< 0.0005	< 0.0005	< 0.0006	< 0.0006	**0.002**	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDD	3	13	4	--	**0.01**	**0.124**	**1.165**	< 0.0007	**0.069**	**0.006**	**0.011**	< 0.0007	**0.007**	**0.381**	< 0.0006	**0.081**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDT	2	8	11	--	**0.002**	**0.157**	**0.699**	**0.014**	**0.148**	**0.006**	**0.007**	< 0.0013	< 0.0013	**0.38**	**0.051**	**0.231**
gamma-Chlordane	0.2	1	0.05	--	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
alpha-Chlordane	0.2	1	0.05	--	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-94	B-95	B-96	B-97	B-98	B-99	B-100	B-101	B-102	B-103	B-104	B-105
Sample Date					08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	09/07/99	09/07/99	09/07/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**19700**	**15900**	**12900**	**15100**	**12900**	**14900**	**16800**	**21800**	**24700**	**18200**	**12800**	**15700**
Antimony	31	450	6	ND	< 0.455	< 0.414	**1.88**	< 0.413	< 0.334	< 0.420	< 0.446	**0.455**	< 0.463	**0.461**	< 0.431	< 0.416
Arsenic	19	19	19	22.9	**21.5**	**20.1**	**14.5**	**15.5**	**9.72**	**11.3**	**20.6**	**21.7**	**32.1**	**23.6**	**8.63**	**13.5**
Barium	16,000	59,000	2,100	32.3	**81.5**	**40.1**	**53.1**	**25.5**	**27.8**	**42.5**	**29.7**	**31.4**	**17.3**	**75.7**	**35.3**	**41.1**
Beryllium	16	140	0.7	2	**1.91**	**1.49**	**0.907**	**1.1**	**1.03**	**1.51**	**1.8**	**1.73**	**2.71**	**1.95**	**0.797**	**1.12**
Cadmium	78	78	2	ND	**0.693**	**0.965**	**0.648**	**0.281**	**0.295**	**0.336**	**0.522**	**0.331**	**0.924**	**1.43**	**0.411**	**0.44**
Calcium	NLE	NLE	NLE	921	**1590**	**1430**	**1120**	**647**	**583**	**762**	**842**	**736**	**964**	**1340**	**528**	**854**
Chromium	NLE	NLE	NLE	269	**221**	**170**	**101**	**124**	**129**	**84.7**	**206**	**210**	**338**	**211**	**68.6**	**96.8**
Cobalt	1,600	590	90	2.5	**1.76**	**2.2**	**2.91**	**2.41**	**1.92**	**2.56**	**2.35**	**1.58**	**1.32**	**2.03**	**4.18**	**3.27**
Copper	3,100	45,000	11,000	8	**138**	**88.6**	**181**	**4.44**	**4.51**	**3.31**	**14.2**	**16.4**	**20.9**	**34**	**3.68**	**16.1**
Iron	NLE	NLE	NLE	55,800	**46200**	**39600**	**25600**	**39400**	**29000**	**35600**	**45500**	**39000**	**74100**	**45500**	**31800**	**33600**
Lead	400	800	90	19.5	**209**	**50.4**	**79.5**	**11.3**	**18.3**	**11.6**	**22.9**	**28.3**	**10.3**	**60.1**	**13.4**	**28.3**
Magnesium	NLE	NLE	NLE	7,230	**6580**	**5150**	**2950**	**2880**	**3060**	**3530**	**5950**	**5690**	**10500**	**6060**	**1210**	**3260**
Manganese	11,000	5,900	65	90.7	**80**	**53.5**	**123**	**31.9**	**31.7**	**80**	**25.5**	**55.6**	**42.7**	**44.1**	**89.5**	**64.6**
Mercury	23	65	0.1	ND	**0.064**	**0.099**	**0.162**	**0.094**	**0.243**	**0.084**	**0.131**	**0.047**	< 0.026	**0.378**	**0.047**	**0.141**
Nickel	1,600	23,000	48	8.4	**7.65**	**8.68**	**10.4**	**9.02**	**6.54**	**8.89**	**9.27**	**6.15**	**7.82**	**10.6**	**10.5**	**9.53**
Potassium	NLE	NLE	NLE	15,400	**14800**	**11400**	**6190**	**5850**	**6300**	**6720**	**13600**	**12000**	**24100**	**13500**	**2580**	**6920**
Selenium	390	5,700	11	1.9	< 0.682	< 0.622	**0.698**	**0.706**	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	< 0.659	< 0.646	< 0.624
Silver	390	5,700	1	1.1	< 0.682	< 0.622	**0.719**	< 0.619	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	**0.856**	< 0.646	< 0.624
Sodium	NLE	NLE	NLE	51.6	**234**	**130**	**146**	**174**	**120**	**169**	**142**	**136**	**181**	**117**	**131**	**243**
Thallium	5	79	3	ND	< 0.682	< 0.622	< 0.608	< 0.619	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	< 0.659	< 0.646	< 0.624
Vanadium	78	1,100	NA	94.1	**101**	**82**	**59.7**	**95.5**	**75.9**	**50.6**	**96.8**	**101**	**134**	**98.7**	**75**	**63.2**
Zinc	23,000	110,000	930	81.4	**316**	**94.5**	**402**	**47.2**	**62**	**92.3**	**50**	**65**	**69.7**	**102**	**49**	**61.3**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-106	B-107	B-108	B-109	B-110	B-111	B-112	B-112 Dup	B-113	B-114	B-115	B-116
Sample Date					09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/08/99	09/08/99	09/08/99
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					4774.09	4774.11	4774.13	4774.15	4774.17	4774.19	4774.21	4774.25	4774.23	4777.03	4777.05	4777.07
Methylene Chloride	34000	97,000	10	--	< 1100	< 580	< 540	< 560	< 510	< 590	**1600**	< 730	< 600	< 570	< 550	< 570
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 530	< 290	< 270	< 280	< 260	< 290	< 370	< 360	< 300	< 280	< 270	< 280
Benzene	2,000	5,000	5	--	< 530	< 290	< 270	< 280	< 260	< 290	< 370	< 360	< 300	< 280	< 270	< 280
Toluene	6.30E+06	9.10E+07	7,000	--	< 530	< 290	< 270	< 280	< 260	< 290	< 370	< 360	< 300	< 280	< 270	< 280
Acetone	7.00E+07	NLE	19,000	--	< 1100	< 580	< 540	< 560	< 510	< 590	< 740	< 730	< 600	< 570	< 550	< 570
Vinyl Chloride	700	2,000	5	--	< 1600	< 870	< 810	< 830	< 770	< 880	< 1100	< 1100	< 900	< 850	< 820	< 850
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 1100	< 580	< 540	< 560	< 510	< 590	< 740	< 730	< 600	< 570	< 550	< 570
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 1600	< 870	< 810	< 830	< 770	< 880	< 1100	< 1100	< 900	< 850	< 820	< 850
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 1100	< 580	< 540	< 560	< 510	< 590	< 740	< 730	< 600	< 570	< 550	< 570
TICs	NLE	NLE	NLE	--	ND	**2100**	ND	ND	ND	**3400**	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4774.08	4774.10	4774.12	4774.14	4774.16	4774.18	4774.20	4774.24	4774.22	4777.02	4777.04	4777.06
Naphthalene	6,000	17,000	25,000	--	< 1200	< 1100	< 1100	< 1200	**200** J	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1200	< 1100	< 1100	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1200	< 1100	< 1100	< 1200	**120** J	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100
Acenaphthylene	NLE	3.00E+08	NLE	--	**140** J	< 1100	< 1100	< 1200	**650** J	**150** J	< 1200	**100** J	< 1100	< 1100	< 1000	< 1100
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1200	< 1100	< 1100	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	**530** J	< 1000	< 1100
Dibenzofuran	NLE	NLE	NLE	--	< 1200	< 1100	< 1100	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	**330** J	< 1000	< 1100
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1200	< 1100	**180** J	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1200	< 1100	< 1100	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	**800** J	< 1000	< 1100
Phenanthrene	NLE	3.00E+08	NLE	--	**160** J	< 1100	< 1100	< 1200	**760** J	**420** J	< 1200	< 1000	< 1100	**8300**	**350** J	**340** J
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1200	< 1100	< 1100	< 1200	**350** J	< 1100	**150** J	**190** J	< 1100	**2200**	< 1000	< 1100
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**1400** B	**660** JB	**1700** B	**1500** B	**1200** B	**520** JB	**1500** B	**1400** B	**2300** B	**730** JB	**640** JB	**1400** B
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**350** J	< 1100	< 1100	< 1200	**2100**	**630** J	**450** J	**690** J	< 1100	**9300**	**580** J	**600** J
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**430** J	< 1100	< 1100	< 1200	**2400**	**740** J	**1000** J	**1300**	< 1100	**7100**	**720** J	**640** J
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1200	< 1100	< 1100	< 1200	< 1100	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100
Benzo(a)anthracene	600	2,000	800	--	**240** J	< 1100	< 1100	< 1200	**1600**	**370** J	**750** J	**910** J	< 1100	**4100**	**280** J	**310** J
Chrysene	62,000	230,000	80,000	--	**350** J	< 1100	< 1100	< 1200	**1900**	**500** J	**1800**	**2100**	< 1100	**3900**	**400** J	**410** J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**260** JB	**310** JB	**270** JB	**300** JB	**230** JB	**200** JB	**180** JB	**380** JB	**240** JB	**300** JB	**190** JB	**310** JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**370** J	< 1100	< 1100	< 1200	**2500**	**390** J	**2200**	**2300**	< 1100	**3100**	**270** J	**420** J
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**270** J	< 1100	< 1100	< 1200	**2200**	**320** J	**1300**	**1600**	< 1100	**2800**	**290** J	**320** J
Benzo(a)pyrene	200	200	200	--	**320** J	< 1100	< 1100	< 1200	**2600**	**390** J	**830** J	**930** J	< 1100	**3300**	**300** J	**330** J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1200	< 1100	< 1100	< 1200	**960** J	**200** J	**450** J	**480** J	< 1100	**1700**	**160** J	< 1100
Dibenz(a,h)anthracene	200	200	800	--	< 1200	< 1100	< 1100	< 1200	**350** J	< 1100	< 1200	**140** J	< 1100	**680** J	< 1000	< 1100
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1200	< 1100	< 1100	< 1200	**920** J	**220** J	**420** J	**440** J	< 1100	**1700**	**170** J	< 1100
TICs	NLE	NLE	NLE	--	**14830**	**12330**	**20530**	**57660**	**23420**	**14680**	**22850**	**32270**	**19870**	**34740**	**13400**	**19730**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.076**	**0.007**	< 0.0004	**0.81**	**0.064**	**0.095**	**0.022**	**0.014**	**0.069**	**0.062**	**0.012**	**0.013**
Dieldrin	0.04	0.2	0.003	--	< 0.0005	< 0.0006	< 0.0005	**0.002**	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0006
4,4'-DDD	3	13	4	--	**0.05**	**0.003**	< 0.0006	**1.031**	**0.084**	**0.062**	**0.057**	**0.042**	**0.138**	**0.008**	**0.085**	**0.019**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0006
4,4'-DDT	2	8	11	--	**0.085**	**0.007**	< 0.0012	**0.03**	**0.061**	**0.065**	**0.013**	**0.009**	**0.06**	**0.016**	**0.019**	**0.029**
gamma-Chlordane	0.2	1	0.05	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	**0.005**
alpha-Chlordane	0.2	1	0.05	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	**0.004**

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-106	B-107	B-108	B-109	B-110	B-111	B-112	B-112 Dup	B-113	B-114	B-115	B-116
Sample Date					09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/08/99	09/08/99	09/08/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**17900**	**22700**	**17800**	**18900**	**10200**	**14900**	**17400**	**10400**	**12000**	**13600**	**11000**	**12500**
Antimony	31	450	6	ND	< 0.461	< 0.456	< 0.448	< 0.431	< 0.384	< 0.431	< 0.486	< 0.447	< 0.467	< 0.499	< 0.434	< 0.453
Arsenic	19	19	19	22.9	**13.9**	**26**	**28.9**	**30.3**	**7.6**	**11.5**	**17.6**	**9.67**	**16.8**	**24.9**	**12.2**	**16.2**
Barium	16,000	59,000	2,100	32.3	**42.2**	**13.1**	**10.9**	**41.6**	**29.2**	**34.1**	**114**	**98.5**	**10.4**	**28.6**	**30.5**	**63.7**
Beryllium	16	140	0.7	2	**1.32**	**2.81**	**1.4**	**1.76**	**0.709**	**0.994**	**1.54**	**1.07**	**1.21**	**1.67**	**1.08**	**1.34**
Cadmium	78	78	2	ND	**0.443**	**0.84**	**0.269**	**0.835**	**0.348**	**0.299**	**0.563**	**0.335**	**0.324**	**0.516**	**0.195**	**0.493**
Calcium	NLE	NLE	NLE	921	**984**	**808**	**429**	**1230**	**574**	**722**	**1330**	**1200**	**592**	**850**	**1390**	**14200**
Chromium	NLE	NLE	NLE	269	**132**	**333**	**178**	**213**	**61.7**	**92**	**133**	**97.6**	**149**	**186**	**92.4**	**189**
Cobalt	1,600	590	90	2.5	**4.12**	**1.22**	**1.22**	**2.03**	**3.21**	**2.46**	**6.36**	**3.28**	**1.22**	**1.11**	**2.27**	**3.09**
Copper	3,100	45,000	11,000	8	**9.78**	**2.95**	**23.1**	**33.4**	**3.68**	**4.95**	**19.5**	**11.5**	**2.18**	**53.6**	**18.2**	**30.6**
Iron	NLE	NLE	NLE	55,800	**39500**	**66600**	**33800**	**43500**	**28800**	**29400**	**35100**	**24600**	**30500**	**41800**	**30800**	**41200**
Lead	400	800	90	19.5	**39.9**	**11.2**	**4.84**	**83.1**	**15.7**	**19**	**30.2**	**18.6**	**14.8**	**66.7**	**16.4**	**38.3**
Magnesium	NLE	NLE	NLE	7,230	**4200**	**9940**	**4880**	**6050**	**1260**	**3070**	**3670**	**2720**	**3900**	**5730**	**3450**	**5480**
Manganese	11,000	5,900	65	90.7	**123**	**33.7**	**31.7**	**63.5**	**71.1**	**59.7**	**51.9**	**25.5**	**29.6**	**50.6**	**62.1**	**785**
Mercury	23	65	0.1	ND	**0.051**	**0.046**	< 0.019	**0.068**	< 0.020	< 0.018	< 0.029	< 0.018	< 0.025	< 0.024	< 0.022	< 0.021
Nickel	1,600	23,000	48	8.4	**8.91**	**6.94**	**4.99**	**8.06**	**8.78**	**6.89**	**15.3**	**9.27**	**3.9**	**6.55**	**7.13**	**10.2**
Potassium	NLE	NLE	NLE	15,400	**9120**	**23200**	**9910**	**13500**	**2630**	**6430**	**7940**	**5880**	**8640**	**12300**	**7030**	**9190**
Selenium	390	5,700	11	1.9	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680
Silver	390	5,700	1	1.1	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680
Sodium	NLE	NLE	NLE	51.6	**143**	**138**	**100**	**93.3**	**75.9**	**107**	**223**	**148**	**48.2**	**93.9**	**191**	**346**
Thallium	5	79	3	ND	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680
Vanadium	78	1,100	NA	94.1	**71.9**	**140**	**85.3**	**104**	**67.6**	**54.5**	**70.2**	**49.5**	**67.7**	**73**	**50.9**	**70.3**
Zinc	23,000	110,000	930	81.4	**71.3**	**62.8**	**43**	**129**	**54.6**	**42.2**	**99.6**	**60.6**	**35.8**	**99.8**	**73**	**126**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = not analyzed
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
DUP = field duplicate sample
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria
Shaded cells = concentration exceeds all criteria
Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-117	B-118	B-119	B-120	B-121	B-122	B-123	B-124	B-125	B-126	B-127	B-128
Sample Date					09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/15/99	09/15/99
Volatile Organic Compounds (VOCs) (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					4777.09	4777.11	4777.13	4777.15	4777.17	4777.19	4777.21	4777.23	4777.25	4777.27	4790.03	4790.05
Methylene Chloride	34000	97,000	10	--	< 580	< 600	< 550	**290** J	**360** J	**350** J	**2500**	**1200**	**710**	**5700**	< 600	< 730
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 290	< 300	< 270	< 280	< 300	< 290	< 300	< 290	< 260	< 280	< 300	< 370
Benzene	2,000	5,000	5	--	< 290	< 300	< 270	< 280	< 300	< 290	< 300	< 290	< 260	< 280	< 300	< 370
Toluene	6.30E+06	9.10E+07	7,000	--	< 290	< 300	< 270	< 280	< 300	< 290	< 300	< 290	< 260	< 280	< 300	< 370
Acetone	7.00E+07	NLE	19,000	--	< 580	< 600	< 550	< 550	< 590	< 570	< 590	< 580	< 530	< 570	< 600	< 730
Vinyl Chloride	700	2,000	5	--	< 860	< 910	< 820	< 830	< 890	< 860	< 890	< 870	< 790	< 850	< 900	< 1100
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 580	< 600	< 550	< 550	< 590	< 570	< 590	< 580	< 530	< 570	< 600	< 730
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 860	< 910	< 820	< 830	< 890	< 860	< 890	< 870	< 790	< 850	< 900	< 1100
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 580	< 600	< 550	< 550	< 590	< 570	< 590	< 580	< 530	< 570	< 600	< 730
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4777.08	4777.10	4777.12	4777.14	4777.16	4777.18	4777.20	4777.22	4777.24	4777.26	4790.02	4790.04
Naphthalene	6,000	17,000	25,000	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	**120** J	< 1000	< 1200	< 5900	**670** J	< 5300
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100	< 1000	< 1200	< 5900	< 1100	< 5300
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1100	< 1200	< 5000	**180** J	**240** J	< 12000	< 1100	< 1000	< 1200	< 5900	**390** J	< 5300
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1100	< 1200	< 5000	< 1100	**7200** JD	< 1100	< 1000	< 1200	< 5900	**1600**	< 5300	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1100	< 1200	< 5000	< 1100	**190** J	< 12000	< 1100	< 1000	< 1200	**3200** JD	**840** J	< 5300
Dibenzofuran	NLE	NLE	NLE	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100	< 1000	< 1200	< 5900	**460** J	< 5300
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100	< 1000	< 1200	< 5900	< 1100	< 5300
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1100	< 1200	< 5000	< 1100	**260** J	**1700** JD	< 1100	< 1000	< 1200	**1000** JD	**1000** J	< 5300
Phenanthrene	NLE	3.00E+08	NLE	--	**280** J	< 1200	< 5000	**250** J	**540** J	**15000** D	**470** J	**170** J	**220** J	**6400** D	**9800**	< 5300
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1100	< 1200	< 5000	< 1100	< 1100	**3500** JD	< 1100	< 1000	< 1200	**1600** JD	**3400**	< 5300
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**450** JB	**600** JB	**510** JBD	**550** JB	**1400** B	**1400** JBD	**1900** B	**1600** B	**1800** B	**1800** JBD	**550** JB	**850** JBD
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**590** J	< 1200	< 5000	**320** J	< 1100	**13000** D	**220** J	**190** J	**430** J	**6300** D	**32000** D	< 5300
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**590** J	< 1200	**730** JD	**440** J	< 1100	**28000** D	**210** J	**250** J	**380** J	**12000** D	**29000** D	< 5300
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100	< 1000	< 1200	< 5900	< 1100	< 5300
Benzo(a)anthracene	600	2,000	800	--	**300** J	< 1200	< 5000	**220** J	< 1100	**11000** JD	< 1100	**120** J	**180** J	**5400** JD	**13000**	< 5300
Chrysene	62,000	230,000	80,000	--	**370** J	< 1200	< 5000	**310** J	< 1100	**14000** D	**140** J	**180** J	**240** J	**7200** D	**11000**	< 5300
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**300** JB	**150** JB	**1500** JBD	**150** JB	**340** JB	< 12000	**140** JB	**180** JB	**230** JB	< 5900	**190** JB	< 5300
Benzo(b)fluoranthene	600	2,000	2,000	--	**310** J	< 1200	< 5000	**170** J	< 1100	**7700** JD	< 1100	**130** J	**210** J	**3700** JD	**11000**	< 5300
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**270** J	< 1200	< 5000	**180** J	< 1100	**8500** JD	< 1100	**100** J	**200** J	**3300** JD	**9100**	< 5300
Benzo(a)pyrene	200	200	200	--	**300** J	< 1200	< 5000	**210** J	< 1100	**11000** JD	< 1100	**140** J	**190** J	**5500** JD	**12000**	< 5300
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	**130** J	< 1200	< 5000	< 1100	< 1100	**2700** JD	< 1100	< 1000	< 1200	**1800** JD	**4400**	< 5300
Dibenz(a,h)anthracene	200	200	800	--	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100	< 1000	< 1200	**780** JD	**2000**	< 5300
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	**120** J	< 1200	< 5000	< 1100	< 1100	**3100** JD	< 1100	< 1000	< 1200	**2000** JD	**3700**	< 5300
TICs	NLE	NLE	NLE	--	**31460**	**43390**	**5300**	**14250**	**49390**	**108500**	**30920**	**24650**	**40530**	**62400**	**46000**	**16700**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	2	9	18	--	**0.131**	**0.015**	**0.052**	< 0.0004	**0.041**	**0.059**	**0.015**	< 0.0004	**0.005**	< 0.0005	**0.019**	**0.007**
Dieldrin	0.04	0.2	0.003	--	< 0.0006	< 0.0006	**0.002**	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005
4,4'-DDD	3	13	4	--	**0.183**	**0.024**	**0.023**	**0.007**	**0.068**	**0.057**	**0.018**	< 0.0006	**0.005**	**0.036**	**0.013**	**0.004**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005
4,4'-DDT	2	8	11	--	**0.027**	**0.013**	**0.103**	**0.006**	**0.02**	**0.057**	**0.003**	< 0.0011	**0.005**	**0.064**	**0.021**	**0.008**
gamma-Chlordane	0.2	1	0.05	--	< 0.0006	< 0.0006	**0.005**	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005
alpha-Chlordane	0.2	1	0.05	--	< 0.0006	< 0.0006	**0.003**	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-117	B-118	B-119	B-120	B-121	B-122	B-123	B-124	B-125	B-126	B-127	B-128
Sample Date					09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/15/99	09/15/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**10800**	**17200**	**7840**	**11100**	**10200**	**19500**	**12000**	**10500**	**15100**	**7010**	**10500**	**13300**
Antimony	31	450	6	ND	< 0.438	< 0.463	**0.571**	< 0.424	< 0.456	< 0.488	< 0.358	< 0.367	< 0.498	< 0.470	**16.7**	< 0.444
Arsenic	19	19	19	22.9	**11.8**	**24.7**	**5.11**	**9.25**	**9.15**	**38.8**	**24**	**9.92**	**22.1**	**9.23**	**20.7**	**25.4**
Barium	16,000	59,000	2,100	32.3	**27.6**	**19.3**	**50.1**	**26.2**	**23.2**	**35.5**	**28.3**	**24.3**	**24.5**	**24.8**	**122**	**22.8**
Beryllium	16	140	0.7	2	**1.27**	**1.15**	**0.397**	**1.03**	**1.08**	**2.31**	**1.69**	**1.02**	**2.03**	**0.691**	**1.62**	**1.17**
Cadmium	78	78	2	ND	**2.26**	< 0.116	**0.229**	**0.181**	**0.255**	**0.705**	**0.39**	**0.201**	**0.485**	**0.283**	**0.523**	**0.394**
Calcium	NLE	NLE	NLE	921	**1530**	**773**	**6010**	**957**	**936**	**1800**	**1820**	**1610**	**2460**	**2690**	**13900**	**1480**
Chromium	NLE	NLE	NLE	269	**124**	**159**	**41**	**81.7**	**84.7**	**276**	**176**	**92.4**	**215**	**51.1**	**140**	**189**
Cobalt	1,600	590	90	2.5	**5.14**	**1.08**	**9.12**	**2.5**	**2.45**	**1.45**	**2.32**	**2.16**	**1.47**	**2.5**	**27.4**	**0.802**
Copper	3,100	45,000	11,000	8	**38.6**	**15.2**	**60**	**14.3**	**16.4**	**41.9**	**43.5**	**14.1**	**14.4**	**20**	**277**	**21.3**
Iron	NLE	NLE	NLE	55,800	**33600**	**31100**	**17900**	**30800**	**32500**	**63500**	**46100**	**30200**	**55200**	**22200**	**34000**	**44100**
Lead	400	800	90	19.5	**47**	**15.9**	**57.1**	**18.7**	**14.2**	**38.8**	**22**	**11.6**	**23.6**	**32**	**181**	**18.1**
Magnesium	NLE	NLE	NLE	7,230	**3820**	**4600**	**4750**	**3240**	**3270**	**8570**	**5590**	**3180**	**7120**	**2290**	**4760**	**5710**
Manganese	11,000	5,900	65	90.7	**89.8**	**34.2**	**162**	**68.5**	**63.6**	**48.6**	**67.6**	**135**	**70.1**	**86.6**	**1110**	**38**
Mercury	23	65	0.1	ND	< 0.022	< 0.027	< 0.022	< 0.021	< 0.022	< 0.023	< 0.023	**0.033**	< 0.028	**0.029**	**0.047**	**0.032**
Nickel	1,600	23,000	48	8.4	**14.1**	**4.83**	**18.3**	**7.84**	**7.94**	**9.67**	**6.8**	**6.8**	**7.39**	**6.93**	**29.9**	**5.64**
Potassium	NLE	NLE	NLE	15,400	**7840**	**8370**	**1400**	**6470**	**6600**	**18400**	**12900**	**6250**	**15900**	**3920**	**4990**	**12900**
Selenium	390	5,700	11	1.9	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537	< 0.550	< 0.747	< 0.705	< 0.586	**1.05**
Silver	390	5,700	1	1.1	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537	< 0.550	< 0.747	< 0.705	< 0.586	< 0.666
Sodium	NLE	NLE	NLE	51.6	**190**	**188**	**433**	**154**	**90.8**	**160**	**416**	**367**	**104**	**126**	**268**	**251**
Thallium	5	79	3	ND	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537	< 0.550	< 0.747	< 0.705	< 0.586	< 0.666
Vanadium	78	1,100	NA	94.1	**57.7**	**77.5**	**39.6**	**51.3**	**50.1**	**116**	**44.6**	**50.5**	**65.1**	**39.5**	**52.3**	**69.4**
Zinc	23,000	110,000	930	81.4	**226**	**77.4**	**144**	**53.5**	**46**	**106**	**83.7**	**42.9**	**68.8**	**54.7**	**725**	**66.3**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-129		B-130		B-131		B-132		B-133		B-134		B-134 Dup		B-135		B-136		B-137		B-138		B-139	
Sample Date					09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99	
Volatile Organic Compounds (VOCs) (µg/kg)																												
Lab Sample ID (VOCs only collected 24 in. bgs)					4790.07		4790.09		4790.11		4790.13		4790.15		4790.17		4790.29		4790.19		4790.21		4790.23		4790.25		4790.27	
Methylene Chloride	34000	97,000	10	--	< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660		< 550		< 600		< 690	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330		< 270		< 300		< 350	
Benzene	2,000	5,000	5	--	< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330		< 270		< 300		< 350	
Toluene	6.30E+06	9.10E+07	7,000	--	< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330		< 270		< 300		< 350	
Acetone	7.00E+07	NLE	19,000	--	< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660		< 550		< 600		< 690	
Vinyl Chloride	700	2,000	5	--	< 910		< 980		< 960		< 980		< 910		< 960		< 850		< 940		< 990		< 820		< 900		< 1000	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660		< 550		< 600		< 690	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 910		< 980		< 960		< 980		< 910		< 960		< 850		< 940		< 990		< 820		< 900		< 1000	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660		< 550		< 600		< 690	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																												
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4790.06		4790.08		4790.10		4790.12		4790.14		4790.16		4790.28		4790.18		4790.20		4790.22		4790.24		4790.26	
Naphthalene	6,000	17,000	25,000	--	< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Acenaphthylene	NLE	3.00E+08	NLE	--	**340**	J	< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1600		< 1100		**660**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Dibenzofuran	NLE	NLE	NLE	--	< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1600		< 1100		< 5600		**180**	J	< 5300		< 1100		**440**	J	< 1100		< 1100		< 1200		**270**	J	< 1100	
Fluorene	2.30E+06	2.40E+07	170,000	--	**170**	J	< 1100		**570**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Phenanthrene	NLE	3.00E+08	NLE	--	**1400**	J	< 1100		**7800**	D	< 1200		< 5300		< 1100		**160**	J	< 1100		< 1100		**310**	J	< 1200		**230**	J
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	**310**	J	< 1100		**1700**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**750**	JB	**1400**	B	**1300**	JBD	**1400**	B	**2700**	JBD	**1300**	B	**2100**	B	**1700**	B	**740**	JB	**1600**	B	**2700**	B	**730**	JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**2100**		< 1100		**16000**	D	**180**	J	< 5300		**180**	J	**290**	J	< 1100		**120**	J	**550**	J	< 1200		**710**	J
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**2200**		< 1100		**14000**	D	**190**	J	< 5300		**230**	J	**340**	J	< 1100		**120**	J	**510**	J	< 1200		**710**	J
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Benzo(a)anthracene	600	2,000	800	--	**1200**	J	< 1100		**7500**	D	< 1200		< 5300		**120**	J	**180**	J	< 1100		< 1100		**280**	J	< 1200		**410**	J
Chrysene	62,000	230,000	80,000	--	**1400**	J	< 1100		**8500**	D	**140**	J	< 5300		**180**	J	**230**	J	< 1100		< 1100		**330**	J	< 1200		**470**	J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**300**	JB	**160**	JB	**2000**	JBD	**150**	JB	< 5300		**140**	JB	**240**	JB	**260**	JB	**200**	JB	**240**	JB	**250**	JB	**230**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**900**	J	< 1100		**9500**	D	< 1200		< 5300		**140**	J	**160**	J	< 1100		< 1100		**270**	J	< 1200		**390**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**1000**	J	< 1100		**8000**	D	< 1200		< 5300		**120**	J	**180**	J	< 1100		< 1100		**240**	J	< 1200		**410**	J
Benzo(a)pyrene	200	200	200	--	**1200**	J	< 1100		**8600**	D	**120**	J	< 5300		**150**	J	**190**	J	< 1100		< 1100		**310**	J	< 1200		**430**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	**580**	J	< 1100		**3000**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		**160**	J	< 1200		**210**	J
Dibenz(a,h)anthracene	200	200	800	--	**160**	J	< 1100		**920**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100		< 1200		< 1200		< 1100	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	**650**	J	< 1100		**2800**	JD	< 1200		< 5300		< 1100		**120**	J	< 1100		< 1100		**180**	J	< 1200		**220**	J
TICs	NLE	NLE	NLE	--	**18900**		**9850**		**26800**		**14150**		**10200**		**24440**		**20820**		**11790**		**15380**		**17470**		**20140**		**25080**	
Pesticides/PCBs (mg/kg)																												
4,4'-DDE	2	9	18	--	**0.01**		< 0.0005		**0.064**		**0.008**		**0.011**		**0.0017**		**0.014**		< 0.0005		**0.03**		**0.011**		**0.01**		**0.111**	
Dieldrin	0.04	0.2	0.003	--	< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDD	3	13	4	--	**0.022**		< 0.0007		**0.067**		**0.007**		**0.009**		**0.014**		**0.012**		< 0.0007		**0.013**		**0.009**		**0.013**		**0.069**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDT	2	8	11	--	**0.013**		< 0.0013		**0.313**		**0.004**		**0.021**		**0.012**		**0.012**		< 0.0013		**0.008**		**0.012**		**0.005**		**0.03**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006	
alpha-Chlordane	0.2	1	0.05	--	< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-129	B-130	B-131	B-132	B-133	B-134	B-134 Dup	B-135	B-136	B-137	B-138	B-139
Sample Date					09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**16000**	**16500**	**5600**	**17800**	**17400**	**15300**	**14100**	**13100**	**13600**	**18100**	**12300**	**12400**
Antimony	31	450	6	ND	< 0.503	< 0.478	**0.793**	< 0.444	< 0.463	< 0.474	< 0.447	< 0.488	< 0.449	< 0.480	< 0.368	**1.68**
Arsenic	19	19	19	22.9	**16.1**	**24.1**	**6.7**	**28**	**26.9**	**20.6**	**50.6**	**21.1**	**17**	**22.2**	**15.4**	**38.6**
Barium	16,000	59,000	2,100	32.3	**47.9**	**32.4**	**45.9**	**33.8**	**92.3**	**40.2**	**39.1**	**31.4**	**35.6**	**34.6**	**38**	**133**
Beryllium	16	140	0.7	2	**1.59**	**1.85**	**0.574**	**2.07**	**2.01**	**1.59**	**1.69**	**1.05**	**1.47**	**2.19**	**1.26**	**1.09**
Cadmium	78	78	2	ND	**0.426**	**0.288**	**0.745**	**0.34**	**0.837**	**0.626**	**0.819**	**0.558**	**0.46**	**0.453**	**0.627**	**25.2**
Calcium	NLE	NLE	NLE	921	**6480**	**1190**	**2500**	**1640**	**1880**	**1760**	**1650**	**1250**	**1260**	**1420**	**2120**	**1530**
Chromium	NLE	NLE	NLE	269	**193**	**221**	**40.6**	**241**	**222**	**177**	**187**	**134**	**151**	**204**	**122**	**215**
Cobalt	1,600	590	90	2.5	**3.38**	**1.03**	**4.55**	**1.37**	**1.66**	**2.13**	**2.23**	**2.87**	**2.86**	**1.6**	**3.43**	**4.2**
Copper	3,100	45,000	11,000	8	**17.2**	**21.6**	**60.6**	**20.5**	**49.5**	**45.6**	**49.7**	**97.6**	**316**	**21.4**	**27.2**	**243**
Iron	NLE	NLE	NLE	55,800	**48600**	**46300**	**15100**	**52200**	**47600**	**41400**	**45200**	**33700**	**36900**	**52500**	**35000**	**132000**
Lead	400	800	90	19.5	**26.6**	**38.6**	**126**	**26.5**	**77.2**	**93.2**	**79.5**	**442**	**59.8**	**48.4**	**46**	**1090**
Magnesium	NLE	NLE	NLE	7,230	**5420**	**6440**	**1440**	**7370**	**6790**	**5810**	**5390**	**3410**	**4550**	**7510**	**4410**	**4110**
Manganese	11,000	5,900	65	90.7	**583**	**38.9**	**136**	**67.4**	**149**	**97.6**	**79.6**	**175**	**54.8**	**50**	**79.4**	**332**
Mercury	23	65	0.1	ND	< 0.034	< 0.027	**0.094**	< 0.024	**0.156**	**0.031**	< 0.023	< 0.024	**0.047**	**0.083**	**0.06**	**0.078**
Nickel	1,600	23,000	48	8.4	**10.1**	**5.28**	**9.94**	**6.64**	**7.49**	**8.27**	**7.45**	**10.4**	**8.54**	**6.92**	**9.93**	**13.1**
Potassium	NLE	NLE	NLE	15,400	**10700**	**13800**	**1950**	**16000**	**15000**	**11500**	**11700**	**6710**	**9740**	**17500**	**8520**	**8990**
Selenium	390	5,700	11	1.9	< 0.755	< 0.716	< 0.696	**0.918**	< 0.694	< 0.711	< 0.670	**1.23**	< 0.673	< 0.721	< 0.552	**1.27**
Silver	390	5,700	1	1.1	< 0.755	< 0.716	< 0.696	< 0.667	< 0.694	< 0.711	< 0.670	< 0.731	< 0.673	< 0.721	< 0.552	**1.33**
Sodium	NLE	NLE	NLE	51.6	**155**	**121**	**120**	**123**	**153**	**138**	**119**	**88.7**	**181**	**134**	**166**	**348**
Thallium	5	79	3	ND	< 0.755	< 0.716	< 0.696	< 0.667	< 0.694	< 0.711	< 0.670	< 0.731	< 0.673	< 0.721	< 0.552	< 0.734
Vanadium	78	1,100	NA	94.1	**83.4**	**102**	**32.3**	**106**	**106**	**84.4**	**89.6**	**65.1**	**78**	**110**	**74.1**	**90.6**
Zinc	23,000	110,000	930	81.4	**129**	**58**	**149**	**78.6**	**250**	**125**	**142**	**283**	**74.5**	**79.6**	**94.8**	**6530**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-140		B-141		B-142		B-143		B-144		B-145		B-146		B-147		B-148	
Sample Date					09/20/99		09/20/99		09/20/99		09/20/99		09/20/99		09/20/99		09/20/99		09/20/99		09/20/99	
Volatile Organic Compounds (VOCs) (µg/kg)																						
Lab Sample ID (VOCs only collected 24 in. bgs)					4793.03		4793.05		4793.07		4793.09		4793.11		4793.13		4793.15		4793.17		4793.19	
Methylene Chloride	34000	97,000	10	--	**1500**		**810**		**580**		**500**	J	**410**	J	< 590		< 600		< 580		< 340	
cis-1,2-Dichloroethene	230,000	560,000	300	--	< 300		< 290		< 290		< 300		< 300		< 300		< 300		< 290		< 330	
Benzene	2,000	5,000	5	--	< 300		< 290		< 290		< 300		< 300		< 300		< 300		< 290		< 330	
Toluene	6.30E+06	9.10E+07	7,000	--	< 300		< 290		< 290		< 300		< 300		< 300		< 300		< 290		< 330	
Acetone	7.00E+07	NLE	19,000	--	< 600		< 580		< 580		< 610		< 590		< 590		< 600		< 580		< 660	
Vinyl Chloride	700	2,000	5	--	< 900		< 870		< 870		< 910		< 890		< 890		< 890		< 880		< 980	
Ethylbenzene	7.80E+06	1.10E+08	13,000	--	< 600		< 580		< 580		< 610		< 590		< 590		< 600		< 580		< 660	
m+p-Xylenes	1.20E+07	1.70E+08	19,000	--	< 900		< 870		< 870		< 910		< 890		< 890		< 890		< 880		< 980	
o-Xylene	1.20E+07	1.70E+08	19,000	--	< 600		< 580		< 580		< 610		< 590		< 590		< 600		< 580		< 660	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																						
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4793.02		4793.04		4793.06		4793.08		4793.10		4793.12		4793.14		4793.16		4793.18	
Naphthalene	6,000	17,000	25,000	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
n-Nitrosodiphenylamine	99,000	390,000	400	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
2-Methylnaphthalene	2.30E+05	2.40E+06	8,000	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Acenaphthylene	NLE	3.00E+08	NLE	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Acenaphthene	3.40E+06	3.70E+07	1.10E+05	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Dibenzofuran	NLE	NLE	NLE	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Diethylphthalate	4.90E+07	5.50E+08	88,000	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Fluorene	2.30E+06	2.40E+07	170,000	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Phenanthrene	NLE	3.00E+08	NLE	--	**280**	J	**270**	J	**250**	J	< 1200		< 1000		< 1200		**410**	J	< 1100		< 1100	
Anthracene	1.70E+07	3.00E+07	2.40E+06	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Di-n-butylphthalate	6.10E+06	6.80E+07	7.60E+05	--	**1500**	B	**520**	JB	**1500**	B	**520**	JB	**2400**	B	**2200**	B	**1700**	B	**1600**	B	**1100**	JB
Fluoranthene	2.30E+06	2.40E+07	1.30E+05	--	**410**	J	**430**	J	**400**	J	< 1200		< 1000		< 1200		**630**	J	< 1100		< 1100	
Pyrene	1.70E+06	1.80E+07	8.40E+05	--	**380**	J	**380**	J	**370**	J	< 1200		< 1000		< 1200		**650**	J	< 1100		< 1100	
Butylbenzylphthalate	1.20E+06	1.40E+07	2.30E+05	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Benzo(a)anthracene	600	2,000	800	--	**200**	J	**180**	J	**170**	J	< 1200		< 1000		< 1200		**350**	J	< 1100		< 1100	
Chrysene	62,000	230,000	80,000	--	**240**	J	**200**	J	**230**	J	< 1200		< 1000		< 1200		**400**	J	< 1100		< 1100	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	--	**210**	JB	**150**	JB	**260**	JB	**150**	JB	**200**	JB	**180**	JB	**190**	JB	**220**	JB	**220**	JB
Benzo(b)fluoranthene	600	2,000	2,000	--	**200**	J	**150**	J	**190**	J	< 1200		< 1000		< 1200		**290**	J	< 1100		< 1100	
Benzo(k)fluoranthene	6,000	23,000	25,000	--	**160**	J	**130**	J	**190**	J	< 1200		< 1000		< 1200		**290**	J	< 1100		< 1100	
Benzo(a)pyrene	200	200	200	--	**190**	J	**150**	J	**190**	J	< 1200		< 1000		< 1200		**340**	J	< 1100		< 1100	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		**160**	J	< 1100		< 1100	
Dibenz(a,h)anthracene	200	200	800	--	< 1200		< 1100		< 1200		< 1200		< 1000		< 1200		< 1200		< 1100		< 1100	
Benzo(g,h,i)perylene	3.80E+08	3.00E+07	NLE	--	< 1200		< 1100		130 J	J	< 1200		< 1000		< 1200		**180**	J	< 1100		< 1100	
TICs	NLE	NLE	NLE	--	**22040**		**13480**		**41090**		**11840**		**10840**		**12110**		**13960**		**10980**		**11680**	
Pesticides/PCBs (mg/kg)																						
4,4'-DDE	2	9	18	--	**0.01**		**0.003**		**0.029**		**0.032**		< 0.0004		< 0.0005		< 0.0005		**0.014**		**0.005**	
Dieldrin	0.04	0.2	0.003	--	< 0.0006		< 0.0006		**0.007**		< 0.0006		< 0.0006		< 0.0006		< 0.0006		**0.032**		**0.031**	
4,4'-DDD	3	13	4	--	**0.009**		**0.003**		**0.03**		**0.006**		< 0.0007		< 0.0007		< 0.0007		**0.018**		**0.008**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005	
4,4'-DDT	2	8	11	--	**0.016**		**0.003**		**0.023**		**0.036**		**0.002**		**0.002**		**0.057**		**0.079**		**0.026**	
gamma-Chlordane	0.2	1	0.05	--	< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005	
alpha-Chlordane	0.2	1	0.05	--	< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0006		< 0.0005		< 0.0005	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential DCSRS (1)	NJDEP Non-Residential DCSRS (1)	NJDEP Impact to Ground Water (2)	Weston 1995 Background (Main Post) (3)	B-140	B-141	B-142	B-143	B-144	B-145	B-146	B-147	B-148
Sample Date					09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99
Metals (mg/kg)													
Aluminum	78,000	NA	6,000	15,200	**12300**	**14100**	**13900**	**13600**	**13200**	**16600**	**15600**	**14800**	**8510**
Antimony	31	450	6	ND	< 0.474	< 0.449	< 0.529	< 0.412	< 0.429	< 0.487	< 0.415	< 0.363	< 0.442
Arsenic	19	19	19	22.9	**17.7**	**22.3**	**20.3**	**20**	**16.2**	**24**	**22.5**	**15.5**	**7.97**
Barium	16,000	59,000	2,100	32.3	**29**	**24.8**	**32.5**	**11.3**	**21.8**	**9.04**	**31.6**	**30.2**	**17.6**
Beryllium	16	140	0.7	2	**1.47**	**1.96**	**1.85**	**1.11**	**1.19**	**2.44**	**1.88**	**1.52**	**0.81**
Cadmium	78	78	2	ND	**0.379**	**0.54**	**0.555**	**0.233**	**0.282**	**0.514**	**0.526**	**0.562**	**0.34**
Calcium	NLE	NLE	NLE	921	**998**	**1830**	**1260**	**651**	**1570**	**515**	**1160**	**1540**	**2050**
Chromium	NLE	NLE	NLE	269	**162**	**207**	**193**	**148**	**134**	**269**	**214**	**144**	**69.6**
Cobalt	1,600	590	90	2.5	**1.6**	**1.29**	**1.31**	**0.77**	**1.2**	**0.664**	**1.43**	**2.42**	**2.2**
Copper	3,100	45,000	11,000	8	**23**	**10.2**	**28**	**12.4**	**13.6**	**6.31**	**17.5**	**4.5**	**7.79**
Iron	NLE	NLE	NLE	55,800	**36200**	**48500**	**42900**	**29900**	**29400**	**55000**	**46600**	**48200**	**27300**
Lead	400	800	90	19.5	**28.6**	**30**	**17.9**	**5.72**	**17.1**	**9.35**	**25.1**	**9.06**	**7.95**
Magnesium	NLE	NLE	NLE	7,230	**4960**	**6480**	**5480**	**3660**	**3830**	**7780**	**6440**	**4500**	**2250**
Manganese	11,000	5,900	65	90.7	**35.6**	**43.7**	**47.3**	**31.2**	**52.3**	**19.3**	**49.1**	**32.1**	**42.2**
Mercury	23	65	0.1	ND	**0.0061**	< 0.024	< 0.027	< 0.023	< 0.024	< 0.024	**0.061**	< 0.024	< 0.021
Nickel	1,600	23,000	48	8.4	**6.22**	**6.64**	**5.77**	**3.74**	**4.62**	**5.7**	**6.05**	**8.02**	**6.32**
Potassium	NLE	NLE	NLE	15,400	**10700**	**14700**	**12500**	**7330**	**7650**	**18800**	**14700**	**10800**	**4940**
Selenium	390	5,700	11	1.9	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Silver	390	5,700	1	1.1	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Sodium	NLE	NLE	NLE	51.6	**264**	**122**	**102**	**130**	**67.4**	**102**	**87.8**	**120**	**59.9**
Thallium	5	79	3	ND	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Vanadium	78	1,100	NA	94.1	**76**	**80**	**82.7**	**73**	**63.9**	**111**	**94.7**	**81.4**	**41.6**
Zinc	23,000	110,000	930	81.4	**50.6**	**80.3**	**98.3**	**42.2**	**59.5**	**57.5**	**67.4**	**54.1**	**36**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (DCSRS; N.J.A.C 7:26D, amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.

(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)

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

NJDEP criteria for total xylenes are used for xylene isomers (m+p, o)

µg/kg = micrograms per kilogram

mg/kg = milligrams per kilogram

in. = inches

bgs = below ground surface

B = Analyte detected in both sample and associated laboratory blank

D = Result from dilution of sample

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

NA = not analyzed

ND = not detected

NLE = No limit established

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

DUP = field duplicate sample

Detections are bolded.

Shaded cells = concentration exceeds NJDEP Impact to Ground Water Criteria

Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria

Shaded cells = concentration exceeds all criteria

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14
Sample Date					03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					3420.02	3420.04	3420.06	3420.08	3420.10	3420.12	3420.14	3420.16	3420.18	3424.03	3424.05	3424.07	3424.09	3424.11
Methylene Chloride	36,000	310,000	2.2	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560	< 680	< 530
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280	< 340	< 260
Benzene	1,100	5,400	0.2	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280	< 340	< 260
Toluene	500,000	4,500,000	59	--	< 270	< 420	< 310	< 400	< 650	< 290	< 400	< 310	< 310	< 350	< 230	< 280	< 340	< 260
Acetone	6,100,000	63,000,000	240	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560	< 680	< 530
Vinyl Chloride	60	1,700	0.0053	--	< 810	< 1300	< 940	< 1200	< 2000	< 870	< 1200	< 920	< 920	< 1100	< 680	< 830	< 1000	< 790
Ethylbenzene	5,400	27,000	1.5	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560	< 680	< 530
m+p-Xylenes	59,000	250,000	18	--	< 810	< 1300	< 940	< 1200	< 2000	< 870	< 1200	< 920	< 920	< 1100	< 680	< 830	< 1000	< 790
o-Xylene	69,000	300,000	19	--	< 540	< 840	< 620	< 810	< 1300	< 580	< 800	< 620	< 610	< 700	< 450	< 560	< 680	< 530
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	**4100**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3420.01	3420.03	3420.05	3420.07	3420.09	3420.11	3420.13	3420.15	3420.17	3424.02	3424.04	3424.06	3424.08	3424.10
Naphthalene	3,600	18,000	0.47	--	< 130	< 160	< 150	< 300	< 140	< 300	**140** J	**1200** D	**110** J	< 130	**280**	< 140	< 140	< 130
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 100	< 120	< 110	< 230	< 110	< 230	< 110	< 230	< 120	< 99	< 100	< 100	< 100	< 100
2-Methylnaphthalene	23,000	220,000	14	--	< 150	**83** J	< 170	< 340	< 160	< 340	< 77	**1100** D	**74** J	< 150	**210**	< 150	< 150	< 150
Acenaphthylene	NLE	NLE	NLE	--	< 110	**87** J	< 110	< 240	< 110	< 240	< 210	**320** D	**81** J	< 100	< 110	< 110	< 110	< 100
Acenaphthene	340,000	3,300,000	410	--	< 96	< 120	< 110	< 220	< 100	< 220	< 110	**610** D	**93** J	< 95	< 98	**73** J	< 99	< 95
Dibenzofuran	7,800	100,000	11	--	< 100	< 120	< 120	< 230	< 110	< 230	< 110	**560** D	< 120	< 100	< 100	< 110	< 110	< 100
Diethylphthalate	4,900,000	49,000,000	470	--	< 110	< 130	< 130	< 250	< 120	< 250	< 120	< 250	< 130	< 110	< 110	< 110	< 110	< 110
Fluorene	230,000	2,200,000	400	--	< 100	< 130	**72** J	< 240	< 110	< 240	< 96	**1800** D	**98** J	< 100	< 110	**58** J	< 110	< 100
Phenanthrene	NLE	NLE	NLE	--	**200**	**460**	**650**	< 240	**140**	**190** JD	**850**	**9000** D	**1100**	**150**	**120**	**540**	< 110	**57** J
Anthracene	1,700,000	17,000,000	4,200	--	< 110	< 130	**94** J	< 240	< 110	< 240	**120** J	**1200** D	**190**	< 100	< 110	**110** J	< 110	< 100
Di-n-butylphthalate	610,000	6,200,000	170	--	**4300** B	**6500** B	**2300** B	**7300** BD	**3400** B	**11000** BD	**3000** B	**1900** BD	**500** JB	**170** JB	**340** JB	**390** JB	**370** JB	**320** JB
Fluoranthene	230,000	2,200,000	7,000	--	**420**	**460**	**730**	< 240	**210**	**320** D	**990**	**6400** D	**1600**	**160**	**96** J	**700**	< 110	**110**
Pyrene	170,000	1,700,000	950	--	**300**	**500**	**750**	< 280	**170**	**290** D	**1000**	**5900** D	**1100**	**160**	**79** J	**430**	< 130	**80** J
Butylbenzylphthalate	260,000	910,000	200	--	< 140	< 170	< 160	< 310	< 150	< 310	< 150	< 310	< 170	< 140	< 140	< 140	< 140	< 140
Benzo(a)anthracene	150	2,100	10	--	**190**	**270**	**390**	< 240	**110** J	**210** JD	**470**	**3000** D	**640**	**130**	< 110	**220**	< 110	< 110
Chrysene	15,000	210,000	1100	--	**280**	**500**	**800**	< 310	**180**	**340** D	**1100**	**4300** D	**1100**	**260**	**95** J	**380**	< 140	**96** J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**170** B	**200** B	**88** JB	< 340	**130** JB	**140** JBD	**88** JB	**140** JBD	**150** JB	**98** JB	**67** JB	**90** JB	**85** JB	**73** JB
Benzo(b)fluoranthene	150	2,100	35	--	**100** J	**170**	**320**	< 300	**66** J	**210** JD	**450**	**1500** D	**610**	**160**	< 140	**190**	< 140	< 130
Benzo(k)fluoranthene	1,500	21,000	350	--	**200**	**280**	**290**	< 230	**140**	**210** JD	**380**	**2800** D	**650**	**300**	< 100	**190**	< 100	< 65
Benzo(a)pyrene	150	210	4	--	**210**	**290**	**460**	< 230	**120**	**230** JD	**560**	**2600** D	**740**	**230**	< 100	**250**	< 110	< 100
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	**120**	**190**	**250**	< 250	< 120	**130** JD	**310**	**1200** D	**370**	**160**	< 110	< 120	< 120	< 110
Dibenz(a,h)anthracene	15	210	11	--	< 130	< 160	< 150	< 300	< 140	< 290	< 150	< 300	< 160	< 130	< 130	< 140	< 140	< 130
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	**95** J	**190**	**250**	< 300	**78** J	**130** JD	**290**	**1300** D	**340**	**180**	< 130	< 140	< 140	< 130
TICs	NLE	NLE	NLE	--	**4170**	**1440**	**11410**	**3500**	**3170**	**10000**	**15500**	**20300**	**8560**	**3510**	**4760**	**5840**	**8330**	**7830**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.009**	**0.069**	**0.074**	**0.014**	**0.028**	**0.07**	**0.075**	**0.541**	**0.307**	**0.265**	**0.042**	**0.065**	**0.35**	**0.044**
Dieldrin	0.03	0.11	0.000061	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011	< 0.0059	< 0.0010
4,4'-DDD	2	7.2	0.01	--	**0.004**	**0.09**	**0.115**	**0.008**	**0.055**	**0.088**	**0.311**	**0.736**	**0.364**	**0.255**	**0.028**	**0.052**	**0.397**	**0.024**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011	< 0.0059	< 0.0010
4,4'-DDT	1.7	7	0.07	--	**0.035**	**0.223**	**0.202**	**0.081**	**0.084**	**0.306**	**0.113**	**0.5**	**0.271**	**0.203**	**0.078**	**0.154**	**0.504**	**0.067**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011	< 0.0059	< 0.0010
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0011	< 0.0012	< 0.0013	< 0.0012	< 0.0012	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0051	< 0.0011	< 0.0011	< 0.0059	< 0.0010

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) [1]	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background [2]	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14
Sample Date					03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/19/98	03/20/98	03/20/98	03/20/98	03/20/98	03/20/98
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**5642**	**6919**	**12820**	**9691**	**5612**	**6598**	**8075**	**5616**	**12110**	**4508**	**10700**	**5997**	**7942**	**2469**
Antimony	3.1	41	0.03	ND	**0.71**	**1.051**	**2.367**	**1.731**	**1.483**	**1.046**	**1.001**	**1.034**	**3.401**	**0.58**	**2.641**	**1.738**	**2.273**	**0.467**
Arsenic	0.61	2.4	0.0013	22.9	**5.558**	**10.87**	**12.76**	**10.61**	**11.11**	**9.919**	**17.43**	**6.688**	**38.02**	**7.287**	**12.19**	**7.383**	**13.66**	**1.655**
Barium	1,500	19,000	12	32.3	**26.94**	**35.36**	**49.88**	**60.55**	**85.09**	**44.48**	**74.22**	**289.3**	**60.36**	**54.95**	**42.85**	**50.36**	**65.44**	**10.62**
Beryllium	16	200	1.3	2	**0.535**	**0.461**	**1.18**	**0.555**	**0.664**	**0.4763**	**0.5101**	**0.6405**	**1.304**	**0.7108**	**1.462**	**0.7754**	**0.9925**	**0.2271**
Cadmium	7	80	0.05	ND	**1.307**	< 0.064	< 0.062	< 0.061	< 0.067	< 0.059	< 0.066	< 0.064	< 0.061	< 0.049	< 0.054	< 0.052	< 0.057	**0.0659**
Calcium	NLE	NLE	NLE	921	**172.2**	**251.3**	**320.3**	**383.6**	**488.9**	**338.2**	**223.3**	**453**	**594.4**	**376.9**	**333.2**	**205.5**	**360**	**81.68**
Chromium	12,000	150,000	2,800,000	269	**39.64**	**64.16**	**135.6**	**80.22**	**75.81**	**61.98**	**83.75**	**42.5**	**133.9**	**37.92**	**168.8**	**90.86**	**124.6**	**24.03**
Cobalt	2.3	30	0.02	2.5	**1.599**	**1.463**	**1.435**	**1.243**	**1.208**	**1.372**	**1.415**	**1.515**	**1.896**	**5.776**	**0.7841**	**0.5523**	**0.8438**	**0.3294**
Copper	310	4,100	2.2	8	**6.895**	**40.21**	**18.34**	**45.3**	**50.19**	**46.45**	**45.52**	**197.1**	**141.7**	**112**	**12.21**	**13.34**	**6.003**	**4.121**
Iron	5,500	72,000	27	55,800	**14940**	**18570**	**37620**	**45290**	**23110**	**19700**	**27560**	**13090**	**41770**	**13640**	**31460**	**16200**	**21030**	**4887**
Lead	400	800	NLE	19.5	**52.03**	**53.54**	**65.37**	**33.97**	**32.95**	**67.67**	**77.75**	**84.35**	**123.5**	**95.11**	**11.72**	**16.93**	**3.55**	**4.462**
Magnesium	NLE	NLE	NLE	7,230	**1257**	**1477**	**4207**	**2117**	**2073**	**1905**	**1914**	**1314**	**3514**	**745.9**	**4609**	**2133**	**2946**	**456.8**
Manganese	180	2,300	2.1	90.7	**51.87**	**17.21**	**21.31**	**25.55**	**16.93**	**22.75**	**22.02**	**35.4**	**32.09**	**24.13**	**10.6**	**9.861**	**7.919**	**5.807**
Mercury	1	4.3	0.0033	ND	**29.909**	**0.39**	**0.21**	**0.051**	**0.05**	**0.118**	**0.234**	**0.012**	**1.461**	**0.501**	**0.061**	**0.085**	**0.015**	**0.021**
Nickel	150	2,000	2	8.4	**4.266**	**5.328**	**6.129**	**5.36**	**4.669**	**5.057**	**5.464**	**4.738**	**8.985**	**13.03**	**4.273**	**2.672**	**3.231**	**1.82**
Potassium	NLE	NLE	NLE	15,400	**3509**	**3656**	**8666**	**5885**	**6901**	**5405**	**5755**	**4024**	**7195**	**1989**	**10140**	**4544**	**6153**	**1171**
Selenium	39	510	0.04	1.9	< 0.293	**0.885**	< 0.371	**0.429**	**1.159**	**0.709**	**1.033**	**0.394**	**1.374**	**0.589**	**0.505**	< 0.314	< 0.345	< 0.315
Silver	39	510	0.06	1.1	< 0.293	**1.571**	**1.699**	< 0.364	< 0.401	< 0.356	**0.581**	**1.013**	**1.493**	**0.548**	< 0.326	< 0.314	< 0.345	< 0.315
Sodium	NLE	NLE	NLE	51.6	**24.61**	**207.6**	**91.26**	**574.1**	**411.4**	**376.3**	**646.7**	**229.5**	**139**	**196.5**	**124.1**	**71.27**	**72.53**	**30.94**
Thallium	0.078	1	0.0011	ND	< 0.293	< 0.385	< 0.371	< 0.364	< 0.401	< 0.356	< 0.394	< 0.381	< 0.365	< 0.293	< 0.326	< 0.314	< 0.345	< 0.315
Vanadium	39	510	6.3	94.1	**22.45**	**32.82**	**65.1**	**58.32**	**29.18**	**31.03**	**40.81**	**30.22**	**54.67**	**21.2**	**48**	**16.35**	**13.61**	**12.98**
Zinc	2,300	31,000	29	81.4	**48.29**	**29.07**	**51.51**	**42.63**	**24.21**	**36.88**	**36.02**	**49.93**	**112.4**	**416.3**	**48.45**	**34.98**	**54.28**	**12.55**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21	B-22	B-23	B-24	B-25	B-26	B-27
Sample Date					03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					3424.13	3424.15	3424.17	3424.19	3424.21	3425.03	3425.25	3425.05	3425.07	3425.09	3425.11	3425.13	3425.15	3425.17
Methylene Chloride	36,000	310,000	2.2	--	< 1000	< 620	< 830	< 570	< 620	< 290	< 580	< 890	< 620	< 540	< 650	< 540	< 620	< 650
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270	< 330	< 270	< 310	< 320
Benzene	1,100	5,400	0.2	--	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270	< 330	< 270	< 310	< 320
Toluene	500,000	4,500,000	59	--	< 520	< 310	< 410	< 290	< 310	< 290	< 290	< 450	< 310	< 270	< 330	< 270	< 310	< 320
Acetone	6,100,000	63,000,000	240	--	< 1000	< 620	< 830	< 570	< 620	< 290	< 580	< 890	< 620	< 540	< 650	< 540	< 620	< 650
Vinyl Chloride	60	1,700	0.0053	--	< 1600	< 930	< 1200	< 860	< 930	< 860	< 860	< 1300	< 930	< 820	< 980	< 810	< 920	< 970
Ethylbenzene	5,400	27,000	1.5	--	< 1000	< 620	< 830	< 570	< 620	< 570	< 580	< 890	< 620	< 540	< 650	< 540	< 620	< 650
m+p-Xylenes	59,000	250,000	18	--	< 1600	< 930	< 1200	< 860	< 930	< 860	< 860	< 1300	< 930	< 820	< 980	< 810	< 920	< 970
o-Xylene	69,000	300,000	19	--	< 1000	< 620	< 830	< 570	< 620	< 570	< 580	< 890	< 620	< 540	< 650	< 540	< 620	< 650
TICs	NLE	NLE	NLE	--	**7800**	ND	**6600**	ND	ND	**32000**	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3424.12	3424.14	3424.16	3424.18	3424.20	3425.02	3425.24	3425.04	3425.06	3425.08	3425.10	3425.12	3425.14	3425.16
Naphthalene	3,600	18,000	0.47	--	**51** J	< 160	< 150	< 160	< 150	< 130	< 140	< 1400	< 140	< 150	< 140	**82** J	< 140	< 140
n-Nitrosodiphenylamine	99,000	350,000	57	--	**56** J	< 120	< 110	< 120	< 110	< 98	< 100	< 1000	< 100	< 110	< 110	< 98	< 100	< 110
2-Methylnaphthalene	23,000	220,000	14	--	**60** J	< 180	< 170	< 170	< 170	< 150	< 150	< 1500	< 150	< 170	< 160	**97** J	< 150	< 160
Acenaphthylene	NLE	NLE	NLE	--	**18** J	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	< 120	< 110	**480**	< 110	< 110
Acenaphthene	340,000	3,300,000	410	--	< 110	< 110	< 110	< 110	< 110	< 94	< 98	< 990	< 98	< 110	< 100	< 94	< 99	< 100
Dibenzofuran	7,800	100,000	11	--	**21** J	< 120	< 120	< 120	< 110	< 100	< 100	< 1100	< 100	< 120	< 110	< 100	< 110	< 110
Diethylphthalate	4,900,000	49,000,000	470	--	**18** J	< 130	< 130	< 130	< 130	< 110	**84** J	< 1200	< 110	< 160	< 120	< 110	< 110	< 120
Fluorene	230,000	2,200,000	400	--	< 120	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	**68** J	< 110	**250**	< 110	< 110
Phenanthrene	NLE	NLE	NLE	--	**120**	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	**120**	**850**	**80** J	**2100**	**70** J	< 110
Anthracene	1,700,000	17,000,000	4,200	--	**17** J	< 120	< 120	< 120	< 120	< 100	< 110	< 1100	< 110	**120**	< 110	**540**	< 110	< 110
Di-n-butylphthalate	610,000	6,200,000	170	--	**610** B	**450** JB	**510** JB	**560** B	**330** JB	**340** JB	**1200** B	**1100** JB	**300** JB	**140** JB	**130** JB	**99** JB	**120** JB	**140** JB
Fluoranthene	230,000	2,200,000	7,000	--	**140**	**84** J	< 120	< 120	< 120	**72** J	< 110	< 1100	**170**	**1200**	**120**	**3700**	**67** J	**64** J
Pyrene	170,000	1,700,000	950	--	**140**	**73** J	< 140	**85** J	**64** J	**80** J	< 130	**750** J	**200**	**1200**	**150**	**3800**	**96** J	**68** J
Butylbenzylphthalate	260,000	910,000	200	--	< 150	< 160	**65** J	< 160	< 150	< 130	< 140	< 1400	< 140	< 160	< 150	< 130	< 140	< 140
Benzo(a)anthracene	150	2,100	10	--	**63** J	< 130	< 120	< 130	< 120	< 110	< 110	< 1100	**88** J	**540**	**65** J	**1900**	< 110	< 110
Chrysene	15,000	210,000	1100	--	**160**	< 160	**74** J	**69** J	< 150	**68** J	< 140	**740** J	**160**	**950**	**150** J	**3200**	**99** J	**66** J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**230** B	**260** B	**350** B	**220** B	**310** B	**390** B	**160** B	**770** JB	**110** JB	**190** B	**200** B	**55** JB	**89** JB	**93** JB
Benzo(b)fluoranthene	150	2,100	35	--	**160**	< 160	< 150	< 160	< 150	< 130	< 140	< 1400	**60** J	**490**	**68** J	**1100**	< 140	< 140
Benzo(k)fluoranthene	1,500	21,000	350	--	**180**	< 120	**62** J	< 120	< 110	**57** J	< 100	< 1000	**100** J	**420**	**81** J	**1900**	< 100	< 100
Benzo(a)pyrene	150	210	4	--	**72** J	< 120	< 120	< 120	< 120	< 100	< 110	**790** J	**80** J	**550**	**60** J	**1900**	< 110	< 110
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 120	< 130	< 130	< 130	< 130	< 110	< 110	< 1200	< 110	**330**	< 120	**890**	< 120	< 120
Dibenz(a,h)anthracene	15	210	11	--	< 140	< 150	< 150	< 150	< 150	< 130	< 130	< 1400	< 130	< 150	< 140	**320**	< 140	< 140
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 140	< 150	< 150	< 150	< 150	< 130	< 130	< 1400	**63** J	**340**	< 140	**1000**	< 140	< 140
TICs	NLE	NLE	NLE	--	**4800**	**2430**	**3750**	**3370**	**4860**	**4810**	**7320**	ND	**7390**	**6330**	**4750**	**5800**	**1200**	**2980**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.559**	**0.039**	**0.002**	**0.033**	**0.048**	**0.098**	**0.032**	**0.232**	**0.317**	**0.109**	**0.066**	**0.041**	**0.171**	**0.044**
Dieldrin	0.03	0.11	0.000061	--	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0011	< 0.0011	< 0.0012
4,4'-DDD	2	7.2	0.01	--	**0.139**	**0.012**	**0.003**	**0.044**	**0.015**	**0.072**	**0.05**	**0.207**	**0.158**	**0.113**	**0.063**	**0.037**	**0.066**	**0.113**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	**0.043**	< 0.0011	< 0.0012
4,4'-DDT	1.7	7	0.07	--	**0.481**	**0.035**	**0.006**	**0.011**	**0.036**	**0.194**	**0.008**	**0.116**	**0.326**	**0.304**	**0.045**	**0.043**	**0.309**	**0.057**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0011	< 0.0011	< 0.0012
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0060	< 0.0013	< 0.0012	< 0.0013	< 0.0013	< 0.0011	< 0.0010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0011	< 0.0011	< 0.0012

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) [1]	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background [2]	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21	B-22	B-23	B-24	B-25	B-26	B-27
Sample Date					03/20/98	03/20/98	03/20/98	03/20/98	03/20/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98	03/23/98
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**2620**	**4328**	**5798**	**1336**	**3624**	**4607**	**5021**	**3855**	**5241**	**8348**	**3407**	**4485**	**2628**	**8444**
Antimony	3.1	41	0.03	ND	**0.345**	**1.02**	**1.526**	**0.319**	**1.34**	**0.947**	**0.717**	**1.281**	**0.458**	**0.653**	**0.458**	**0.787**	**0.371**	**2.104**
Arsenic	0.61	2.4	0.0013	22.9	**2.987**	**3.42**	**7.245**	**1.479**	**6.735**	**5.143**	**4.409**	**4.345**	**4.688**	**5.923**	**2.446**	**6.348**	**1.722**	**21.54**
Barium	1,500	19,000	12	32.3	**28.31**	**72.64**	**138.7**	**59.2**	**71.49**	**13.94**	**19.65**	**29.9**	**15.92**	**42.62**	**18.26**	**31.35**	**7.015**	**14.1**
Beryllium	16	200	1.3	2	**0.2784**	**0.8532**	**0.512**	**0.1552**	**1.148**	**0.492**	**0.3926**	**0.3599**	**0.4215**	**0.8002**	**0.2194**	**0.3329**	**0.1691**	**0.9307**
Cadmium	7	80	0.05	ND	< 0.063	**0.6784**	**0.1049**	**0.1673**	**0.7389**	< 0.043	**0.1791**	**0.9103**	**1.677**	**0.549**	**0.2835**	**1.219**	< 0.060	< 0.064
Calcium	NLE	NLE	NLE	921	**650.6**	**2110**	**3422**	**1379**	**1033**	**494.4**	**421.1**	**320.3**	**3112**	**556**	**445.1**	**530.7**	**273.4**	**1138**
Chromium	12,000	150,000	2,800,000	269	**7.636**	**31.38**	**7.333**	**2.01**	**32.18**	**60.39**	**39.15**	**59.63**	**12.92**	**41.83**	**19.37**	**31.53**	**17.93**	**125.1**
Cobalt	2.3	30	0.02	2.5	**1.586**	**3.902**	**2.603**	**1.813**	**6.331**	**0.368**	**1.202**	**1.067**	**2.251**	**4.349**	**0.5124**	**0.9139**	**0.6978**	**0.7505**
Copper	310	4,100	2.2	8	**81.92**	**31.96**	**22.16**	**12.58**	**182**	**7.432**	**10.68**	**502.4**	**35.26**	**80.43**	**7.057**	**13.97**	**5.848**	**21.01**
Iron	5,500	72,000	27	55,800	**4008**	**6384**	**13410**	**1710**	**11100**	**11940**	**9427**	**12300**	**6758**	**11120**	**4743**	**8822**	**4258**	**20310**
Lead	400	800	NLE	19.5	**21.63**	**75.93**	**83.68**	**4.709**	**149.2**	**9.944**	**18.19**	**404.4**	**22.43**	**149**	**13.96**	**33.86**	**6.379**	**18.9**
Magnesium	NLE	NLE	NLE	7,230	**286.1**	**326.9**	**311.6**	**165.3**	**832.9**	**1600**	**1095**	**654**	**322.6**	**1102**	**555.1**	**689.6**	**440.2**	**2896**
Manganese	180	2,300	2.1	90.7	**13.92**	**29.19**	**36.44**	**10.51**	**37.97**	**5.166**	**23.91**	**36.35**	**126.3**	**64.37**	**14.35**	**9.481**	**10.97**	**20.8**
Mercury	1	4.3	0.0033	ND	**0.045**	**0.258**	**0.021**	**0.017**	**0.138**	**0.058**	**0.297**	**0.493**	**0.683**	**0.092**	**0.031**	**0.16**	**0.02**	**0.013**
Nickel	150	2,000	2	8.4	**4.973**	**11.59**	**10.22**	**5.396**	**17.57**	**2.437**	**4.139**	**11.76**	**5.666**	**16.19**	**2.344**	**4.075**	**1.512**	**3.944**
Potassium	NLE	NLE	NLE	15,400	**530.5**	**595**	**464.3**	**176.6**	**1968**	**2931**	**3145**	**1611**	**621.1**	**3165**	**1315**	**1472**	**711.2**	**5945**
Selenium	39	510	0.04	1.9	**0.383**	**0.528**	**0.453**	**0.521**	**0.818**	< 0.256	< 0.333	< 0.386	< 0.385	**0.952**	< 0.305	**0.341**	< 0.362	< 0.387
Silver	39	510	0.06	1.1	< 0.377	< 0.357	< 0.341	< 0.400	< 0.374	< 0.256	< 0.333	**1.18**	< 0.385	< 0.394	< 0.305	< 0.317	< 0.362	< 0.387
Sodium	NLE	NLE	NLE	51.6	**136.2**	**228.9**	**249.3**	**170.6**	**141**	**36.77**	**73.27**	**54.23**	**110.2**	**25.22**	**61.06**	**50.03**	**24.8**	**86.46**
Thallium	0.078	1	0.0011	ND	< 0.377	< 0.357	< 0.341	< 0.400	< 0.374	**0.502**	< 0.333	< 0.386	< 0.385	< 0.394	< 0.305	< 0.317	< 0.362	< 0.387
Vanadium	39	510	6.3	94.1	**12.17**	**14.33**	**16.03**	**7.215**	**18.92**	**22.07**	**21.36**	**16.46**	**11.38**	**29.96**	**13.33**	**22.48**	**11.77**	**16.77**
Zinc	2,300	31,000	29	81.4	**15.35**	**55.18**	**70.97**	**59.54**	**619.7**	**35.67**	**176.7**	**753.8**	**910.2**	**195.6**	**38.34**	**120.4**	**26.73**	**45.95**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-28		B-29		B-30		B-31		B-32		B-33		B-34		B-35		B-36		B-37		B-38		B-39		B-40		B-40 Dup	
Sample Date					03/23/98		03/23/98		03/23/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98		03/24/98	
Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (VOCs only collected 24 in. bgs)					3425.19		3425.21		3425.23		3428.03		3428.05		3428.07		3428.09		3428.11		3428.13		3428.15		3428.17		3428.19		3428.21		3428.25	
Methylene Chloride	36,000	310,000	2.2	--	< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560		< 510		< 550		< 540		< 790		< 550		< 550	
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280		< 250		< 270		< 270		< 400		< 270		< 280	
Benzene	1,100	5,400	0.2	--	< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280		< 250		< 270		< 270		< 400		< 270		< 280	
Toluene	500,000	4,500,000	59	--	< 270		< 300		< 290		< 280		< 300		< 280		< 270		< 280		< 250		< 270		< 270		< 400		< 270		< 280	
Acetone	6,100,000	63,000,000	240	--	< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560		< 510		< 550		< 540		< 790		< 550		< 550	
Vinyl Chloride	60	1,700	0.0053	--	< 810		< 890		< 870		< 850		< 900		< 830		< 810		< 830		< 760		< 820		< 810		< 1200		< 820		< 830	
Ethylbenzene	5,400	27,000	1.5	--	< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560		< 510		< 550		< 540		< 790		< 550		< 550	
m+p-Xylenes	59,000	250,000	18	--	< 810		< 890		< 870		< 850		< 900		< 830		< 810		< 830		< 760		< 820		< 810		< 1200		< 820		< 830	
o-Xylene	69,000	300,000	19	--	< 540		< 590		< 580		< 570		< 600		< 550		< 540		< 560		< 510		< 550		< 540		< 790		< 550		< 550	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3425.18		3425.20		3425.22		3428.02		3428.04		3428.06		3428.08		3428.10		3428.12		3428.14		3428.16		3428.18		3428.20		3428.24	
Naphthalene	3,600	18,000	0.47	--	< 140		< 150		< 140		< 260		< 290		< 300		< 290		< 280		< 260		< 300		< 270		< 270		< 270		< 280	
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 100		< 110		< 110		< 200		< 220		< 220		< 220		< 210		< 190		< 230		< 200		< 200		< 200		< 210	
2-Methylnaphthalene	23,000	220,000	14	--	< 150		< 170		< 160		< 290		< 320		< 330		< 330		< 320		< 290		< 340		< 300		< 300		< 300		< 320	
Acenaphthylene	NLE	NLE	NLE	--	< 110		< 120		< 110		< 210		**320**		< 280		< 230		< 220		< 200		< 240		< 210		< 210		< 210		< 220	
Acenaphthene	340,000	3,300,000	410	--	< 98		< 110		< 100		<190		< 210		< 210		< 210		< 200		< 190		< 220		< 190		< 190		< 200		< 200	
Dibenzofuran	7,800	100,000	11	--	< 100		< 110		< 110		< 200		< 220		< 230		< 220		< 220		< 200		< 230		< 210		< 210		< 210		< 220	
Diethylphthalate	4,900,000	49,000,000	470	--	< 110		< 120		< 120		< 220		**120**	J	< 250		< 240		< 240		< 220		< 250		< 230		< 230		< 230		< 240	
Fluorene	230,000	2,200,000	400	--	< 110		< 120		< 110		< 210		< 230		< 230		< 230		< 220		< 200		< 240		< 210		< 210		< 210		< 220	
Phenanthrene	NLE	NLE	NLE	--	< 110		< 120		**150**		**120**	J	**700**		**580**		**800**		**170**	J	< 210		< 240		**130**	J	< 210		**220**		**720**		
Anthracene	1,700,000	17,000,000	4,200	--	< 110		< 120		< 110		< 210		**170**	J	**160**	J	**190**	J	< 220		< 210		< 240		< 210		< 210		< 220		**180**	J
Di-n-butylphthalate	610,000	6,200,000	170	--	**130**	JB	**140**	JB	**1600**	B	**1400**	B	**4300**	B	**790**	JB	**1200**	B	**1600**	B	**590**	JB	**720**	JB	**2200**	B	**660**	JB	**1500**	B	**650**	JB
Fluoranthene	230,000	2,200,000	7,000	--	< 110		< 120		**210**		**170**	J	**720**		**800**		**1100**		**320**		< 210		< 240		**160**	J	< 220		**390**		**830**	
Pyrene	170,000	1,700,000	950	--	< 130		< 140		**240**		**220**	J	**1300**		**1500**		**1100**		**440**		< 240		< 280		**180**	J	< 250		**470**		**780**	
Butylbenzylphthalate	260,000	910,000	200	--	< 140		< 150		< 150		< 270		< 300		< 300		< 300		< 290		< 270		< 310		< 280		< 280		< 280		< 290	
Benzo(a)anthracene	150	2,100	10	--	< 110		< 120		**97**	J	< 210		**690**		**700**		**450**		**200**	J	< 210		< 240		< 220		< 220		**220**		**350**	
Chrysene	15,000	210,000	1100	--	< 140		< 150		**330**		**230**	J	**1300**		**1400**		**910**		**450**		< 270		< 310		**230**	J	**110**	J	**530**		**660**	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**110**	JB	**150**	JB	**110**	JB	**260**	JB	**630**	B	**360**	B	**300**	JB	**510**	B	**260**	JB	**320**	JB	**410**	B	**660**	B	**340**	B	**360**	B
Benzo(b)fluoranthene	150	2,100	35	--	< 140		< 150		**91**	J	< 260		**470**		**380**		**340**		**150**	J	< 260		< 300		< 270		< 270		**210**	JD	**250**	J
Benzo(k)fluoranthene	1,500	21,000	350	--	< 100		< 110		**160**		**180**	J	**580**		**750**		**590**		**250**		< 190		< 220		**170**	J	< 200		**330**		**560**	
Benzo(a)pyrene	150	210	4	--	< 100		< 110		**110**	J	< 200		**830**		**840**		**510**		**250**		< 200		< 230		< 210		< 210		**300**		**400**	
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 110		< 130		**75**	J	< 220		**390**		**470**		**320**		**160**	J	< 220		< 250		< 230		< 230		**190**	J	**210**	J
Dibenz(a,h)anthracene	15	210	11	--	< 130		< 150		< 140		< 260		< 280		< 290		< 290		< 280		< 250		< 290		< 270		< 260		< 270		< 280	
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 130		< 150		**85**	J	< 260		**550**		**600**		**350**		< 280		< 250		< 290		< 270		< 260		< 270		**220**	J
TICs	NLE	NLE	NLE	--	**6820**		**4790**		**15440**		**14600**		**35800**		**10000**		**13220**		**14960**		**3120**		**3800**		**8400**		**11450**		**18120**		**9900**	
Pesticides/PCBs (mg/kg)																																
4,4'-DDE	1.4	5.1	0.046	--	< 0.0009		< 0.0009		**0.273**		**0.136**		**0.107**		**0.141**		**0.066**		**0.166**		**0.059**		**0.014**		**0.164**		**0.044**		**0.211**		**0.944**	
Dieldrin	0.03	0.11	0.000061	--	< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013		< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011	
4,4'-DDD	2	7.2	0.01	--	< 0.0014		< 0.0014		**0.051**		**0.039**		**0.019**		**0.03**		**0.026**		**0.076**		**0.005**		< 0.0015		**0.069**		**0.009**		**0.142**		**0.289**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013		< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011	
4,4'-DDT	1.7	7	0.07	--	< 0.0026		< 0.0025		**0.231**		**0.208**		**0.188**		**0.146**		**0.122**		**0.299**		**0.063**		**0.008**		**0.25**		**0.117**		**0.112**		**0.208**	
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013		< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011	
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0012		< 0.0011		< 0.0011		< 0.0030		< 0.0027		< 0.0060		< 0.0012		< 0.0013		< 0.0010		< 0.0013		< 0.0058		< 0.0011		< 0.0029		< 0.0011	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-28	B-29	B-30	B-31	B-32	B-33	B-34	B-35	B-36	B-37	B-38	B-39	B-40	B-40 Dup
Sample Date					03/23/98	03/23/98	03/23/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98	03/24/98
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**8185**	**7810**	**5413**	**4364**	**5564**	**11890**	**8151**	**6575**	**1855**	**3235**	**3410**	**3162**	**5132**	**4053**
Antimony	3.1	41	0.03	ND	**1.951**	**1.98**	**1.448**	**1.06**	**0.687**	**2.65**	**2.078**	**1.272**	**0.426**	**0.474**	**0.801**	**1.016**	**1.075**	**0.863**
Arsenic	0.61	2.4	0.0013	22.9	**19.35**	**24.33**	**14.68**	**11.32**	**8.863**	**14.73**	**11.1**	**11.02**	**1.315**	**3.544**	**12.05**	**9.484**	**11.61**	**14.58**
Barium	1,500	19,000	12	32.3	**13.03**	**9.416**	**70.55**	**61.24**	**46.39**	**45.66**	**48.79**	**40.17**	**5.639**	**45.59**	**128.7**	**17.24**	**71.02**	**70.08**
Beryllium	16	200	1.3	2	**0.9068**	**0.9298**	**0.6609**	**0.5325**	**0.5311**	**1.329**	**0.8959**	**0.7196**	**0.127**	**0.8634**	**0.4662**	**0.3693**	**0.6631**	**0.4958**
Cadmium	7	80	0.05	ND	< 0.049	< 0.065	**0.1488**	**0.1458**	**0.2347**	**0.1126**	**0.1174**	**0.3434**	< 0.058	**0.5593**	**0.2638**	**0.4148**	**0.1471**	< 0.064
Calcium	NLE	NLE	NLE	921	**2421**	**832.5**	**1231**	**1396**	**1394**	**1671**	**2981**	**960.9**	**996.7**	**1143**	**1109**	**931.5**	**1317**	**1271**
Chromium	12,000	150,000	2,800,000	269	**131.8**	**123.9**	**67.89**	**54.13**	**43.96**	**142.8**	**127.6**	**72.95**	**23.75**	**5.249**	**29.69**	**27.07**	**63.37**	**51.15**
Cobalt	2.3	30	0.02	2.5	**0.6415**	**0.8132**	**1.317**	**1.087**	**1.799**	**1.703**	**1.563**	**1.172**	**0.2485**	**4.283**	**2.585**	**3.301**	**1.679**	**1.116**
Copper	310	4,100	2.2	8	**5.498**	**5.66**	**47.89**	**20.64**	**35.33**	**25.16**	**89.97**	**23.25**	**24.37**	**26.39**	**44.16**	**37.37**	**23.91**	**17.75**
Iron	5,500	72,000	27	55,800	**21280**	**18960**	**16300**	**13620**	**12970**	**31800**	**20940**	**18550**	**3564**	**1569**	**13290**	**16380**	**15810**	**14460**
Lead	400	800	NLE	19.5	**4.03**	**4.268**	**56.31**	**32.83**	**45.47**	**45.28**	**37.17**	**33.38**	**3.324**	**18.56**	**129.4**	**40.67**	**35.42**	**23.37**
Magnesium	NLE	NLE	NLE	7,230	**3065**	**3019**	**1883**	**1631**	**1474**	**4675**	**2802**	**2070**	**314.8**	**96.27**	**820.2**	**460.3**	**1663**	**1321**
Manganese	180	2,300	2.1	90.7	**17.65**	**14.72**	**46.26**	**37.65**	**64.16**	**55.22**	**34.04**	**25.04**	**5.719**	**38.8**	**66.82**	**46.57**	**34.75**	**18.91**
Mercury	1	4.3	0.0033	ND	**0.013**	< 0.013	**0.108**	**0.076**	**0.073**	**0.102**	**0.077**	**0.082**	**0.031**	**0.084**	**0.212**	**0.054**	**0.1**	**0.093**
Nickel	150	2,000	2	8.4	**3.926**	**3.968**	**4.6**	**3.909**	**7.046**	**7.272**	**5.997**	**5.129**	**1.095**	**11.74**	**6.638**	**10.18**	**5.603**	**3.999**
Potassium	NLE	NLE	NLE	15,400	**6312**	**6000**	**5250**	**4738**	**3611**	**9811**	**5084**	**6139**	**424.6**	**265.2**	**2133**	**997.4**	**5385**	**4211**
Selenium	39	510	0.04	1.9	< 0.296	< 0.390	< 0.379	**0.45**	**0.683**	< 0.366	< 0.373	**0.49**	< 0.347	< 0.402	**1.126**	**1.046**	**1.198**	**1.305**
Silver	39	510	0.06	1.1	< 0.296	< 0.390	< 0.379	< 0.393	< 0.386	< 0.366	< 0.373	< 0.324	< 0.347	< 0.402	< 0.394	< 0.350	< 0.355	< 0.383
Sodium	NLE	NLE	NLE	51.6	**65.74**	**65.74**	**135**	**81.76**	**174**	**158.7**	**147.4**	**153.7**	**88.89**	**115.3**	**130.1**	**50.75**	**319.1**	**135.8**
Thallium	0.078	1	0.0011	ND	< 0.296	< 0.390	< 0.379	< 0.393	< 0.386	< 0.366	< 0.373	< 0.324	< 0.347	< 0.402	< 0.394	< 0.350	< 0.355	< 0.383
Vanadium	39	510	6.3	94.1	**19.77**	**16.38**	**18.24**	**16.48**	**21.78**	**47.65**	**33.17**	**24.74**	**11.45**	**10.93**	**13.96**	**19.15**	**16.68**	**13.25**
Zinc	2,300	31,000	29	81.4	**27.66**	**28.3**	**65.28**	**54.9**	**57.21**	**79.91**	**59.09**	**58.7**	**9.468**	**181.7**	**84.81**	**157.7**	**58.14**	**52.61**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-41		B-42		B-43		B-44		B-45		B-46		B-47		B-48		B-49		B-50		B-51		B-52		B-53		B-54	
Sample Date					03/24/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		03/25/98		08/26/99		08/26/99		08/26/99	
Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (VOCs only collected 24 in. bgs)					3428.23		3432.03		3432.05		3432.07		3432.09		3432.11		3432.13		3432.15		3432.17		3432.19		3432.21		4748.03		4748.05		4748.07	
Methylene Chloride	36,000	310,000	2.2	--	< 580		< 590		< 610		< 540		< 650		< 510		< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600	
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 290		< 290		< 310		< 270		< 320		< 250		< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300	
Benzene	1,100	5,400	0.2	--	< 290		< 290		< 310		< 270		< 320		< 250		< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300	
Toluene	500,000	4,500,000	59	--	< 290		< 290		< 310		< 270		< 320		< 250		< 320		< 280		< 290		< 300		< 290		< 300		< 260		< 300	
Acetone	6,100,000	63,000,000	240	--	< 580		< 590		< 610		< 540		< 650		< 510		< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600	
Vinyl Chloride	60	1,700	0.0053	--	< 870		< 880		< 920		< 810		< 970		< 760		< 960		< 850		< 880		< 900		< 880		< 890		< 780		< 890	
Ethylbenzene	5,400	27,000	1.5	--	< 580		< 590		< 610		< 540		< 650		< 510		< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600	
m+p-Xylenes	59,000	250,000	18	--	< 870		< 880		< 920		< 810		<970		< 760		< 960		< 850		< 880		< 900		< 880		< 890		< 780		< 890	
o-Xylene	69,000	300,000	19	--	< 580		< 590		< 610		< 540		<650		< 510		< 640		< 570		< 580		< 600		< 590		< 590		< 520		< 600	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		**4000**		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					3428.22		3432.02		3432.04		3432.06		3432.08		3432.10		3432.12		3432.14		3432.16		3432.18		3432.20		4748.02		4748.04		4748.06	
Naphthalene	3,600	18,000	0.47	--	< 270		< 280		< 290		< 270		< 290		< 260		< 260		< 260		< 250		< 300		< 280		< 1200		< 1100		< 1300	
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 200		< 210		< 220		< 200		< 220		< 210		< 200		< 200		< 190		< 220		< 210		< 1200		< 1100		< 1300	
2-Methylnaphthalene	23,000	220,000	14	--	< 300		< 310		< 320		< 310		< 320		< 290		< 290		< 300		< 280		< 330		< 310		< 1200		< 1100		< 1300	
Acenaphthylene	NLE	NLE	NLE	--	< 210		< 220		< 230		< 210		< 260		< 210		< 210		< 210		< 200		< 230		< 220		< 1200		< 1100		< 1300	
Acenaphthene	340,000	3,300,000	410	--	< 190		< 200		< 210		< 200		< 210		< 190		< 190		< 190		< 180		< 210		< 200		< 1200		< 1100		< 1300	
Dibenzofuran	7,800	100,000	11	--	< 200		< 210		< 220		< 210		< 220		< 200		< 200		< 200		< 190		< 230		< 210		< 1200		< 1100		< 1300	
Diethylphthalate	4,900,000	49,000,000	470	--	< 220		< 230		< 240		< 230		< 240		< 220		< 220		< 140		< 210		< 250		< 230		< 1200		< 1100		< 1300	
Fluorene	230,000	2,200,000	400	--	< 210		< 220		< 220		< 210		< 230		< 210		< 210		< 210		< 190		< 230		< 220		< 1200		< 1100		< 1300	
Phenanthrene	NLE	NLE	NLE	--	**220**		**720**		< 230		**320**		**200**	J	< 210		**170**	J	< 210		< 200		< 230		< 220		**150**	J	< 1100		**330**	J
Anthracene	1,700,000	17,000,000	4,200	--	< 210		**120**	J	< 230		< 220		< 230		< 210		< 210		< 210		< 200		< 230		< 220		< 1200		< 1100		< 1300	
Di-n-butylphthalate	610,000	6,200,000	170	--	**670**	JB	**560**	JB	**1400**	B	**1200**	B	**1200**	B	**1100**	B	**2100**	B	**2000**	B	**400**	JB	**960**	JB	**360**	JB	**490**	JB	**1100**	JB	**1100**	JB
Fluoranthene	230,000	2,200,000	7,000	--	**230**		**1600**		**290**		**580**		**180**	J	< 210		**210**	J	**140**	J	< 200		**160**	J	< 220		**280**	J	**120**	J	**920**	J
Pyrene	170,000	1,700,000	950	--	**300**		**1500**		**290**		**530**		**260**	J	< 240		**230**	J	**140**	J	< 230		**160**	J	< 260		**230**	J	< 1100		**790**	J
Butylbenzylphthalate	260,000	910,000	200	--	< 270		< 280		< 300		< 280		< 300		< 270		< 270		< 270		< 260		< 300		< 290		< 1200		< 1100		< 1300	
Benzo(a)anthracene	150	2,100	10	--	**130**	J	**690**		**330**		**240**		< 230		< 210		< 210		< 210		< 200		< 240		< 220		**120**	J	< 1100		**390**	J
Chrysene	15,000	210,000	1100	--	**380**		**1800**		**820**		**530**		< 300		< 270		< 270		**150**	J	< 260		**180**	J	**120**	J	**130**	J	< 1100		**590**	J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**350**	B	**260**	JB	**420**	B	**140**	JB	**170**	JB	**220**	JB	**150**	JB	**170**	JB	< 280		**190**	JB	**440**	B	**210**	JB	**190**	JB	**220**	JB
Benzo(b)fluoranthene	150	2,100	35	--	**110**	J	**840**		**470**		**160**	J	< 290		< 260		**120**	J	< 260		< 250		< 300		< 280		< 1200		< 1100		**500**	J
Benzo(k)fluoranthene	1,500	21,000	350	--	**210**		**990**		**670**		**350**		**160**	J	< 200		**140**	J	< 200		< 190		< 220		< 210		< 1200		< 1100		**380**	J
Benzo(a)pyrene	150	210	4	--	**130**	J	**1000**		**350**		**300**		< 220		< 200		< 200		< 200		< 190		< 230		< 210		< 1200		< 1100		**320**	J
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 220		**560**		< 240		**190**	J	< 240		< 220		< 220		< 220		< 210		< 250		< 230		< 1200		< 1100		**220**	J
Dibenz(a,h)anthracene	15	210	11	--	< 260		**390**		< 280		< 270		< 280		< 260		< 260		< 260		< 240		< 290		< 270		< 1200		< 1100		< 1300	
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 260		**550**		<280		< 270		< 280		< 260		< 260		< 260		< 240		< 290		< 270		< 1200		< 1100		**220**	J
TICs	NLE	NLE	NLE	--	**11290**		**7300**		**22800**		**9590**		**6180**		**4360**		**15760**		**17400**		**6930**		**66300**		**4320**		**10530**		**31960**		**25210**	
Pesticides/PCBs (mg/kg)																																
4,4'-DDE	1.4	5.1	0.046	--	**0.456**		**0.111**		**0.098**		**0.186**		**0.275**		**0.09**		**0.128**		**0.086**		**0.14**		**0.234**		**0.044**		**0.005**		**0.037**		**0.264**	
Dieldrin	0.03	0.11	0.000061	--	< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDD	2	7.2	0.01	--	**0.133**		**0.05**		**0.059**		**0.022**		**0.041**		**0.035**		**0.033**		**0.035**		**0.073**		**0.089**		**0.008**		< 0.0007		**0.05**		**0.781**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006	
4,4'-DDT	1.7	7	0.07	--	**0.176**		**0.176**		**0.312**		**0.225**		**0.467**		**0.18**		**0.138**		**0.27**		**0.461**		**0.485**		**0.055**		**0.011**		**0.112**		**0.28**	
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006	
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0012		< 0.0011		< 0.0011		< 0.0011		< 0.0011		< 0.0012		< 0.0011		< 0.0006		< 0.0006		< 0.0006	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-41	B-42	B-43	B-44	B-45	B-46	B-47	B-48	B-49	B-50	B-51	B-52	B-53	B-54
Sample Date					03/24/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	03/25/98	08/26/99	08/26/99	08/26/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**6090**	**5180**	**10420**	**8551**	**1757**	**4696**	**3458**	**8286**	**3854**	**5679**	**6382**	**20800**	**15300**	**19000**
Antimony	3.1	41	0.03	ND	**1.38**	**0.69**	**2.23**	**0.696**	**5.67**	**0.979**	**0.451**	**0.969**	**0.565**	**0.618**	**0.707**	< 0.446	< 0.413	**1.12**
Arsenic	0.61	2.4	0.0013	22.9	**9.922**	**11.23**	**16.21**	**10**	**4.379**	**8.333**	**4.976**	**8.409**	**8.337**	**7.217**	**9.589**	**27.2**	**19.1**	**46.9**
Barium	1,500	19,000	12	32.3	**84.03**	**49.63**	**54.09**	**49.56**	**28.44**	**82.1**	**34.5**	**26.35**	**35.95**	**21.4**	**29.13**	**26.9**	**35.2**	**27.6**
Beryllium	16	200	1.3	2	**0.6972**	**1.5599**	**1.267**	**0.5654**	**0.18**	**0.6231**	**0.3267**	**0.7705**	**0.4051**	**0.5608**	**0.6929**	**2.65**	**2.14**	**2.35**
Cadmium	7	80	0.05	ND	**0.8425**	**0.1605**	< 0.062	**0.2881**	**0.1212**	**0.1333**	**0.2149**	< 0.061	**0.0833**	< 0.061	< 0.057	**2.43**	**1.96**	**2.7**
Calcium	NLE	NLE	NLE	921	**1478**	**1111**	**1687**	**1054**	**475.2**	**810.8**	**529.5**	**753.4**	**1062**	**640.5**	**1341**	**1130**	**2270**	**1020**
Chromium	12,000	150,000	2,800,000	269	**56.51**	**46.02**	**134**	**37.94**	**10.56**	**43.98**	**18.74**	**61.33**	**37.89**	**35.65**	**48.86**	**333**	**237**	**293**
Cobalt	2.3	30	0.02	2.5	**1.863**	**1.767**	**1.629**	**2.152**	**0.9717**	**2.176**	**1.182**	**1.755**	**0.9757**	**2.081**	**1.857**	**1.17**	**1.08**	**1.2**
Copper	310	4,100	2.2	8	**58.75**	**61.41**	**25.73**	**39.89**	**9.757**	**41.31**	**19.19**	**12.98**	**8.154**	**10.21**	**30.46**	**23.3**	**20.5**	**24.2**
Iron	5,500	72,000	27	55,800	**16560**	**16950**	**29340**	**14440**	**3999**	**12530**	**7228**	**18920**	**11470**	**14250**	**17640**	**68500**	**53200**	**67000**
Lead	400	800	NLE	19.5	**82.95**	**49.1**	**37.93**	**54.89**	**28.98**	**6**	**56.02**	**36.42**	**18.73**	**27.98**	**28.4**	**38.8**	**16**	**61.5**
Magnesium	NLE	NLE	NLE	7,230	**1584**	**1388**	**4127**	**1113**	**286.6**	**1346**	**619.9**	**2045**	**1166**	**1031**	**1523**	**10800**	**7670**	**9040**
Manganese	180	2,300	2.1	90.7	**50.74**	**49.29**	**41.07**	**60.75**	**17.01**	**27.42**	**26.87**	**37.7**	**21.86**	**49.01**	**45.29**	**35.1**	**28.6**	**28**
Mercury	1	4.3	0.0033	ND	**0.136**	**0.113**	**0.078**	**0.095**	**0.113**	**0.102**	**0.14**	**0.166**	**0.087**	**0.057**	**0.102**	**0.077**	**0.132**	**0.051**
Nickel	150	2,000	2	8.4	**10.42**	**6.326**	**6.554**	**6.718**	**4.667**	**6.517**	**3.272**	**5.857**	**3.606**	**4.805**	**5.213**	**7.81**	**7.18**	**9.4**
Potassium	NLE	NLE	NLE	15,400	**4839**	**3470**	**9093**	**2890**	**307.1**	**3777**	**1120**	**6228**	**3119**	**2451**	**4066**	**24100**	**18400**	**21100**
Selenium	39	510	0.04	1.9	< 0.373	< 0.363	< 0.372	**0.334**	< 0.341	**0.777**	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	**1.42**	**1.74**	**2.23**
Silver	39	510	0.06	1.1	< 0.373	< 0.363	< 0.372	< 0.320	< 0.341	< 0.361	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	< 0.670	< 0.620	< 0.670
Sodium	NLE	NLE	NLE	51.6	**105.6**	**61.41**	**162.2**	**94.87**	**52.82**	**123.6**	**67.61**	**124.6**	**43.61**	**32.32**	**37.33**	**165**	**325**	**154**
Thallium	0.078	1	0.0011	ND	< 0.373	< 0.363	< 0.372	< 0.320	< 0.341	< 0.361	< 0.367	< 0.367	< 0.364	< 0.364	< 0.343	< 0.670	< 0.620	< 0.670
Vanadium	39	510	6.3	94.1	**25.89**	**19.26**	**43.12**	**16.99**	**8.171**	**18.76**	**11.81**	**33.25**	**12.98**	**21.22**	**23.79**	**125**	**83.5**	**120**
Zinc	2,300	31,000	29	81.4	**129.7**	**68.39**	**78.77**	**87.89**	**35.31**	**40.08**	**44.42**	**50.77**	**42.09**	**45.21**	**69.75**	**87.7**	**82.3**	**114**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-55	B-56	B-57	B-58	B-59	B-60	B-61	B-63	B-64	B-65	B-66	B-67	B-68	B-69
Sample Date					08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					4748.09	4748.11	4748.13	4748.15	4748.17	4748.19	4748.21	4754.03	4754.05	4754.07	4754.09	4754.11	4754.13	4754.15
Methylene Chloride	36,000	310,000	2.2	--	< 700	< 620	< 620	< 550	< 560	< 660	< 610	< 580	< 640	< 600	< 630	< 570	< 580	< 570
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 350	< 310	< 310	< 270	< 280	< 330	< 310	< 290	< 320	< 300	< 310	< 290	< 290	< 290
Benzene	1,100	5,400	0.2	--	< 350	< 310	< 310	< 270	< 280	< 330	< 310	< 290	< 320	< 300	< 310	< 290	< 290	< 290
Toluene	500,000	4,500,000	59	--	< 350	< 310	< 310	< 270	< 280	< 330	< 310	< 290	< 320	< 300	< 310	< 290	< 290	< 290
Acetone	6,100,000	63,000,000	240	--	< 700	< 620	< 620	< 550	< 560	< 660	< 610	< 580	< 640	< 600	< 630	< 570	< 580	< 570
Vinyl Chloride	60	1,700	0.0053	--	< 1100	< 930	< 940	< 820	< 830	< 980	< 920	< 870	< 950	< 910	< 940	< 860	< 870	< 860
Ethylbenzene	5,400	27,000	1.5	--	< 700	< 620	< 620	< 550	< 560	< 660	< 610	< 580	< 640	< 600	< 630	< 570	< 580	< 570
m+p-Xylenes	59,000	250,000	18	--	< 1100	< 930	< 940	< 820	< 830	< 980	< 920	< 870	< 950	< 910	< 940	< 860	< 870	< 860
o-Xylene	69,000	300,000	19	--	< 700	< 620	< 620	< 550	< 560	< 660	< 610	< 580	< 640	< 600	< 630	< 570	< 580	< 570
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4748.08	4748.10	4748.12	4748.14	4748.16	4748.18	4748.20	4754.02	4754.04	4754.06	4754.08	4754.10	4754.12	4754.14
Naphthalene	3,600	18,000	0.47	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
2-Methylnaphthalene	23,000	220,000	14	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Acenaphthylene	NLE	NLE	NLE	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Acenaphthene	340,000	3,300,000	410	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Dibenzofuran	7,800	100,000	11	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Diethylphthalate	4,900,000	49,000,000	470	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	**200** J	**140** J	< 1000	< 1100
Fluorene	230,000	2,200,000	400	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Phenanthrene	NLE	NLE	NLE	--	< 1200	**140** J	< 1200	< 1100	**120** J	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Anthracene	1,700,000	17,000,000	4,200	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Di-n-butylphthalate	610,000	6,200,000	170	--	**1100** JB	**320** JB	**1100** JB	**1600** B	**510** JB	**800** JB	**1800** B	**2200** B	**970** JB	**1100** JB	**280** JB	**290** JB	**720** JB	**840** JB
Fluoranthene	230,000	2,200,000	7,000	--	**180** J	**330** J	< 1200	< 1100	**260** J	< 1100	< 1000	**310** J	**720** J	< 1200	< 1200	< 1100	**130** J	< 1100
Pyrene	170,000	1,700,000	950	--	**160** J	**320** J	< 1200	< 1100	**240** J	< 1100	< 1000	**260** J	< 1200	< 1200	< 1200	< 1100	**140** J	< 1100
Butylbenzylphthalate	260,000	910,000	200	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Benzo(a)anthracene	150	2,100	10	--	< 1200	**200** J	< 1200	< 1100	**150** J	< 1100	< 1000	**150** J	**580** J	< 1200	< 1200	< 1100	< 1000	< 1100
Chrysene	15,000	210,000	1100	--	**120** J	**300** J	< 1200	< 1100	**230** J	< 1100	< 1000	**160** J	**780** J	< 1200	< 1200	< 1100	**120** J	< 1100
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**230** JB	**130** JB	**190** JB	**190** JB	**250** JB	**190** JB	**260** JB	**400** JB	**140** JB	**240** JB	**120** JB	**150** JB	**200** JB	**120** JB
Benzo(b)fluoranthene	150	2,100	35	--	< 1200	**350** J	< 1200	< 1100	**200** J	< 1100	< 1000	**130** J	**510** J	< 1200	< 1200	< 1100	< 1000	< 1100
Benzo(k)fluoranthene	1,500	21,000	350	--	< 1200	**250** J	< 1200	< 1100	**150** J	< 1100	< 1000	**120** J	**390** J	< 1200	< 1200	< 1100	< 1000	< 1100
Benzo(a)pyrene	150	210	4	--	< 1200	**250** J	< 1200	< 1100	**130** J	< 1100	< 1000	**130** J	**490** J	< 1200	< 1200	< 1100	< 1000	< 1100
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 1200	**150** J	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	**210** J	< 1200	< 1200	< 1100	< 1000	< 1100
Dibenz(a,h)anthracene	15	210	11	--	< 1200	< 1200	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1100	< 1000	< 1100
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 1200	**170** J	< 1200	< 1100	< 1100	< 1100	< 1000	< 1100	**240** J	< 1200	< 1200	< 1100	< 1000	< 1100
TICs	NLE	NLE	NLE	--	**71400**	**31340**	**19680**	**18240**	**12450**	**10120**	**22140**	**29040**	**10310**	**15600**	**15460**	**15380**	**16800**	**15740**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.05**	**0.56**	**0.002**	**0.006**	**0.252**	**0.004**	**0.002**	**0.048**	< 0.0005	**0.013**	**0.009**	**0.21**	< 0.0004	**0.003**
Dieldrin	0.03	0.11	0.000061	--	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDD	2	7.2	0.01	--	**0.026**	**0.714**	< 0.0007	**0.003**	< 0.0006	< 0.0006	**0.001**	**0.024**	< 0.0007	**0.003**	**0.009**	**0.961**	< 0.0006	< 0.0006
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDT	1.7	7	0.07	--	**0.046**	**0.097**	**0.004**	**0.023**	**0.499**	**0.003**	< 0.0012	**0.015**	**0.003**	**0.174**	**0.011**	**0.08**	< 0.0012	**0.002**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-55	B-56	B-57	B-58	B-59	B-60	B-61	B-63	B-64	B-65	B-66	B-67	B-68	B-69
Sample Date					08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/26/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/27/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**11500**	**7960**	**11600**	**13500**	**8210**	**14000**	**4480**	**13600**	**18700**	**15700**	**19100**	**11700**	**11700**	**4900**
Antimony	3.1	41	0.03	ND	< 0.411	**3.53**	< 0.507	< 0.402	< 0.457	< 0.413	< 0.434	< 0.442	< 0.534	< 0.529	< 0.523	< 0.428	< 0.393	< 0.485
Arsenic	0.61	2.4	0.0013	22.9	**19.5**	**7.64**	**20.5**	**22.6**	**12.7**	**5.53**	**4.05**	**12.6**	**51.3**	**29.4**	**24.4**	**14.1**	**6.95**	**4.79**
Barium	1,500	19,000	12	32.3	**39.4**	**38.6**	**7.42**	**5.25**	**40.9**	**21.8**	**6.32**	**74**	**25.3**	**6.35**	**15**	**38.2**	**17.7**	**9.32**
Beryllium	16	200	1.3	2	**0.753**	**0.623**	**1.55**	**1.76**	**0.513**	**0.379**	**0.33**	**1.95**	**2.14**	**2.18**	**2.19**	**0.962**	**1.23**	**0.361**
Cadmium	7	80	0.05	ND	**0.868**	**0.94**	**1.19**	**1.22**	**0.816**	**0.242**	**0.564**	**1.36**	**0.339**	**0.385**	**0.42**	**0.36**	**0.308**	**0.281**
Calcium	NLE	NLE	NLE	921	**598**	**1200**	**260**	**931**	**364**	**190**	**88.7**	**5780**	**555**	**290**	**447**	**2590**	**840**	**105**
Chromium	12,000	150,000	2,800,000	269	**84.3**	**60.4**	**187**	**200**	**48.5**	**21.9**	**39.1**	**215**	**251**	**256**	**266**	**91.4**	**114**	**40.4**
Cobalt	2.3	30	0.02	2.5	**1.53**	**2.23**	**0.641**	**0.493**	**3.32**	**2.5**	**1.27**	**2.03**	**1.3**	**0.874**	**1.36**	**2.38**	**1.87**	**1.32**
Copper	310	4,100	2.2	8	**33.6**	**13.6**	**4.81**	**5.68**	**7.01**	**1.39**	< 0.652	**15.9**	**24.4**	**12.2**	**12**	**14.9**	**4.94**	**4.48**
Iron	5,500	72,000	27	55,800	**26000**	**20200**	**37500**	**37700**	**24100**	**14300**	**12400**	**48800**	**50900**	**49900**	**54000**	**28600**	**38200**	**14200**
Lead	400	800	NLE	19.5	**41.7**	**34.6**	**6.53**	**5.24**	**23.1**	**7.33**	**2.97**	**7.58**	**16.1**	**4.73**	**7.94**	**7.56**	**4.98**	**2.86**
Magnesium	NLE	NLE	NLE	7,230	**2510**	**1330**	**4420**	**5510**	**703**	**855**	**785**	**6900**	**7490**	**7580**	**8040**	**3340**	**4400**	**839**
Manganese	180	2,300	2.1	90.7	**26.4**	**24.5**	**21.4**	**15**	**55.3**	**38.6**	**28.6**	**52.5**	**37.6**	**19.6**	**36.7**	**55.7**	**41.7**	**27.2**
Mercury	1	4.3	0.0033	ND	**0.151**	**0.226**	< 0.026	< 0.024	**0.117**	**0.023**	**0.021**	< 0.024	**0.084**	< 0.024	< 0.024	**0.028**	< 0.025	< 0.021
Nickel	150	2,000	2	8.4	**7.84**	**7.38**	**6.28**	**4.51**	**9.49**	**7.05**	**2.71**	**17.6**	**6.65**	**6.47**	**5.95**	**6.75**	**5.61**	**2.58**
Potassium	NLE	NLE	NLE	15,400	**4420**	**2980**	**10200**	**12600**	**1480**	**618**	**1520**	**16200**	**16700**	**17300**	**18000**	**6420**	**10600**	**1900**
Selenium	39	510	0.04	1.9	**1.77**	< 0.737	**2.46**	**1.33**	**1.9**	< 0.619	< 0.652	**1.53**	**0.886**	< 0.793	**0.848**	**0.882**	< 0.590	< 0.728
Silver	39	510	0.06	1.1	< 0.616	< 0.737	< 0.760	< 0.603	< 0.685	< 0.619	< 0.652	< 0.664	< 0.801	< 0.793	< 0.785	< 0.642	< 0.590	< 0.728
Sodium	NLE	NLE	NLE	51.6	**187**	**97.1**	**76.3**	**180**	**83.2**	**94.3**	**56**	**279**	**228**	**191**	**367**	**151**	**150**	**174**
Thallium	0.078	1	0.0011	ND	< 0.616	< 0.737	< 0.760	< 0.603	< 0.685	< 0.619	< 0.652	< 0.664	< 0.801	< 0.793	< 0.785	< 0.642	< 0.590	< 0.728
Vanadium	39	510	6.3	94.1	**55.1**	**55.2**	**72.5**	**81.6**	**65.5**	**29.2**	**36.3**	**71.6**	**118**	**112**	**123**	**57.2**	**64.2**	**37.3**
Zinc	2,300	31,000	29	81.4	**48.7**	**103**	**43.5**	**38.5**	**41.6**	**33.1**	**16.8**	**77.3**	**59.8**	**48.9**	**83.4**	**49.3**	**35**	**16.4**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-70	B-71	B-72	B-72 Dup	B-73	B-74	B-75	B-76	B-77	B-78	B-79	B-80	B-81	B-82
Sample Date					08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					4754.17	4754.19	4754.21	4754.25	4754.23	4760.03	4760.05	4760.07	4760.09	4760.11	4760.13	4760.15	4760.17	4760.19
Methylene Chloride	36,000	310,000	2.2	--	< 590	< 590	< 610	< 570	< 610	< 630	< 600	< 700	< 580	< 720	< 550	< 620	< 610	< 850
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 300	< 290	< 310	< 290	< 310	**1100**	< 300	< 350	< 290	< 360	< 280	< 310	< 300	< 420
Benzene	1,100	5,400	0.2	--	< 300	< 290	< 310	< 290	< 310	**1300**	< 300	< 350	< 290	< 360	< 280	< 310	< 300	< 420
Toluene	500,000	4,500,000	59	--	< 300	< 290	< 310	< 290	< 310	**680**	< 300	< 350	< 290	< 360	< 280	< 310	< 300	< 420
Acetone	6,100,000	63,000,000	240	--	< 590	< 590	< 610	< 570	< 610	< 630	< 600	< 700	< 580	< 720	< 550	< 620	< 610	< 850
Vinyl Chloride	60	1,700	0.0053	--	< 890	< 880	< 920	< 860	< 920	< 950	< 910	< 1000	< 860	< 1100	< 830	< 930	< 910	< 1300
Ethylbenzene	5,400	27,000	1.5	--	< 590	< 590	< 610	< 570	< 610	**880**	< 600	< 700	< 580	< 720	< 550	< 620	< 610	< 850
m+p-Xylenes	59,000	250,000	18	--	< 890	< 880	< 920	< 860	< 920	**740** J	< 910	< 1000	< 860	< 1100	< 830	< 930	< 910	< 1300
o-Xylene	69,000	300,000	19	--	< 590	< 590	< 610	< 570	< 610	**510** J	< 600	< 700	< 580	< 720	< 550	< 620	< 610	< 850
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	**31000**	ND	ND	ND	ND	**12000**	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4754.16	4754.18	4754.20	4754.24	4754.22	4760.02	4760.04	4760.06	4760.08	4760.10	4760.12	4760.14	4760.16	4760.18
Naphthalene	3,600	18,000	0.47	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
2-Methylnaphthalene	23,000	220,000	14	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Acenaphthylene	NLE	NLE	NLE	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Acenaphthene	340,000	3,300,000	410	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Dibenzofuran	7,800	100,000	11	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Diethylphthalate	4,900,000	49,000,000	470	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	**120** J	< 1200	**140** J	< 1200	**150** J	< 1200
Fluorene	230,000	2,200,000	400	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Phenanthrene	NLE	NLE	NLE	--	< 1100	**1800**	< 1200	< 1100	< 1000	< 1100	**450** J	< 1000	< 1100	< 1200	**210** J	< 1200	< 1200	< 1200
Anthracene	1,700,000	17,000,000	4,200	--	< 1100	**520** J	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Di-n-butylphthalate	610,000	6,200,000	170	--	**1300** B	**460** JB	**940** JB	**1400** B	**670** JB	**3740** JB	**1300** B	**240** JB	**230** JB	**1000** JB	**260** JB	**440** JB	**1000** JB	**860** JB
Fluoranthene	230,000	2,200,000	7,000	--	< 1100	**3400**	< 1200	< 1100	**120** J	< 1100	**820** J	**230** J	< 1100	< 1200	**310** J	< 1200	< 1200	**130** J
Pyrene	170,000	1,700,000	950	--	< 1100	**2500**	< 1200	< 1100	**120** J	< 1100	**710** J	**260** J	< 1100	< 1200	**300** J	< 1200	< 1200	**130** J
Butylbenzylphthalate	260,000	910,000	200	--	< 1100	< 1100	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Benzo(a)anthracene	150	2,100	10	--	< 1100	**1400**	< 1200	< 1100	< 1000	< 1100	**400** J	**230** J	< 1100	< 1200	**140** J	< 1200	< 1200	< 1200
Chrysene	15,000	210,000	1100	--	< 1100	**1400**	< 1200	< 1100	< 1000	< 1100	**500** J	**300** J	< 1100	< 1200	**210** J	< 1200	< 1200	< 1200
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**190** JB	**290** JB	**160** JB	**230** JB	**110** JB	**230** JB	**260** JB	**220** JB	**180** JB	**230** JB	**230** JB	**190** JB	**220** JB	**200** JB
Benzo(b)fluoranthene	150	2,100	35	--	< 1100	**1200**	< 1200	< 1100	< 1000	< 1100	**420** J	**320** J	< 1100	< 1200	**140** J	< 1200	< 1200	< 1200
Benzo(k)fluoranthene	1,500	21,000	350	--	< 1100	**1100**	< 1200	< 1100	< 1000	< 1100	**430** J	**320** J	< 1100	< 1200	**130** J	< 1200	< 1200	< 1200
Benzo(a)pyrene	150	210	4	--	< 1100	**1300**	< 1200	< 1100	< 1000	<1100	**390** J	**300** J	< 1100	< 1200	**140** J	< 1200	< 1200	< 1200
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 1100	**620** J	< 1200	< 1100	< 1000	< 1100	**230** J	**170** J	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Dibenz(a,h)anthracene	15	210	11	--	< 1100	**180** J	< 1200	< 1100	< 1000	< 1100	< 1100	< 1000	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 1100	**610** J	< 1200	< 1100	< 1000	< 1100	**230** J	**170** J	< 1100	< 1200	< 1200	< 1200	< 1200	< 1200
TICs	NLE	NLE	NLE	--	**29020**	**10090**	**15420**	**16300**	**27200**	**17380**	**13800**	**31110**	**14350**	**16300**	**21820**	**14900**	**26550**	**43530**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.064**	**0.005**	< 0.0005	< 0.0004	**0.166**	**0.039**	**0.491**	**0.137**	< 0.0004	**0.001**	**0.097**	< 0.0005	**0.751**	**0.181**
Dieldrin	0.03	0.11	0.000061	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006
4,4'-DDD	2	7.2	0.01	--	**0.025**	< 0.0007	< 0.0007	< 0.0007	**1.766**	**0.012**	**0.689**	**0.115**	< 0.0007	< 0.0007	**0.23**	< 0.0007	**0.414**	**0.28**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0006
4,4'-DDT	1.7	7	0.07	--	**0.33**	**0.008**	< 0.0013	< 0.0012	**0.2**	**0.085**	**0.156**	**0.246**	**0.003**	**0.003**	**0.054**	< 0.0013	**1.98**	**0.124**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	**0.11**	< 0.0006
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0006	**0.063**	< 0.0006

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-70	B-71	B-72	B-72 Dup	B-73	B-74	B-75	B-76	B-77	B-78	B-79	B-80	B-81	B-82
Sample Date					08/27/99	08/27/99	08/27/99	08/27/99	08/27/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**17400**	**20200**	**20100**	**19100**	**10400**	**15100**	**16400**	**11600**	**21600**	**13700**	**14300**	**9650**	**11700**	**9940**
Antimony	3.1	41	0.03	ND	< 0.485	< 0.471	< 0.493	< 0.472	< 0.415	< 0.465	< 0.483	< 0.437	< 0.496	< 0.452	< 0.451	< 0.500	< 0.534	< 0.548
Arsenic	0.61	2.4	0.0013	22.9	**22.3**	**24.2**	**43.3**	**42.1**	**10**	**16**	**21.8**	**9.59**	**28.6**	**27.1**	**13.4**	**16.4**	**16.8**	**13.1**
Barium	1,500	19,000	12	32.3	**29.3**	**22.9**	**11.3**	**11.8**	**66.1**	**29.1**	**32**	**47.4**	**18.2**	**17.1**	**41.7**	**17.7**	**16.7**	**84.2**
Beryllium	16	200	1.3	2	**2.13**	**1.91**	**2.71**	**2.56**	**0.738**	**1.42**	**1.85**	**1.15**	**2.63**	**1.86**	**1.47**	**0.64**	**1.41**	**1.38**
Cadmium	7	80	0.05	ND	**0.557**	**0.257**	**0.612**	**0.6**	**0.272**	**0.336**	**0.42**	**0.33**	**0.831**	**0.458**	**0.385**	**0.257**	**0.612**	**0.483**
Calcium	NLE	NLE	NLE	921	**997**	**694**	**481**	**426**	**439**	**752**	**599**	**750**	**702**	**482**	**629**	**941**	**635**	**1690**
Chromium	12,000	150,000	2,800,000	269	**258**	**239**	**314**	**295**	**55.6**	**171**	**221**	**134**	**330**	**208**	**143**	**74.8**	**149**	**152**
Cobalt	2.3	30	0.02	2.5	**1.4**	**1.14**	**1.17**	**1.22**	**3.33**	**1.61**	**1.3**	**1.47**	**1.25**	**0.697**	**2.33**	**1.55**	**1.4**	**1.1**
Copper	310	4,100	2.2	8	**12.8**	**14.7**	**5.72**	**2.14**	**22**	**4.34**	**14.9**	**12.4**	**24.5**	**15.1**	**1.92**	**21.8**	**30.9**	**8.95**
Iron	5,500	72,000	27	55,800	**58200**	**48000**	**67600**	**65200**	**24900**	**36800**	**52000**	**35300**	**71100**	**44200**	**42000**	**17800**	**35100**	**37600**
Lead	400	800	NLE	19.5	**17.5**	**45.5**	**13.2**	**11.3**	**34.3**	**16**	**25**	**15.1**	**32.3**	**15**	**7.38**	**33.8**	**41.3**	**14.7**
Magnesium	NLE	NLE	NLE	7,230	**8190**	**7280**	**9930**	**9420**	**1490**	**5110**	**6960**	**3980**	**9920**	**5670**	**4990**	**2270**	**4300**	**4260**
Manganese	180	2,300	2.1	90.7	**27.6**	**41.3**	**24**	**23.9**	**22.8**	**39.8**	**27.7**	**25.1**	**28**	**23.7**	**28.1**	**30.1**	**29.3**	**22.9**
Mercury	1	4.3	0.0033	ND	**0.026**	< 0.020	**0.037**	**0.043**	**0.286**	< 0.024	< 0.022	**0.036**	< 0.023	< 0.024	< 0.025	< 0.025	< 0.024	**0.034**
Nickel	150	2,000	2	8.4	**7.59**	**5.77**	**7.06**	**6.68**	**10.4**	**5.19**	**6.37**	**5.19**	**7.82**	**5.54**	**6.01**	**7.09**	**6.91**	**5.03**
Potassium	NLE	NLE	NLE	15,400	**18800**	**16100**	**23200**	**22100**	**3900**	**10800**	**16000**	**9700**	**23400**	**13500**	**11500**	**3820**	**9980**	**10500**
Selenium	39	510	0.04	1.9	**0.766**	< 0.706	< 0.739	< 0.709	**1.43**	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	**1**
Silver	39	510	0.06	1.1	< 0.727	< 0.706	< 0.739	< 0.709	< 0.622	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	< 0.822
Sodium	NLE	NLE	NLE	51.6	**171**	**166**	**156**	**187**	**199**	**471**	**126**	**127**	**662**	**86.3**	**218**	**109**	**116**	**130**
Thallium	0.078	1	0.0011	ND	< 0.727	< 0.706	< 0.739	< 0.709	< 0.622	< 0.698	< 0.725	< 0.655	< 0.745	< 0.678	< 0.677	< 0.750	< 0.801	< 0.822
Vanadium	39	510	6.3	94.1	**106**	**112**	**125**	**121**	**42.3**	**84**	**98**	**64.5**	**125**	**69.8**	**77.5**	**34**	**59.2**	**66.7**
Zinc	2,300	31,000	29	81.4	**77**	**69.5**	**61.4**	**56.8**	**61.7**	**49.9**	**54.4**	**42.3**	**84.1**	**51.3**	**43.6**	**76**	**85.2**	**52.5**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-83	B-84	B-85	B-86	B-87	B-88	B-89	B-90	B-91	B-92	B-92 Dup	B-93	B-94	B-95
Sample Date					08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					4760.21	4760.23	4760.25	4760.27	4760.29	4760.31	4762.03	4762.05	4762.07	4762.09	4762.31	4762.11	4762.13	4762.15
Methylene Chloride	36,000	310,000	2.2	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550	< 540	< 580
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	< 280	< 280	< 280	< 270	< 290
Benzene	1,100	5,400	0.2	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	< 280	< 280	< 280	< 270	< 290
Toluene	500,000	4,500,000	59	--	< 290	< 300	< 290	< 280	< 290	< 330	< 300	< 270	< 270	**630**	**300**	< 280	< 270	< 290
Acetone	6,100,000	63,000,000	240	--	< 580	< 600	< 570	< 570	< 590	< 660	**13000**	**12000**	**11000**	**12000**	**12000**	**11000**	**13000**	**13000**
Vinyl Chloride	60	1,700	0.0053	--	< 870	< 900	< 860	< 850	< 880	< 980	< 890	< 820	< 810	**670** J	**320** J	< 830	< 810	< 870
Ethylbenzene	5,400	27,000	1.5	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550	< 540	< 580
m+p-Xylenes	59,000	250,000	18	--	< 870	< 900	< 860	< 850	< 880	< 980	< 890	< 820	< 810	< 850	< 840	< 830	< 810	< 870
o-Xylene	69,000	300,000	19	--	< 580	< 600	< 570	< 570	< 590	< 660	< 590	< 540	< 540	< 570	< 560	< 550	< 540	< 580
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	ND	**3100**	ND	ND	ND	**1800**	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4760.20	4760.22	4760.24	4760.26	4760.28	4760.30	4762.02	4762.04	4762.06	4762.08	4762.30	4762.10	4762.12	4762.14
Naphthalene	3,600	18,000	0.47	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
2-Methylnaphthalene	23,000	220,000	14	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Acenaphthylene	NLE	NLE	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Acenaphthene	340,000	3,300,000	410	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Dibenzofuran	7,800	100,000	11	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Diethylphthalate	4,900,000	49,000,000	470	--	< 1100	**240** J	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**130** J	< 1100	**320** J
Fluorene	230,000	2,200,000	400	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Phenanthrene	NLE	NLE	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	**200** J	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Anthracene	1,700,000	17,000,000	4,200	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Di-n-butylphthalate	610,000	6,200,000	170	--	**1200** B	**2200** B	**1300** B	**1600** B	**310** JB	**680** JB	**350** JB	**250** JB	**360** JB	**840** JB	**1900** B	**290** JB	**280** JB	**870** JB
Fluoranthene	230,000	2,200,000	7,000	--	< 1100	< 1200	< 980	< 1000	< 1100	**280** J	< 1100	< 1000	< 1100	< 1200	< 1100	**340** J	< 1100	< 1100
Pyrene	170,000	1,700,000	950	--	< 1100	< 1200	< 980	< 1000	< 1100	**270** J	< 1100	< 1000	< 1100	< 1200	< 1100	**500** J	< 1100	< 1100
Butylbenzylphthalate	260,000	910,000	200	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Benzo(a)anthracene	150	2,100	10	--	< 1100	< 1200	< 980	< 1000	< 1100	**120** J	< 1100	< 1000	< 1100	< 1200	< 1100	**360** J	< 1100	< 1100
Chrysene	15,000	210,000	1100	--	< 1100	< 1200	< 980	< 1000	< 1100	**190** J	< 1100	< 1000	< 1100	< 1200	< 1100	**470** J	< 1100	< 1100
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**3100** B	**260** JB	**200** JB	**190** JB	**250** JB	**150** JB	**240** JB	**590** JB	**210** JB	**270** JB	**240** JB	**220** JB	**200** JB	**200** JB
Benzo(b)fluoranthene	150	2,100	35	--	< 1100	< 1200	< 980	< 1000	< 1100	**160** J	< 1100	< 1000	< 1100	< 1200	< 1100	**340** J	< 1100	< 1100
Benzo(k)fluoranthene	1,500	21,000	350	--	< 1100	< 1200	< 980	< 1000	< 1100	**130** J	< 1100	< 1000	< 1100	< 1200	< 1100	**290** J	< 1100	< 1100
Benzo(a)pyrene	150	210	4	--	< 1100	< 1200	< 980	< 1000	< 1100	**130** J	< 1100	< 1000	< 1100	< 1200	< 1100	**380** J	< 1100	< 1100
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**160** J	< 1100	< 1100
Dibenz(a,h)anthracene	15	210	11	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	< 1200	< 1100	< 1100
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 1100	< 1200	< 980	< 1000	< 1100	< 1100	< 1100	< 1000	< 1100	< 1200	< 1100	**200** J	< 1100	< 1100
TICs	NLE	NLE	NLE	--	**18630**	**23160**	**27990**	**16740**	**21890**	**35220**	**29240**	**13900**	**26340**	**20630**	**23950**	**5530**	**12590**	**28070**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.003**	**0.017**	**0.061**	< 0.0004	< 0.0005	**0.28**	**0.103**	**0.004**	**0.016**	**0.003**	**0.003**	< 0.0004	**0.008**	**0.087**
Dieldrin	0.03	0.11	0.000061	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDD	2	7.2	0.01	--	< 0.0007	**0.005**	**0.1**	< 0.0006	< 0.0007	**0.659**	**0.111**	**0.022**	**0.048**	**0.002**	**0.002**	< 0.0007	**0.01**	**0.124**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDT	1.7	7	0.07	--	**0.01**	**0.076**	**0.043**	< 0.0011	< 0.0013	**0.077**	**0.125**	**0.003**	**0.015**	**0.006**	**0.003**	< 0.0012	**0.002**	**0.157**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-83	B-84	B-85	B-86	B-87	B-88	B-89	B-90	B-91	B-92	B-92 Dup	B-93	B-94	B-95
Sample Date					08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/30/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**17900**	**18600**	**12500**	**17800**	**17000**	**15100**	**14100**	**8780**	**12400**	**17400**	**21400**	**19100**	**19700**	**15900**
Antimony	3.1	41	0.03	ND	< 0.449	< 0.507	< 0.454	< 0.498	< 0.462	< 0.464	< 0.493	< 0.460	< 0.477	< 0.510	< 0.456	< 0.529	< 0.455	< 0.414
Arsenic	0.61	2.4	0.0013	22.9	**40.4**	**21.7**	**8.21**	**21.2**	**40.7**	**18.8**	**25.3**	**7.51**	**9.26**	**31**	**26.9**	**26.5**	**21.5**	**20.1**
Barium	1,500	19,000	12	32.3	**10.5**	**15**	**57.3**	**15.1**	**83**	**32.5**	**53**	**22.8**	**47.9**	**17.6**	**30.1**	**15.2**	**81.5**	**40.1**
Beryllium	16	200	1.3	2	**2.36**	**2.15**	**1.19**	**2.02**	**2.05**	**1.74**	**1.06**	**0.632**	**0.931**	**1.47**	**1.58**	**2.32**	**1.91**	**1.49**
Cadmium	7	80	0.05	ND	**0.646**	**0.667**	**0.242**	**0.378**	**0.527**	**0.52**	**0.608**	**0.538**	**0.192**	**0.244**	**0.578**	**0.784**	**0.693**	**0.965**
Calcium	NLE	NLE	NLE	921	**624**	**735**	**655**	**484**	**1050**	**1180**	**2050**	**612**	**349**	**525**	**669**	**1140**	**1590**	**1430**
Chromium	12,000	150,000	2,800,000	269	**274**	**259**	**66.6**	**240**	**242**	**191**	**94.8**	**69.7**	**95.8**	**187**	**193**	**273**	**221**	**170**
Cobalt	2.3	30	0.02	2.5	**1.02**	**1.14**	**7.25**	**1.09**	**1.89**	**1.34**	**2.66**	**2.25**	**1.83**	**1.45**	**1.48**	**1.06**	**1.76**	**2.2**
Copper	310	4,100	2.2	8	**16.3**	**24.5**	**35.2**	**13.1**	**24.5**	**15.3**	**16.1**	**8.91**	**21.4**	**17.7**	**14.7**	**17.7**	**138**	**88.6**
Iron	5,500	72,000	27	55,800	**57700**	**53900**	**19100**	**46200**	**52700**	**44600**	**32100**	**21200**	**26400**	**38500**	**39800**	**54700**	**46200**	**39600**
Lead	400	800	NLE	19.5	**8.58**	**18.6**	**58.8**	**6.57**	**35.7**	**32.1**	**56.9**	**35.7**	**37.6**	**17.3**	**26.7**	**10.8**	**209**	**50.4**
Magnesium	NLE	NLE	NLE	7,230	**8130**	**7620**	**1610**	**6920**	**6780**	**5790**	**2850**	**1730**	**2920**	**5100**	**5370**	**8130**	**6580**	**5150**
Manganese	180	2,300	2.1	90.7	**21.5**	**30.4**	**39.4**	**31**	**49.2**	**71.6**	**40.9**	**38.8**	**24.4**	**47.2**	**54.9**	**22.8**	**80**	**53.5**
Mercury	1	4.3	0.0033	ND	< 0.026	**0.051**	**0.09**	< 0.023	**0.059**	**0.084**	**0.261**	**0.062**	**0.05**	**0.051**	<0.025	**0.063**	**0.064**	**0.099**
Nickel	150	2,000	2	8.4	**6.26**	**7.73**	**21.3**	**5.26**	**7.88**	**6.31**	**8.46**	**5.58**	**5.75**	**5.2**	**5.95**	**7.67**	**7.65**	**8.68**
Potassium	NLE	NLE	NLE	15,400	**19100**	**17800**	**3980**	**15800**	**15300**	**13400**	**6530**	**3840**	**6750**	**10600**	**11500**	**18700**	**14800**	**11400**
Selenium	39	510	0.04	1.9	< 0.673	< 0.761	**1.17**	< 0.747	< 0.692	< 0.697	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794	< 0.682	< 0.622
Silver	39	510	0.06	1.1	< 0.673	< 0.761	< 0.682	< 0.747	< 0.692	**1.09**	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794	< 0.682	< 0.622
Sodium	NLE	NLE	NLE	51.6	**96.5**	**145**	**242**	**142**	**185**	**117**	**167**	**126**	**215**	**120**	**134**	**132**	**234**	**130**
Thallium	0.078	1	0.0011	ND	< 0.673	< 0.761	< 0.682	< 0.747	< 0.692	< 0.697	< 0.739	< 0.690	< 0.716	< 0.765	< 0.684	< 0.794	< 0.682	< 0.622
Vanadium	39	510	6.3	94.1	**115**	**113**	**44.3**	**113**	**105**	**80.5**	**57.5**	**44.4**	**50.7**	**88.7**	**91**	**116**	**101**	**82**
Zinc	2,300	31,000	29	81.4	**56.4**	**76.7**	**47**	**49**	**120**	**115**	**37.1**	**82.6**	**47.9**	**57.4**	**142**	**82.8**	**316**	**94.5**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-96	B-97	B-98	B-99	B-100	B-101	B-102	B-103	B-104	B-105	B-106	B-107	B-108	B-109	B-110
Sample Date					08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99
Volatile Organic Compounds (µg/kg)																			
Lab Sample ID (VOCs only collected 24 in. bgs)					4762.17	4762.19	4762.21	4762.23	4762.25	4762.27	4762.29	4774.03	4774.05	4774.07	4774.09	4774.11	4774.13	4774.15	4774.17
Methylene Chloride	36,000	310,000	2.2	--	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530	< 1100	< 580	< 540	< 560	< 510
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270	< 530	< 290	< 270	< 280	< 260
Benzene	1,100	5,400	0.2	--	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270	< 530	< 290	< 270	< 280	< 260
Toluene	500,000	4,500,000	59	--	< 310	< 280	< 300	< 300	< 310	< 350	< 290	< 280	< 270	< 270	< 530	< 290	< 270	< 280	< 260
Acetone	6,100,000	63,000,000	240	--	**14000**	**13000**	**13000**	**14000**	**14000**	**16000**	**13000**	< 550	< 550	< 530	< 1100	< 580	< 540	< 560	< 510
Vinyl Chloride	60	1,700	0.0053	--	< 930	< 830	< 890	< 890	< 930	< 1000	< 870	< 830	< 820	< 800	< 1600	< 870	< 810	< 830	< 770
Ethylbenzene	5,400	27,000	1.5	--	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530	< 1100	< 580	< 540	< 560	< 510
m+p-Xylenes	59,000	250,000	18	--	< 930	< 830	< 890	< 890	< 930	< 1000	< 870	< 830	< 820	< 800	< 1600	< 870	< 810	< 830	< 770
o-Xylene	69,000	300,000	19	--	< 620	< 550	< 590	< 590	< 620	< 700	< 580	< 550	< 550	< 530	< 1100	< 580	< 540	< 560	< 510
TICs	NLE	NLE	NLE	--	ND	**2000**	**2500**	ND	ND	ND	ND	ND	ND	ND	ND	**2100**	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																			
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4762.16	4762.18	4762.20	4762.22	4762.24	4762.26	4762.28	4774.02	4774.04	4774.06	4774.08	4774.10	4774.12	4774.14	4774.16
Naphthalene	3,600	18,000	0.47	--	**170** J	< 1200	< 1100	< 1000	**230** J	< 1100	< 1100	< 1100	**290** J	< 1000	< 1200	< 1100	< 1100	< 1200	**200** J
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	< 1100	< 1200	< 1100
2-Methylnaphthalene	23,000	220,000	14	--	**240** J	< 1200	< 1100	< 1000	**290** J	< 1100	< 1100	< 1100	**180** J	< 1000	< 1200	< 1100	< 1100	< 1200	**120** J
Acenaphthylene	NLE	NLE	NLE	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**880** J	**150** J	**140** J	< 1100	< 1100	< 1200	**650** J
Acenaphthene	340,000	3,300,000	410	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	< 1100	< 1200	< 1100
Dibenzofuran	7,800	100,000	11	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	< 1100	< 1200	< 1100
Diethylphthalate	4,900,000	49,000,000	470	--	**400** J	**230** J	**140** J	**230** J	**140** J	**120** J	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	**180** J	< 1200	< 1100
Fluorene	230,000	2,200,000	400	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	< 1100	< 1200	< 1100
Phenanthrene	NLE	NLE	NLE	--	**350** J	< 1200	< 1100	< 1000	**140** J	< 1100	< 1100	**250** J	**590** J	**470** J	**160** J	< 1100	< 1100	< 1200	**760** J
Anthracene	1,700,000	17,000,000	4,200	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**400** J	**170** J	< 1200	< 1100	< 1100	< 1200	**350** J
Di-n-butylphthalate	610,000	6,200,000	170	--	**800** JB	**1100** JB	**790** JB	**1500** B	**260** JB	**1100** JB	**1100** JB	**1300** B	**1500** B	**560** JB	**1400** B	**660** JB	**1700** B	**1500** B	**1200** B
Fluoranthene	230,000	2,200,000	7,000	--	**1300**	**290** J	**120** J	**170** J	< 1200	< 1100	< 1100	**430** J	**2700**	**850** J	**350** J	< 1100	< 1100	< 1200	**2100**
Pyrene	170,000	1,700,000	950	--	**1100** J	**320** J	**190** J	**180** J	< 1200	< 1100	< 1100	**400** J	**3100**	**920** J	**430** J	< 1100	< 1100	< 1200	**2400**
Butylbenzylphthalate	260,000	910,000	200	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	< 1100	< 1000	< 1200	< 1100	< 1100	< 1200	< 1100
Benzo(a)anthracene	150	2,100	10	--	**620** J	**210** J	< 1100	**110** J	< 1200	< 1100	< 1100	**200** J	**2300**	**500** J	**240** J	< 1100	< 1100	< 1200	**1600**
Chrysene	15,000	210,000	1100	--	**1100** J	**270** J	**130** J	**230** J	< 1200	< 1100	< 1100	**260** J	**2600**	**660** J	**350** J	< 1100	< 1100	< 1200	**1900**
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**280** JB	**260** JB	**190** JB	**250** JB	**230** JB	**230** JB	**200** JB	**240** JB	**220** JB	**260** JB	**260** JB	**310** JB	**270** JB	**300** JB	**230** JB
Benzo(b)fluoranthene	150	2,100	35	--	**640** J	**310** J	< 1100	**250** J	**150** J	< 1100	< 1100	**210** J	**3500**	**510** J	**370** J	< 1100	< 1100	< 1200	**2500**
Benzo(k)fluoranthene	1,500	21,000	350	--	**660** J	**230** J	< 1100	**160** J	< 1200	< 1100	< 1100	**210** J	**3000**	**450** J	**270** J	< 1100	< 1100	< 1200	**2200**
Benzo(a)pyrene	150	210	4	--	**370** J	**260** J	< 1100	**120** J	< 1200	< 1100	< 1100	**190** J	**3600**	**520** J	**320** J	< 1100	< 1100	< 1200	**2600**
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	**170** J	**190** J	< 1100	< 1000	< 1200	< 1100	< 1100	**120** J	**1900**	**240** J	< 1200	< 1100	< 1100	< 1200	**960** J
Dibenz(a,h)anthracene	15	210	11	--	< 1200	< 1200	< 1100	< 1000	< 1200	< 1100	< 1100	< 1100	**730** J	< 1000	< 1200	< 1100	< 1100	< 1200	**350** J
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	**160** J	**190** J	< 1100	< 1000	< 1200	< 1100	< 1100	**130** J	**1800**	**250** J	< 1200	< 1100	< 1100	< 1200	**920** J
TICs	NLE	NLE	NLE	--	**78280**	**8740**	**23070**	**32150**	**22500**	**17120**	**15710**	**50360**	**30520**	**20170**	**14830**	**12330**	**20530**	**57660**	**23420**
Pesticides/PCBs (mg/kg)																			
4,4'-DDE	1.4	5.1	0.046	--	**0.492**	**0.003**	**0.045**	**0.021**	**0.012**	< 0.0005	**0.01**	**0.316**	**0.01**	**0.06**	**0.076**	**0.007**	< 0.0004	**0.81**	**0.064**
Dieldrin	0.03	0.11	0.000061	--	< 0.0006	< 0.0006	**0.002**	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	**0.002**	< 0.0005
4,4'-DDD	2	7.2	0.01	--	**1.165**	< 0.0007	**0.069**	**0.006**	**0.011**	< 0.0007	**0.007**	**0.381**	< 0.0006	**0.081**	**0.05**	**0.003**	< 0.0006	**1.031**	**0.084**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005
4,4'-DDT	1.7	7	0.07	--	**0.699**	**0.014**	**0.148**	**0.006**	**0.007**	< 0.0013	< 0.0013	**0.38**	**0.051**	**0.231**	**0.085**	**0.007**	< 0.0012	**0.03**	**0.061**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0005

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-96	B-97	B-98	B-99	B-100	B-101	B-102	B-103	B-104	B-105	B-106	B-107	B-108	B-109	B-110
Sample Date					08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	08/31/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99	09/07/99
Metals (mg/kg)																			
Aluminum	7,700	99,000	2,300	15,200	**12900**	**15100**	**12900**	**14900**	**16800**	**21800**	**24700**	**18200**	**12800**	**15700**	**17900**	**22700**	**17800**	**18900**	**10200**
Antimony	3.1	41	0.03	ND	**1.88**	< 0.413	< 0.334	< 0.420	< 0.446	**0.455**	< 0.463	**0.461**	< 0.431	< 0.416	< 0.461	< 0.456	< 0.448	< 0.431	< 0.384
Arsenic	0.61	2.4	0.0013	22.9	**14.5**	**15.5**	**9.72**	**11.3**	**20.6**	**21.7**	**32.1**	**23.6**	**8.63**	**13.5**	**13.9**	**26**	**28.9**	**30.3**	**7.6**
Barium	1,500	19,000	12	32.3	**53.1**	**25.5**	**27.8**	**42.5**	**29.7**	**31.4**	**17.3**	**75.7**	**35.3**	**41.1**	**42.2**	**13.1**	**10.9**	**41.6**	**29.2**
Beryllium	16	200	1.3	2	**0.907**	**1.1**	**1.03**	**1.51**	**1.8**	**1.73**	**2.71**	**1.95**	**0.797**	**1.12**	**1.32**	**2.81**	**1.4**	**1.76**	**0.709**
Cadmium	7	80	0.05	ND	**0.648**	**0.281**	**0.295**	**0.336**	**0.522**	**0.331**	**0.924**	**1.43**	**0.411**	**0.44**	**0.443**	**0.84**	**0.269**	**0.835**	**0.348**
Calcium	NLE	NLE	NLE	921	**1120**	**647**	**583**	**762**	**842**	**736**	**964**	**1340**	**528**	**854**	**984**	**808**	**429**	**1230**	**574**
Chromium	12,000	150,000	2,800,000	269	**101**	**124**	**129**	**84.7**	**206**	**210**	**338**	**211**	**68.6**	**96.8**	**132**	**333**	**178**	**213**	**61.7**
Cobalt	2.3	30	0.02	2.5	**2.91**	**2.41**	**1.92**	**2.56**	**2.35**	**1.58**	**1.32**	**2.03**	**4.18**	**3.27**	**4.12**	**1.22**	**1.22**	**2.03**	**3.21**
Copper	310	4,100	2.2	8	**181**	**4.44**	**4.51**	**3.31**	**14.2**	**16.4**	**20.9**	**34**	**3.68**	**16.1**	**9.78**	**2.95**	**23.1**	**33.4**	**3.68**
Iron	5,500	72,000	27	55,800	**25600**	**39400**	**29000**	**35600**	**45500**	**39000**	**74100**	**45500**	**31800**	**33600**	**39500**	**66600**	**33800**	**43500**	**28800**
Lead	400	800	NLE	19.5	**79.5**	**11.3**	**18.3**	**11.6**	**22.9**	**28.3**	**10.3**	**60.1**	**13.4**	**28.3**	**39.9**	**11.2**	**4.84**	**83.1**	**15.7**
Magnesium	NLE	NLE	NLE	7,230	**2950**	**2880**	**3060**	**3530**	**5950**	**5690**	**10500**	**6060**	**1210**	**3260**	**4200**	**9940**	**4880**	**6050**	**1260**
Manganese	180	2,300	2.1	90.7	**123**	**31.9**	**31.7**	**80**	**25.5**	**55.6**	**42.7**	**44.1**	**89.5**	**64.6**	**123**	**33.7**	**31.7**	**63.5**	**71.1**
Mercury	1	4.3	0.0033	ND	**0.162**	**0.094**	**0.243**	**0.084**	**0.131**	**0.047**	< 0.026	**0.378**	**0.047**	**0.141**	**0.051**	**0.046**	< 0.019	**0.068**	< 0.020
Nickel	150	2,000	2	8.4	**10.4**	**9.02**	**6.54**	**8.89**	**9.27**	**6.15**	**7.82**	**10.6**	**10.5**	**9.53**	**8.91**	**6.94**	**4.99**	**8.06**	**8.78**
Potassium	NLE	NLE	NLE	15,400	**6190**	**5850**	**6300**	**6720**	**13600**	**12000**	**24100**	**13500**	**2580**	**6920**	**9120**	**23200**	**9910**	**13500**	**2630**
Selenium	39	510	0.04	1.9	**0.698**	**0.706**	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	< 0.659	< 0.646	< 0.624	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576
Silver	39	510	0.06	1.1	**0.719**	< 0.619	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	**0.856**	< 0.646	< 0.624	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576
Sodium	NLE	NLE	NLE	51.6	**146**	**174**	**120**	**169**	**142**	**136**	**181**	**117**	**131**	**243**	**143**	**138**	**100**	**93.3**	**75.9**
Thallium	0.078	1	0.0011	ND	< 0.608	< 0.619	< 0.501	< 0.630	< 0.669	< 0.592	< 0.695	< 0.659	< 0.646	< 0.624	< 0.691	< 0.684	< 0.672	< 0.647	< 0.576
Vanadium	39	510	6.3	94.1	**59.7**	**95.5**	**75.9**	**50.6**	**96.8**	**101**	**134**	**98.7**	**75**	**63.2**	**71.9**	**140**	**85.3**	**104**	**67.6**
Zinc	2,300	31,000	29	81.4	**402**	**47.2**	**62**	**92.3**	**50**	**65**	**69.7**	**102**	**49**	**61.3**	**71.3**	**62.8**	**43**	**129**	**54.6**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-111	B-112	B-112 Dup	B-113	B-114	B-115	B-116	B-117	B-118	B-119	B-120	B-121	B-122	B-123
Sample Date					09/07/99	09/07/99	09/07/99	09/07/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99
Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (VOCs only collected 24 in. bgs)					4774.19	4774.21	4774.25	4774.23	4777.03	4777.05	4777.07	4777.09	4777.11	4777.13	4777.15	4777.17	4777.19	4777.21
Methylene Chloride	36,000	310,000	2.2	--	< 590	**1600**	< 730	< 600	< 570	< 550	< 570	< 580	< 600	< 550	**290** J	**360** J	**350** J	**2500**
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 290	< 370	< 360	< 300	< 280	< 270	< 280	< 290	< 300	< 270	< 280	< 300	< 290	< 300
Benzene	1,100	5,400	0.2	--	< 290	< 370	< 360	< 300	< 280	< 270	< 280	< 290	< 300	< 270	< 280	< 300	< 290	< 300
Toluene	500,000	4,500,000	59	--	< 290	< 370	< 360	< 300	< 280	< 270	< 280	< 290	< 300	< 270	< 280	< 300	< 290	< 300
Acetone	6,100,000	63,000,000	240	--	< 590	< 740	< 730	< 600	< 570	< 550	< 570	< 580	< 600	< 550	< 550	< 590	< 570	< 590
Vinyl Chloride	60	1,700	0.0053	--	< 880	< 1100	< 1100	< 900	< 850	< 820	< 850	< 860	< 910	< 820	< 830	< 890	< 860	< 890
Ethylbenzene	5,400	27,000	1.5	--	< 590	< 740	< 730	< 600	< 570	< 550	< 570	< 580	< 600	< 550	< 550	< 590	< 570	< 590
m+p-Xylenes	59,000	250,000	18	--	< 880	< 1100	< 1100	< 900	< 850	< 820	< 850	< 860	< 910	< 820	< 830	< 890	< 860	< 890
o-Xylene	69,000	300,000	19	--	< 590	< 740	< 730	< 600	< 570	< 550	< 570	< 580	< 600	< 550	< 550	< 590	< 570	< 590
TICs	NLE	NLE	NLE	--	**3400**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																		
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4774.18	4774.20	4774.24	4774.22	4777.02	4777.04	4777.06	4777.08	4777.10	4777.12	4777.14	4777.16	4777.18	4777.20
Naphthalene	3,600	18,000	0.47	--	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	**120** J
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100
2-Methylnaphthalene	23,000	220,000	14	--	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	**180** J	**240** J	< 12000	< 1100
Acenaphthylene	NLE	NLE	NLE	--	**150** J	< 1200	**100** J	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	**7200** JD	< 1100
Acenaphthene	340,000	3,300,000	410	--	< 1100	< 1200	< 1000	< 1100	**530** J	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	**190** J	< 12000	< 1100
Dibenzofuran	7,800	100,000	11	--	< 1100	< 1200	< 1000	< 1100	**330** J	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100
Diethylphthalate	4,900,000	49,000,000	470	--	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100
Fluorene	230,000	2,200,000	400	--	< 1100	< 1200	< 1000	< 1100	**800** J	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	**260** J	**1700** JD	< 1100
Phenanthrene	NLE	NLE	NLE	--	**420** J	< 1200	< 1000	< 1100	**8300** J	**350** J	**340** J	**280** J	< 1200	< 5000	**250** J	**540** J	**15000** D	**470** J
Anthracene	1,700,000	17,000,000	4,200	--	< 1100	**150** J	**190** J	< 1100	**2200**	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	**3500** JD	< 1100
Di-n-butylphthalate	610,000	6,200,000	170	--	**520** JB	**1500** B	**1400** B	**2300** B	**730** JB	**640** JB	**1400** B	**450** JB	**600** JB	**510** JBD	**550** JB	**1400** B	**1400** JBD	**1900** B
Fluoranthene	230,000	2,200,000	7,000	--	**630** J	**450** J	**690** J	< 1100	**9300**	**580** J	**600** J	**590** J	< 1200	< 5000	**320** J	< 1100	**13000** D	**220** J
Pyrene	170,000	1,700,000	950	--	**740** J	**1000** J	**1300**	< 1100	**7100**	**720** J	**640** J	**590** J	< 1200	**730** JD	**440** J	< 1100	**28000** D	**210** J
Butylbenzylphthalate	260,000	910,000	200	--	< 1100	< 1200	< 1000	< 1100	< 1100	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100
Benzo(a)anthracene	150	2,100	10	--	**370** J	**750** J	**910** J	< 1100	**4100**	**280** J	**310** J	**300** J	< 1200	< 5000	**220** J	< 1100	**11000** JD	< 1100
Chrysene	15,000	210,000	1100	--	**500** J	**1800**	**2100**	< 1100	**3900**	**400** J	**410** J	**370** J	< 1200	< 5000	**310** J	< 1100	**14000** D	**140** J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**200** JB	**180** JB	**380** JB	**240** JB	**300** JB	**190** JB	**310** JB	**300** JB	**150** JB	**1500** JBD	**150** JB	**340** JB	< 12000	**140** JB
Benzo(b)fluoranthene	150	2,100	35	--	**390** J	**2200**	**2300**	< 1100	**3100**	**270** J	**420** J	**310** J	< 1200	< 5000	**170** J	< 1100	**7700** JD	< 1100
Benzo(k)fluoranthene	1,500	21,000	350	--	**320** J	**1300**	**1600**	< 1100	**2800**	**290** J	**320** J	**270** J	< 1200	< 5000	**180** J	< 1100	**8500** JD	< 1100
Benzo(a)pyrene	150	210	4	--	**390** J	**830** J	**930** J	< 1100	**3300**	**300** J	**330** J	**300** J	< 1200	< 5000	**210** J	< 1100	**11000** JD	< 1100
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	**200** J	**450** J	**480** J	< 1100	**1700**	**160** J	< 1100	**130** J	< 1200	< 5000	< 1100	< 1100	**2700** JD	< 1100
Dibenz(a,h)anthracene	15	210	11	--	< 1100	< 1200	**140** J	< 1100	**680** J	< 1000	< 1100	< 1100	< 1200	< 5000	< 1100	< 1100	< 12000	< 1100
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	**220** J	**420** J	**440** J	< 1100	**1700**	**170** J	< 1100	**120** J	< 1200	< 5000	< 1100	< 1100	**3100** JD	< 1100
TICs	NLE	NLE	NLE	--	**14680**	**22850**	**32270**	**19870**	**34740**	**13400**	**19730**	**31460**	**43390**	**5300**	**14250**	**49390**	**108500**	**30920**
Pesticides/PCBs (mg/kg)																		
4,4'-DDE	1.4	5.1	0.046	--	**0.095**	**0.022**	**0.014**	**0.069**	**0.062**	**0.012**	**0.013**	**0.131**	**0.015**	**0.052**	< 0.0004	**0.041**	**0.059**	**0.015**
Dieldrin	0.03	0.11	0.000061	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	**0.002**	< 0.0005	< 0.0005	< 0.0006	< 0.0005
4,4'-DDD	2	7.2	0.01	--	**0.062**	**0.057**	**0.042**	**0.138**	**0.008**	**0.085**	**0.019**	**0.183**	**0.024**	**0.023**	**0.007**	**0.068**	**0.057**	**0.018**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005
4,4'-DDT	1.7	7	0.07	--	**0.065**	**0.013**	**0.009**	**0.06**	**0.016**	**0.019**	**0.029**	**0.027**	**0.013**	**0.103**	**0.006**	**0.02**	**0.057**	**0.003**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	**0.005**	< 0.0006	< 0.0006	**0.005**	< 0.0005	< 0.0005	< 0.0006	< 0.0005
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0005	< 0.0006	< 0.0005	< 0.0005	< 0.0006	< 0.0005	**0.004**	< 0.0006	< 0.0006	**0.003**	< 0.0005	< 0.0005	< 0.0006	< 0.0005

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-111	B-112	B-112 Dup	B-113	B-114	B-115	B-116	B-117	B-118	B-119	B-120	B-121	B-122	B-123
Sample Date					09/07/99	09/07/99	09/07/99	09/07/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99	09/08/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**14900**	**17400**	**10400**	**12000**	**13600**	**11000**	**12500**	**10800**	**17200**	**7840**	**11100**	**10200**	**19500**	**12000**
Antimony	3.1	41	0.03	ND	< 0.431	< 0.486	< 0.447	< 0.467	< 0.499	< 0.434	< 0.453	< 0.438	< 0.463	**0.571**	< 0.424	< 0.456	< 0.488	< 0.358
Arsenic	0.61	2.4	0.0013	22.9	**11.5**	**17.6**	**9.67**	**16.8**	**24.9**	**12.2**	**16.2**	**11.8**	**24.7**	**5.11**	**9.25**	**9.15**	**38.8**	**24**
Barium	1,500	19,000	12	32.3	**34.1**	**114**	**98.5**	**10.4**	**28.6**	**30.5**	**63.7**	**27.6**	**19.3**	**50.1**	**26.2**	**23.2**	**35.5**	**28.3**
Beryllium	16	200	1.3	2	**0.994**	**1.54**	**1.07**	**1.21**	**1.67**	**1.08**	**1.34**	**1.27**	**1.15**	**0.397**	**1.03**	**1.08**	**2.31**	**1.69**
Cadmium	7	80	0.05	ND	**0.299**	**0.563**	**0.335**	**0.324**	**0.516**	**0.195**	**0.493**	**2.26**	< 0.116	**0.229**	**0.181**	**0.255**	**0.705**	**0.39**
Calcium	NLE	NLE	NLE	921	**722**	**1330**	**1200**	**592**	**850**	**1390**	**14200**	**1530**	**773**	**6010**	**957**	**936**	**1800**	**1820**
Chromium	12,000	150,000	2,800,000	269	**92**	**133**	**97.6**	**149**	**186**	**92.4**	**189**	**124**	**159**	**41**	**81.7**	**84.7**	**276**	**176**
Cobalt	2.3	30	0.02	2.5	**2.46**	**6.36**	**3.28**	**1.22**	**1.11**	**2.27**	**3.09**	**5.14**	**1.08**	**9.12**	**2.5**	**2.45**	**1.45**	**2.32**
Copper	310	4,100	2.2	8	**4.95**	**19.5**	**11.5**	**2.18**	**53.6**	**18.2**	**30.6**	**38.6**	**15.2**	**60**	**14.3**	**16.4**	**41.9**	**43.5**
Iron	5,500	72,000	27	55,800	**29400**	**35100**	**24600**	**30500**	**41800**	**30800**	**41200**	**33600**	**31100**	**17900**	**30800**	**32500**	**63500**	**46100**
Lead	400	800	NLE	19.5	**19**	**30.2**	**18.6**	**14.8**	**66.7**	**16.4**	**38.3**	**47**	**15.9**	**57.1**	**18.7**	**14.2**	**38.8**	**22**
Magnesium	NLE	NLE	NLE	7,230	**3070**	**3670**	**2720**	**3900**	**5730**	**3450**	**5480**	**3820**	**4600**	**4750**	**3240**	**3270**	**8570**	**5590**
Manganese	180	2,300	2.1	90.7	**59.7**	**51.9**	**25.5**	**29.6**	**50.6**	**62.1**	**785**	**89.8**	**34.2**	**162**	**68.5**	**63.6**	**48.6**	**67.6**
Mercury	1	4.3	0.0033	ND	< 0.018	< 0.029	< 0.018	< 0.025	< 0.024	< 0.022	< 0.021	< 0.022	< 0.027	< 0.022	< 0.021	< 0.022	< 0.023	< 0.023
Nickel	150	2,000	2	8.4	**6.89**	**15.3**	**9.27**	**3.9**	**6.55**	**7.13**	**10.2**	**14.1**	**4.83**	**18.3**	**7.84**	**7.94**	**9.67**	**6.8**
Potassium	NLE	NLE	NLE	15,400	**6430**	**7940**	**5880**	**8640**	**12300**	**7030**	**9190**	**7840**	**8370**	**1400**	**6470**	**6600**	**18400**	**12900**
Selenium	39	510	0.04	1.9	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537
Silver	39	510	0.06	1.1	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537
Sodium	NLE	NLE	NLE	51.6	**107**	**223**	**148**	**48.2**	**93.9**	**191**	**346**	**190**	**188**	**433**	**154**	**90.8**	**160**	**416**
Thallium	0.078	1	0.0011	ND	< 0.647	< 0.729	< 0.671	< 0.701	< 0.748	< 0.650	< 0.680	< 0.658	< 0.694	< 0.581	< 0.636	< 0.685	< 0.732	< 0.537
Vanadium	39	510	6.3	94.1	**54.5**	**70.2**	**49.5**	**67.7**	**73**	**50.9**	**70.3**	**57.7**	**77.5**	**39.6**	**51.3**	**50.1**	**116**	**44.6**
Zinc	2,300	31,000	29	81.4	**42.2**	**99.6**	**60.6**	**35.8**	**99.8**	**73**	**126**	**226**	**77.4**	**144**	**53.5**	**46**	**106**	**83.7**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-124		B-125		B-126		B-127		B-128		B-129		B-130		B-131		B-132		B-133		B-134		B-134 Dup		B-135		B-136	
Sample Date					09/08/99		09/08/99		09/08/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99		09/15/99	
Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (VOCs only collected 24 in. bgs)					4777.23		4777.25		4777.27		4790.03		4790.05		4790.07		4790.09		4790.11		4790.13		4790.15		4790.17		4790.29		4790.19		4790.21	
Methylene Chloride	36,000	310,000	2.2	--	**1200**		**710**		**5700**		< 600		< 730		< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660	
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 290		< 260		< 280		< 300		< 370		< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330	
Benzene	1,100	5,400	0.2	--	< 290		< 260		< 280		< 300		< 370		< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330	
Toluene	500,000	4,500,000	59	--	< 290		< 260		< 280		< 300		< 370		< 300		< 330		< 320		< 330		< 300		< 320		< 280		< 310		< 330	
Acetone	6,100,000	63,000,000	240	--	< 580		< 530		< 570		< 600		< 730		< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660	
Vinyl Chloride	60	1,700	0.0053	--	< 870		< 790		< 850		< 900		< 1100		< 910		< 980		< 960		< 980		< 910		< 960		< 850		< 940		< 990	
Ethylbenzene	5,400	27,000	1.5	--	< 580		< 530		< 570		< 600		< 730		< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660	
m+p-Xylenes	59,000	250,000	18	--	< 870		< 790		< 850		< 900		< 1100		< 910		< 980		< 960		< 980		< 910		< 960		< 850		< 940		< 990	
o-Xylene	69,000	300,000	19	--	< 580		< 530		< 570		< 600		< 730		< 600		< 650		< 640		< 650		< 610		< 640		< 570		< 630		< 660	
TICs	NLE	NLE	NLE	--	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds (µg/kg)																																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4777.22		4777.24		4777.26		4790.02		4790.04		4790.06		4790.08		4790.10		4790.12		4790.14		4790.16		4790.28		4790.18		4790.20	
Naphthalene	3,600	18,000	0.47	--	< 1000		< 1200		< 5900		**670**	J	< 5300		< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1000		< 1200		< 5900		< 1100		< 5300		< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
2-Methylnaphthalene	23,000	220,000	14	--	< 1000		< 1200		< 5900		**390**	J	< 5300		< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Acenaphthylene	NLE	NLE	NLE	--	< 1000		< 1200		< 5900		**1600**		< 5300		**340**	J	< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Acenaphthene	340,000	3,300,000	410	--	< 1000		< 1200		**3200**	JD	**840**	J	< 5300		< 1600		< 1100		**660**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Dibenzofuran	7,800	100,000	11	--	< 1000		< 1200		< 5900		**460**	J	< 5300		< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Diethylphthalate	4,900,000	49,000,000	470	--	< 1000		< 1200		< 5900		< 1100		< 5300		< 1600		< 1100		< 5600		**180**	J	< 5300		< 1100		**440**	J	< 1100		< 1100	
Fluorene	230,000	2,200,000	400	--	< 1000		< 1200		**1000**	JD	**1000**	J	< 5300		**170**	J	< 1100		**570**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Phenanthrene	NLE	NLE	NLE	--	**170**	J	**220**	J	**6400**	D	**9800**		< 5300		**1400**	J	< 1100		**7800**	D	< 1200		< 5300		< 1100		**160**	J	< 1100		< 1100	
Anthracene	1,700,000	17,000,000	4,200	--	< 1000		< 1200		**1600**	JD	**3400**		< 5300		**310**	J	< 1100		**1700**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Di-n-butylphthalate	610,000	6,200,000	170	--	**1600**	B	**1800**	B	**1800**	JBD	**550**	JB	**850**	JBD	**750**	JB	**1400**	B	**1300**	JBD	**1400**	B	**2700**	JBD	**1300**	B	**2100**	B	**1700**	B	**740**	JB
Fluoranthene	230,000	2,200,000	7,000	--	**190**	J	**430**	J	**6300**	D	**32000**	D	< 5300		**2100**		< 1100		**16000**	D	**180**	J	< 5300		**180**	J	**290**	J	< 1100		**120**	J
Pyrene	170,000	1,700,000	950	--	**250**	J	**380**	J	**12000**	D	**29000**	D	< 5300		**2200**		< 1100		**14000**	D	**190**	J	< 5300		**230**	J	**340**	J	< 1100		**120**	J
Butylbenzylphthalate	260,000	910,000	200	--	< 1000		< 1200		< 5900		< 1100		< 5300		< 1600		< 1100		< 5600		< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Benzo(a)anthracene	150	2,100	10	--	**120**	J	**180**	J	**5400**	JD	**13000**		< 5300		**1200**	J	< 1100		**7500**	D	< 1200		< 5300		**120**	J	**180**	J	< 1100		< 1100	
Chrysene	15,000	210,000	1100	--	**180**	J	**240**	J	**7200**	D	**11000**		< 5300		**1400**	J	< 1100		**8500**	D	**140**	J	< 5300		**180**	J	**230**	J	< 1100		< 1100	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**180**	JB	**230**	JB	< 5900		**190**	JB	< 5300		**300**	JB	**160**	JB	**2000**	JBD	**150**	JB	< 5300		**140**	JB	**240**	JB	**260**	JB	**200**	JB
Benzo(b)fluoranthene	150	2,100	35	--	**130**	J	**210**	J	**3700**	JD	**11000**		< 5300		**900**	J	< 1100		**9500**	D	< 1200		< 5300		**140**	J	**160**	J	< 1100		< 1100	
Benzo(k)fluoranthene	1,500	21,000	350	--	**100**	J	**200**	J	**3300**	JD	**9100**		< 5300		**1000**	J	< 1100		**8000**	D	< 1200		< 5300		**120**	J	**180**	J	< 1100		< 1100	
Benzo(a)pyrene	150	210	4	--	**140**	J	**190**	J	**5500**	JD	**12000**		< 5300		**1200**	J	< 1100		**8600**	D	**120**	J	< 5300		**150**	J	**190**	J	< 1100		< 1100	
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	< 1000		< 1200		**1800**	JD	**4400**		< 5300		**580**	J	< 1100		**3000**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Dibenz(a,h)anthracene	15	210	11	--	< 1000		< 1200		**780**	JD	**2000**		< 5300		**160**	J	< 1100		**920**	JD	< 1200		< 5300		< 1100		< 1100		< 1100		< 1100	
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	< 1000		< 1200		**2000**	JD	**3700**		< 5300		**650**	J	< 1100		**2800**	JD	< 1200		< 5300		< 1100		**120**	J	< 1100		< 1100	
TICs	NLE	NLE	NLE	--	**24650**		**40530**		**62400**		**46000**		**16700**		**18900**		**9850**		**26800**		**14150**		**10200**		**24440**		**20820**		**11790**		**15380**	
Pesticides/PCBs (mg/kg)																																
4,4'-DDE	1.4	5.1	0.046	--	< 0.0004		**0.005**		< 0.0005		**0.019**		**0.007**		**0.01**		< 0.0005		**0.064**		**0.008**		**0.011**		**0.0017**		**0.014**		< 0.0005		**0.03**	
Dieldrin	0.03	0.11	0.000061	--	< 0.0005		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDD	2	7.2	0.01	--	< 0.0006		**0.005**		**0.036**		**0.013**		**0.004**		**0.022**		< 0.0007		**0.067**		**0.007**		**0.009**		**0.014**		**0.012**		< 0.0007		**0.013**	
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0005		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
4,4'-DDT	1.7	7	0.07	--	< 0.0011		**0.005**		**0.064**		**0.021**		**0.008**		**0.013**		< 0.0013		**0.313**		**0.004**		**0.021**		**0.012**		**0.012**		< 0.0013		**0.008**	
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0005		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0005		< 0.0006		< 0.0006		< 0.0005		< 0.0005		< 0.0008		< 0.0006		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0005		< 0.0006		< 0.0006	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-124	B-125	B-126	B-127	B-128	B-129	B-130	B-131	B-132	B-133	B-134	B-134 Dup	B-135	B-136
Sample Date					09/08/99	09/08/99	09/08/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99	09/15/99
Metals (mg/kg)																		
Aluminum	7,700	99,000	2,300	15,200	**10500**	**15100**	**7010**	**10500**	**13300**	**16000**	**16500**	**5600**	**17800**	**17400**	**15300**	**14100**	**13100**	**13600**
Antimony	3.1	41	0.03	ND	< 0.367	< 0.498	< 0.470	**16.7**	< 0.444	< 0.503	< 0.478	**0.793**	< 0.444	< 0.463	< 0.474	< 0.447	< 0.488	< 0.449
Arsenic	0.61	2.4	0.0013	22.9	**9.92**	**22.1**	**9.23**	**20.7**	**25.4**	**16.1**	**24.1**	**6.7**	**28**	**26.9**	**20.6**	**50.6**	**21.1**	**17**
Barium	1,500	19,000	12	32.3	**24.3**	**24.5**	**24.8**	**122**	**22.8**	**47.9**	**32.4**	**45.9**	**33.8**	**92.3**	**40.2**	**39.1**	**31.4**	**35.6**
Beryllium	16	200	1.3	2	**1.02**	**2.03**	**0.691**	**1.62**	**1.17**	**1.59**	**1.85**	**0.574**	**2.07**	**2.01**	**1.59**	**1.69**	**1.05**	**1.47**
Cadmium	7	80	0.05	ND	**0.201**	**0.485**	**0.283**	**0.523**	**0.394**	**0.426**	**0.288**	**0.745**	**0.34**	**0.837**	**0.626**	**0.819**	**0.558**	**0.46**
Calcium	NLE	NLE	NLE	921	**1610**	**2460**	**2690**	**13900**	**1480**	**6480**	**1190**	**2500**	**1640**	**1880**	**1760**	**1650**	**1250**	**1260**
Chromium	12,000	150,000	2,800,000	269	**92.4**	**215**	**51.1**	**140**	**189**	**193**	**221**	**40.6**	**241**	**222**	**177**	**187**	**134**	**151**
Cobalt	2.3	30	0.02	2.5	**2.16**	**1.47**	**2.5**	**27.4**	**0.802**	**3.38**	**1.03**	**4.55**	**1.37**	**1.66**	**2.13**	**2.23**	**2.87**	**2.86**
Copper	310	4,100	2.2	8	**14.1**	**14.4**	**20**	**277**	**21.3**	**17.2**	**21.6**	**60.6**	**20.5**	**49.5**	**45.6**	**49.7**	**97.6**	**316**
Iron	5,500	72,000	27	55,800	**30200**	**55200**	**22200**	**34000**	**44100**	**48600**	**46300**	**15100**	**52200**	**47600**	**41400**	**45200**	**33700**	**36900**
Lead	400	800	NLE	19.5	**11.6**	**23.6**	**32**	**181**	**18.1**	**26.6**	**38.6**	**126**	**26.5**	**77.2**	**93.2**	**79.5**	**442**	**59.8**
Magnesium	NLE	NLE	NLE	7,230	**3180**	**7120**	**2290**	**4760**	**5710**	**5420**	**6440**	**1440**	**7370**	**6790**	**5810**	**5390**	**3410**	**4550**
Manganese	180	2,300	2.1	90.7	**135**	**70.1**	**86.6**	**1110**	**38**	**583**	**38.9**	**136**	**67.4**	**149**	**97.6**	**79.6**	**175**	**54.8**
Mercury	1	4.3	0.0033	ND	**0.033**	< 0.028	**0.029**	**0.047**	**0.032**	< 0.034	< 0.027	**0.094**	< 0.024	**0.156**	**0.031**	< 0.023	< 0.024	**0.047**
Nickel	150	2,000	2	8.4	**6.8**	**7.39**	**6.93**	**29.9**	**5.64**	**10.1**	**5.28**	**9.94**	**6.64**	**7.49**	**8.27**	**7.45**	**10.4**	**8.54**
Potassium	NLE	NLE	NLE	15,400	**6250**	**15900**	**3920**	**4990**	**12900**	**10700**	**13800**	**1950**	**16000**	**15000**	**11500**	**11700**	**6710**	**9740**
Selenium	39	510	0.04	1.9	< 0.550	< 0.747	< 0.705	< 0.586	**1.05**	< 0.755	< 0.716	< 0.696	**0.918**	< 0.694	< 0.711	< 0.670	**1.23**	< 0.673
Silver	39	510	0.06	1.1	< 0.550	< 0.747	< 0.705	< 0.586	< 0.666	< 0.755	< 0.716	< 0.696	< 0.667	< 0.694	< 0.711	< 0.670	< 0.731	< 0.673
Sodium	NLE	NLE	NLE	51.6	**367**	**104**	**126**	**268**	**251**	**155**	**121**	**120**	**123**	**153**	**138**	**119**	**88.7**	**181**
Thallium	0.078	1	0.0011	ND	< 0.550	< 0.747	< 0.705	< 0.586	< 0.666	< 0.755	< 0.716	< 0.696	< 0.667	< 0.694	< 0.711	< 0.670	< 0.731	< 0.673
Vanadium	39	510	6.3	94.1	**50.5**	**65.1**	**39.5**	**52.3**	**69.4**	**83.4**	**102**	**32.3**	**106**	**106**	**84.4**	**89.6**	**65.1**	**78**
Zinc	2,300	31,000	29	81.4	**42.9**	**68.8**	**54.7**	**725**	**66.3**	**129**	**58**	**149**	**78.6**	**250**	**125**	**142**	**283**	**74.5**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-137	B-138	B-139	B-140	B-141	B-142	B-143	B-144	B-145	B-146	B-147	B-148
Sample Date					09/15/99	09/15/99	09/15/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99
Volatile Organic Compounds (µg/kg)																
Lab Sample ID (VOCs only collected 24 in. bgs)					4790.23	4790.25	4790.27	4793.03	4793.05	4793.07	4793.09	4793.11	4793.13	4793.15	4793.17	4793.19
Methylene Chloride	36,000	310,000	2.2	--	< 550	< 600	< 690	**1500**	**810**	**580**	**500** J	**410** J	< 590	< 600	< 580	< 340
cis-1,2-Dichloroethene	16,000	200,000	0.82	--	< 270	< 300	< 350	< 300	< 290	< 290	< 300	< 300	< 300	< 300	< 290	< 330
Benzene	1,100	5,400	0.2	--	< 270	< 300	< 350	< 300	< 290	< 290	< 300	< 300	< 300	< 300	< 290	< 330
Toluene	500,000	4,500,000	59	--	< 270	< 300	< 350	< 300	< 290	< 290	< 300	< 300	< 300	< 300	< 290	< 330
Acetone	6,100,000	63,000,000	240	--	< 550	< 600	< 690	< 600	< 580	< 580	< 610	< 590	< 590	< 600	< 580	< 660
Vinyl Chloride	60	1,700	0.0053	--	< 820	< 900	< 1000	< 900	< 870	< 870	< 910	< 890	< 890	< 890	< 880	< 980
Ethylbenzene	5,400	27,000	1.5	--	< 550	< 600	< 690	< 600	< 580	< 580	< 610	< 590	< 590	< 600	< 580	< 660
m+p-Xylenes	59,000	250,000	18	--	< 820	< 900	< 1000	< 900	< 870	< 870	< 910	< 890	< 890	< 890	< 880	< 980
o-Xylene	69,000	300,000	19	--	< 550	< 600	< 690	< 600	< 580	< 580	< 610	< 590	< 590	< 600	< 580	< 660
TICs	NLE	NLE	NLE	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (µg/kg)																
Lab Sample ID (All analysis except VOCs - collected 0 to 12 in. bgs)					4790.22	4790.24	4790.26	4793.02	4793.04	4793.06	4793.08	4793.10	4793.12	4793.14	4793.16	4793.18
Naphthalene	3,600	18,000	0.47	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
n-Nitrosodiphenylamine	99,000	350,000	57	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
2-Methylnaphthalene	23,000	220,000	14	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Acenaphthylene	NLE	NLE	NLE	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Acenaphthene	340,000	3,300,000	410	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Dibenzofuran	7,800	100,000	11	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Diethylphthalate	4,900,000	49,000,000	470	--	< 1200	**270** J	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Fluorene	230,000	2,200,000	400	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Phenanthrene	NLE	NLE	NLE	--	**310** J	< 1200	**230** J	**280** J	**270** J	**250** J	< 1200	< 1000	< 1200	**410** J	< 1100	< 1100
Anthracene	1,700,000	17,000,000	4,200	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Di-n-butylphthalate	610,000	6,200,000	170	--	**1600** B	**2700** B	**730** JB	**1500** B	**520** JB	**1500** B	**520** JB	**2400** B	**2200** B	**1700** B	**1600** B	**1100** JB
Fluoranthene	230,000	2,200,000	7,000	--	**550** J	< 1200	**710** J	**410** J	**430** J	**400** J	< 1200	< 1000	< 1200	**630** J	< 1100	< 1100
Pyrene	170,000	1,700,000	950	--	**510** J	< 1200	**710** J	**380** J	**380** J	**370** J	< 1200	< 1000	< 1200	**650** J	< 1100	< 1100
Butylbenzylphthalate	260,000	910,000	200	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Benzo(a)anthracene	150	2,100	10	--	**280** J	< 1200	**410** J	**200** J	**180** J	**170** J	< 1200	< 1000	< 1200	**350** J	< 1100	< 1100
Chrysene	15,000	210,000	1100	--	**330** J	< 1200	**470** J	**240** J	**200** J	**230** J	< 1200	< 1000	< 1200	**400** J	< 1100	< 1100
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	--	**240** JB	**250** JB	**230** JB	**210** JB	**150** JB	**260** JB	**150** JB	**200** JB	**180** JB	**190** JB	**220** JB	**220** JB
Benzo(b)fluoranthene	150	2,100	35	--	**270** J	< 1200	**390** J	**200** J	**150** J	**190** J	< 1200	< 1000	< 1200	**290** J	< 1100	< 1100
Benzo(k)fluoranthene	1,500	21,000	350	--	**240** J	< 1200	**410** J	**160** J	**130** J	**190** J	< 1200	< 1000	< 1200	**290** J	< 1100	< 1100
Benzo(a)pyrene	150	210	4	--	**310** J	< 1200	**430** J	**190** J	**150** J	**190** J	< 1200	< 1000	< 1200	**340** J	< 1100	< 1100
Indeno(1,2,3-cd)pyrene	150	2,100	200	--	**160** J	< 1200	**210** J	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	**160** J	< 1100	< 1100
Dibenz(a,h)anthracene	15	210	11	--	< 1200	< 1200	< 1100	< 1200	< 1100	< 1200	< 1200	< 1000	< 1200	< 1200	< 1100	< 1100
Benzo(g,h,i)perylene	NLE	NLE	NLE	--	**180** J	< 1200	**220** J	< 1200	< 1100	130 J J	< 1200	< 1000	< 1200	**180** J	< 1100	< 1100
TICs	NLE	NLE	NLE	--	**17470**	**20140**	**25080**	**22040**	**13480**	**41090**	**11840**	**10840**	**12110**	**13960**	**10980**	**11680**
Pesticides/PCBs (mg/kg)																
4,4'-DDE	1.4	5.1	0.046	--	**0.011**	**0.01**	**0.111**	**0.01**	**0.003**	**0.029**	**0.032**	< 0.0004	< 0.0005	< 0.0005	**0.014**	**0.005**
Dieldrin	0.03	0.11	0.000061	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	**0.007**	< 0.0006	< 0.0006	< 0.0006	< 0.0006	**0.032**	**0.031**
4,4'-DDD	2	7.2	0.01	--	**0.009**	**0.013**	**0.069**	**0.009**	**0.003**	**0.03**	**0.006**	< 0.0007	< 0.0007	< 0.0007	**0.018**	**0.008**
Endrin Aldehyde	NLE	NLE	NLE	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005
4,4'-DDT	1.7	7	0.07	--	**0.012**	**0.005**	**0.03**	**0.016**	**0.003**	**0.023**	**0.036**	**0.002**	**0.002**	**0.057**	**0.079**	**0.026**
gamma-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005
alpha-Chlordane	1.6	6.5	0.013	--	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0005	< 0.0005

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Field Sample Location	USEPA RSL Residential (HQ=0.1) (1)	USEPA RSL Industrial (HQ=0.1)	USEPA Impact to Ground Water (Risk Based SSL)	Weston Background (2)	B-137	B-138	B-139	B-140	B-141	B-142	B-143	B-144	B-145	B-146	B-147	B-148
Sample Date					09/15/99	09/15/99	09/15/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99	09/20/99
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**18100**	**12300**	**12400**	**12300**	**14100**	**13900**	**13600**	**13200**	**16600**	**15600**	**14800**	**8510**
Antimony	3.1	41	0.03	ND	< 0.480	< 0.368	**1.68**	< 0.474	< 0.449	< 0.529	< 0.412	< 0.429	< 0.487	< 0.415	< 0.363	< 0.442
Arsenic	0.61	2.4	0.0013	22.9	**22.2**	**15.4**	**38.6**	**17.7**	**22.3**	**20.3**	**20**	**16.2**	**24**	**22.5**	**15.5**	**7.97**
Barium	1,500	19,000	12	32.3	**34.6**	**38**	**133**	**29**	**24.8**	**32.5**	**11.3**	**21.8**	**9.04**	**31.6**	**30.2**	**17.6**
Beryllium	16	200	1.3	2	**2.19**	**1.26**	**1.09**	**1.47**	**1.96**	**1.85**	**1.11**	**1.19**	**2.44**	**1.88**	**1.52**	**0.81**
Cadmium	7	80	0.05	ND	**0.453**	**0.627**	**25.2**	**0.379**	**0.54**	**0.555**	**0.233**	**0.282**	**0.514**	**0.526**	**0.562**	**0.34**
Calcium	NLE	NLE	NLE	921	**1420**	**2120**	**1530**	**998**	**1830**	**1260**	**651**	**1570**	**515**	**1160**	**1540**	**2050**
Chromium	12,000	150,000	2,800,000	269	**204**	**122**	**215**	**162**	**207**	**193**	**148**	**134**	**269**	**214**	**144**	**69.6**
Cobalt	2.3	30	0.02	2.5	**1.6**	**3.43**	**4.2**	**1.6**	**1.29**	**1.31**	**0.77**	**1.2**	**0.664**	**1.43**	**2.42**	**2.2**
Copper	310	4,100	2.2	8	**21.4**	**27.2**	**243**	**23**	**10.2**	**28**	**12.4**	**13.6**	**6.31**	**17.5**	**4.5**	**7.79**
Iron	5,500	72,000	27	55,800	**52500**	**35000**	**132000**	**36200**	**48500**	**42900**	**29900**	**29400**	**55000**	**46600**	**48200**	**27300**
Lead	400	800	NLE	19.5	**48.4**	**46**	**1090**	**28.6**	**30**	**17.9**	**5.72**	**17.1**	**9.35**	**25.1**	**9.06**	**7.95**
Magnesium	NLE	NLE	NLE	7,230	**7510**	**4410**	**4110**	**4960**	**6480**	**5480**	**3660**	**3830**	**7780**	**6440**	**4500**	**2250**
Manganese	180	2,300	2.1	90.7	**50**	**79.4**	**332**	**35.6**	**43.7**	**47.3**	**31.2**	**52.3**	**19.3**	**49.1**	**32.1**	**42.2**
Mercury	1	4.3	0.0033	ND	**0.083**	**0.06**	**0.078**	**0.0061**	< 0.024	< 0.027	< 0.023	< 0.024	< 0.024	**0.061**	< 0.024	< 0.021
Nickel	150	2,000	2	8.4	**6.92**	**9.93**	**13.1**	**6.22**	**6.64**	**5.77**	**3.74**	**4.62**	**5.7**	**6.05**	**8.02**	**6.32**
Potassium	NLE	NLE	NLE	15,400	**17500**	**8520**	**8990**	**10700**	**14700**	**12500**	**7330**	**7650**	**18800**	**14700**	**10800**	**4940**
Selenium	39	510	0.04	1.9	< 0.721	< 0.552	**1.27**	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Silver	39	510	0.06	1.1	< 0.721	< 0.552	**1.33**	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Sodium	NLE	NLE	NLE	51.6	**134**	**166**	**348**	**264**	**122**	**102**	**130**	**67.4**	**102**	**87.8**	**120**	**59.9**
Thallium	0.078	1	0.0011	ND	< 0.721	< 0.552	< 0.734	< 0.711	< 0.674	< 0.794	< 0.617	< 0.644	< 0.731	< 0.622	< 0.544	< 0.663
Vanadium	39	510	6.3	94.1	**110**	**74.1**	**90.6**	**76**	**80**	**82.7**	**73**	**63.9**	**111**	**94.7**	**81.4**	**41.6**
Zinc	2,300	31,000	29	81.4	**79.6**	**94.8**	**6530**	**50.6**	**80.3**	**98.3**	**42.2**	**59.5**	**57.5**	**67.4**	**54.1**	**36**

Notes:

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

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

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

USEPA residential and industrial direct contact RSLs for m+p-xylenes are the most conservative values for the two isomers.
USEPA RSLs for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively
USEPA RSLs for gamma- and alpha-chlordane are for total chlordane
USEPA residential and industrial direct contact RSLs for chromium are for hexavalent chromium; the USEPA protection of groundwater RSL is for total chromium.

USEPA RSLs for nickel, thallium, and manganese are for nickel soluble salts, thallium soluble salts, and manganese (non-diet), respectively.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
in. = inches
bgs = below ground surface
B = Analyte detected in both sample and blank
D = Results from dilution of sample
E = Estimated value
J = Analyte detected between MDL and practical quantitation limit (PQL)
ND = not detected
NLE = No limit established
< = analyte not detected above method detection limit (MDL)
Detections are bolded.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds USEPA Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria

TABLE 4.3
SOIL SAMPLING SUMMARY RESULTS - SUPPLEMENTAL SOIL SAMPLES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW16-A				MW16-B			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**10.45**	**8.97**	**2.45**	**5.76**	**13.29**	**7.17**	**3.03**	**1.76**
Lead	400	800	90	400	800	NLE	19.5	**26.13**	**7.48**	10.3 U	13.2 U	**43.65**	**31.4**	**5.05**	11.4 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW16-C				MW16-D			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**4.89**	**3.01**	**4.1**	**1.65**	**8.25**	**7.64**	**7.17**	**0.49**
Lead	400	800	90	400	800	NLE	19.5	**16.73**	11.6 U	**6.21**	12.5 U	**46.91**	**38.3**	11.6 U	11.8 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW16-Dup				MW16-E			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**6.03**	**4.06**	**5.26**	**2.91**	**7.99**	**2.95**	**4.21**	**3.2**
Lead	400	800	90	400	800	NLE	19.5	**12.43**	**6.72**	12.8 U	**10.33**	**79.42**	10.3 U	11.9 U	12.4 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW16-F				MW16-G			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**7.07**	**4.73**	**3.25**	**3.59**	**7.69**	**9.8**	**3.67**	**4.07**
Lead	400	800	90	400	800	NLE	19.5	**7.43**	13.1 U	**96.33**	11.1 U	**20.4**	**13.15**	**24.01**	13.1 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW16-H				MW16-I			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**3.65**	**2.26**	**10.17**	**6.78**	**2.67**	**2.77**	**1.72**	**2.15**
Lead	400	800	90	400	800	NLE	19.5	11.3 U	11.3 U	13.7 U	12.2 U	13.7 U	10.8 U	11.5 U	12 U

Notes:
(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013).
(3) U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ=0.1). http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.
(4) Weston, 1995. Final Site Investigation - main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water.
Shaded cells = concentrations exceeds Weston (1995) background levels.
RSL Values were current at the time that the screening was conducted.
U = the analyte was not detected above the indicated limit of detection (LOD)
ft bgs = feet below ground surface

TABLE 4.3
SOIL SAMPLING SUMMARY RESULTS - SUPPLEMENTAL SOIL SAMPLES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW22-A			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)											
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**2.59**	**9.9**	**7.88**	**5.58**
Lead	400	800	90	400	800	NLE	19.5	**32.47**	**75.39**	11.1 U	10.66 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW22-B					
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5
Metals (mg/Kg)													
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**10.14**	**12.07**	**11.63**	**7.55**	**14.3**	**19.22**
Lead	400	800	90	400	800	NLE	19.5	**15.68**	**76.56**	**53.98**	10.7 U	11.6 U	11.7 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW22-C				MW22-D			
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5	3-3.5
Metals (mg/Kg)															
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**9.95**	**24.72**	**10.35**	**27.41**	**41.04**	**10.21**	**4.51**	**1.85**
Lead	400	800	90	400	800	NLE	19.5	**11.51**	12.4 U	**11.19**	**11**	**49.64**	11.1 U	11 U	10.6 U

Sample Location	NJDEP Residential (1)	NJDEP Non-Residential (1)	NJDEP Impact to Groundwater (2)	USEPA RSL Residential (3)	USEPA RSL Industrial (3)	USEPA Impact to Groundwater (Risk Based SSL)(4)	Weston Background	MW22-E				MW22-F		
Date Sampled								3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001	3/3/2001
Interval (ft bgs)								0-0.5	1-1.5	2-2.5	3-3.5	0-0.5	1-1.5	2-2.5
Metals (mg/Kg)														
Arsenic	19	19	19	0.61	2.4	0.0013	22.9	**35.16**	**11.01**	**6.3**	**6.88**	**9.09**	**8.15**	**10.9**
Lead	400	800	90	400	800	NLE	19.5	**19.15**	10.7 U	11.5 U	11.7 U	11.7 U	11.3 U	**466.74**

Notes:
(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013).
(3) U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ=0.1). http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.
(4) Weston, 1995. Final Site Investigation - main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
Shaded cells = concentration exceeds USEPA Ground Water Protection RSL.
Shaded cells = concentration exceeds USEPA Residential RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds NJDEP Impact to Ground Water.
Shaded cells = concentrations exceeds Weston (1995) background levels.
RSL Values were current at the time that the screening was conducted.
U = the analyte was not detected above the indicated limit of detection (LOD)
ft bgs = feet below ground surface

TABLE 4.4
SOIL SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

					Number of Exceedances							Identification of COPCs	
					Residential Direct Contact		Non-Residential Direct		Impact to Groundwater		Background		
Analyte	Maximum Detected Concentration	Location of Maximum Concentration	Number of Samples	Number of Detections	NJDEP RDCSRS (1)	USEPA Residential RSL (HQ=0.1)(2)	NJDEP NRDCSRS (1)	USEPA Industrial RSL (2)	NJDEP Impact to Groundwater (3)	USEPA Impact to Groundwater (Risk Based SSL)	Weston 1995 Background (Main Post) (4)	Evaluated as COPC in Risk Assessment?	Rationale
Volatile Organic Compounds (µg/kg)													
Methylene Chloride	5700	B-126	153	13	0	0	0	0	13	13	--	No	Less than USEPA Residential RSL
cis-1,2-Dichloroethene	1100	B-74	153	1	0	0	0	0	1	1	--	No	Less than USEPA Residential RSL
Benzene	1300	B-74	153	1	0	1	0	0	1	1	--	**Yes**	Exceeded USEPA Residential RSL
Toluene	680	B-74	153	3	0	0	0	0	0	3	--	No	Less than USEPA Residential RSL
Acetone	16000	B-101	153	15	0	0	NLE	0	0	15	--	No	Less than USEPA Residential RSL
Vinyl Chloride	670 J	B-92	153	2	0	2	0	0	2	2	--	**Yes**	Exceeded USEPA Residential RSL
Ethylbenzene	880	B-74	153	1	0	0	0	0	0	1	--	No	Less than USEPA Residential RSL
m+p-Xylenes	740 J	B-74	153	1	0	0	0	0	0	1	--	No	Less than USEPA Residential RSL
o-Xylene	510 J	B-74	153	1	0	0	0	0	0	1	--	No	Less than USEPA Residential RSL
TICs	32000	B-20	153	13	NLE	NLE	NLE	NLE	NLE	NLE	--	No	No USEPA RSLs or NJDEP criteria for TICs
Semi-Volatile Organic Compounds (µg/kg)													
Naphthalene	1200 D	B-8	153	12	0	0	0	0	0	12	--	No	Less than USEPA Residential RSL
n-Nitrosodiphenylamine	56 J	B-15	153	1	0	0	0	0	0	0	--	No	Less than USEPA Residential RSL
2-Methylnaphthalene	1100 D	B-8	153	13	0	0	0	0	0	13	--	No	Less than USEPA Residential RSL
Acenaphthylene	7200 JD	B-122	153	15	NLE	NLE	0	NLE	NLE	NLE	--	No	No USEPA RSLs
Acenaphthene	3200 JD	B-126	153	8	0	0	0	0	0	5	--	No	Less than USEPA Residential RSL
Dibenzofuran	560 D	B-8	153	4	0	0	0	0	0	4	--	No	Less than USEPA Residential RSL
Diethylphthalate	440 J	B-134 (Dup)	153	21	0	0	0	0	0	0	--	No	Less than USEPA Residential RSL
Fluorene	1800 D	B-8	153	13	0	0	0	0	0	6	--	No	Less than USEPA Residential RSL
Phenanthrene	15000 D	B-122	153	69	NLE	NLE	0	NLE	NLE	NLE	--	No	No USEPA RSLs
Anthracene	3500 JD	B-122	153	25	0	0	0	0	0	0	--	No	Less than USEPA Residential RSL
Di-n-butylphthalate	11000 BD	B-6	153	153	0	0	0	0	0	145	--	No	Less than USEPA Residential RSL
Fluoranthene	32000 D	B-127	153	90	0	0	0	0	0	4	--	No	Less than USEPA Residential RSL
Pyrene	29000 D	B-127	153	92	0	0	0	0	0	21	--	No	Less than USEPA Residential RSL
Butylbenzylphthalate	65 J	B-17	153	1	0	0	0	0	0	0	--	No	Less than USEPA Residential RSL
Benzo(a)anthracene	13000	B-127	153	69	18	54	7	7	12	69	--	**Yes**	Exceeded USEPA Residential RSL
Chrysene	14000 D	B-122	153	88	0	0	0	0	0	16	--	No	Less than USEPA Residential RSL
bis(2-Ethylhexyl)phthalate	3100 B	B-83	153	147	0	0	0	0	0	3	--	No	Less than USEPA Residential RSL
Benzo(b)fluoranthene	11000	B-127	153	70	16	56	9	9	9	70	--	**Yes**	Exceeded USEPA Residential RSL
Benzo(k)fluoranthene	9100	B-127	153	74	3	10	0	0	0	28	--	**Yes**	Exceeded USEPA Residential RSL
Benzo(a)pyrene	12000	B-127	153	70	50	55	50	48	50	70	--	**Yes**	Exceeded USEPA Residential RSL
Indeno(1,2,3-cd)pyrene	4400	B-127	153	46	10	40	3	3	0	27	--	**Yes**	Exceeded USEPA Residential RSL
Dibenz(a,h)anthracene	2000	B-127	153	11	8	11	8	8	2	11	--	**Yes**	Exceeded USEPA Residential RSL
Benzo(g,h,i)perylene	3700	B-127	153	46	0	NLE	0	NLE	NLE	NLE	--	No	No USEPA RSLs
TICs	108500	B-122	153	152	NLE	NLE	NLE	NLE	NLE	NLE	--	No	No USEPA RSLs or NJDEP criteria for TICs
Pesticides/PCBs (mg/kg)													
4,4'-DDE	0.944	B-40 (Dup)	153	132	0	0	0	0	0	65	--	No	Less than USEPA Residential RSL
Dieldrin	0.032	B-147	153	6	0	2	0	0	3	6	--	**Yes**	Exceeded USEPA Residential RSL
4,4'-DDD	1.766	B-73	153	123	0	0	0	0	0	95	--	No	Less than USEPA Residential RSL
Endrin Aldehyde	0.043	B-25	153	1	NLE	NLE	NLE	NLE	NLE	NLE	--	No	No USEPA RSLs
4,4'-DDT	1.98	B-81	153	137	0	1	0	0	0	63	--	**Yes**	Exceeded USEPA Residential RSL
gamma-Chlordane	0.11	B-81	153	3	0	0	0	0	1	1	--	No	Less than USEPA Residential RSL
alpha-Chlordane	0.063	B-81	153	3	0	0	0	0	1	1	--	No	Less than USEPA Residential RSL

TABLE 4.4
SOIL SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

					Number of Exceedances							Identification of COPCs	
					Residential Direct Contact		Non-Residential Direct		Impact to Groundwater		Background		
Analyte	**Maximum Detected Concentration**	**Location of Maximum Concentration**	**Number of Samples**	**Number of Detections**	**NJDEP RDCSRS (1)**	**USEPA Residential RSL (HQ=0.1)(2)**	**NJDEP NRDCSRS (1)**	**USEPA Industrial RSL (2)**	**NJDEP Impact to Groundwater (3)**	**USEPA Impact to Groundwater (Risk Based SSL)**	**Weston 1995 Background (Main Post) (4)**	**Evaluated as COPC in Risk Assessment?**	**Rationale**
Metals (mg/kg)													
Aluminum	24700	B-102	153	153	0	111	0	0	117	150	41	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Antimony	16.7	B-127	153	62	0	4	0	0	1	62	62	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Arsenic	51.3	B-64	193	193	57	192	57	183	57	193	34	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Barium	289.3	B-8	153	153	0	0	0	0	0	137	77	No	Less than USEPA Residential RSL
Beryllium	2.81	B-107	153	153	0	0	0	0	109	64	23	No	Less than USEPA Residential RSL
Cadmium	25.2	B-139	153	128	0	1	0	0	4	128	128	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Calcium	14200	B-116	153	153	NLE	NLE	NLE	NLE	NLE	NLE	80	No	Essential human nutrient
Chromium	338	B-102	153	153	NLE	0	NLE	0	NLE	0	10	No	Less than USEPA Residential RSL
Cobalt	27.4	B-127	153	153	0	41	0	0	0	153	30	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Copper	502.4	B-21	153	152	0	2	0	0	0	148	123	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Iron	132000	B-139	153	153	NLE	145	NLE	2	NLE	153	11	No	Essential human nutrient
Lead	1090	B-139	193	171	2	3	0	1	13	NLE	99	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Magnesium	10800	B-52	153	153	NLE	NLE	NLE	NLE	NLE	NLE	20	No	Essential human nutrient
Manganese	1110	B-127	153	153	0	4	0	0	27	153	13	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Mercury	29.909	B-1	153	104	1	2	0	1	35	104	104	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Nickel	29.9	B-127	153	153	0	0	0	0	0	150	39	No	Less than USEPA Residential RSL
Potassium	24100	B-52	153	153	NLE	NLE	NLE	NLE	NLE	NLE	24	No	Essential human nutrient
Selenium	2.46	B-57	153	46	0	0	0	0	0	46	2	No	Less than USEPA Residential RSL
Silver	1.699	B-3	153	11	0	0	0	0	7	11	5	No	Less than USEPA Residential RSL
Sodium	662	B-77	153	153	NLE	NLE	NLE	NLE	NLE	NLE	142	No	Essential human nutrient
Thallium	0.502	B-20	153	1	0	1	0	0	0	1	1	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Vanadium	140	B-107	153	153	46	102	0	0	0	153	31	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration
Zinc	6530	B-139	153	153	0	1	0	0	1	144	48	**Yes**	Exceeded USEPA Residential RSL and Maximum Background Concentration

Notes:
(1) New Jersey Department of Environmental Protection (NJDEP) Residential and Non-Residential Direct Contact Soil Remediation Standards (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ=0.1). http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.
(3) NJDEP Impact to Ground Water Standard (NJDEP guidance document; Nov 2013)
(4) Weston 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
(5) Essential nutrients (calcium, iron, magnesium, potassium, and sodium) are not considered COPCs.
RSL Values were current at the time that the screening was conducted
µg/L = micrograms/liter
COPC = contaminant of potential concern
If there is a NLE for an analyte, it is considered a COPC. Essential nutrients are not considered COPCs.
Dash (--) = only background concentrations for metals are being used as comparison criteria
J = Estimated concentration exceeds the method detection limit (MDL) and is less than the reporting limit (RL)
B = Analyte detected in both sample and associated laboratory blank
D = Result from dilution of sample
ER = Estimated result
NLE = no limit established

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW11					M12MW12					M12MW13				M12MW14				
				LF1	LF2	LF3	LF4	LF5	LF1	LF2	LF3	LF4	LF5	LF1	LF2	LF3	LF4	LF1	LF2	LF3	LF4	LF5
Date Collected				10/7/2010	10/22/2010	12/7/2010	3/1/2011	5/9/2011	10/8/2010	10/22/2010	11/30/2010	3/2/2011	5/9/2011	10/8/2010	11/30/2010	3/1/2011	5/9/2011	8/20/2010	10/22/2010	12/8/2010	3/3/2011	5/10/2011
ANALYTE/Lab ID				1043301	1045604	1053205	1107403	1119807	1043701	1045605	1052005	1107608	1119806	1043702	1052004	1107407	1119808	10357.01	1045606	1053405	1108101	1119903
Metals (µg/L)																						
Aluminum	200	1600	121000	**7630**	**2680**	**1440**	**4700**	**4220**	**1030**	**819**	**1050**	<200	**202**	**1420**	**951**	**987**	**458**	**393**	**774**	<13	<200	**1570**
Antimony	6	0.6	20.70	**5.98** ER	**7.98** ER	**5.35** ER	<6.0	<6.0	ND	ND	<4.7	<6.0	<6.0	**5.24** ER	**7.1** ER	<6.0	<6.0	ND	**10**	<4.7	<6.0	<6.0
Arsenic	3	0.045	89.30	ND	**1.48** ER	**3.56** ER	<3.0	<3.0	**3.23** ER	**1.06** ER	**1.86** ER	<3.0	<3.0	ND	**1.89** ER	<3.0	<3.0	**0.68** ER	**0.71** ER	**4.84** ER	**8.1**	**145**
Barium	6000	290	699	**222**	**192**	**182**	**214**	<200	**272**	**266**	**278**	<200	**1360**	**223**	**252**	**317**	<200	**83.6**	**212**	**27**	<200	<200
Beryllium	1	1.6	2.10	**1.42**	**0.947**	**0.685**	**1**	**1.2**	**0.761**	**1.02**	**1.19**	<1.0	<1.0	**0.526**	**0.631**	<1.0	<1.0	**0.8**	**0.466** ER	<0.4	<1.0	<1.0
Cadmium	4	0.69	9.50	**3.76**	**2.29**	**2.15**	<3.0	<3.0	**0.827** ER	**0.789** ER	**0.921** ER	<3.0	<3.0	**1.43** ER	**1** ER	<3.0	<3.0	**0.68** ER	**0.771** ER	**1.02** ER	<3.0	<3.0
Calcium	NLE	NLE	45400	**62100**	**58600**	**51900**	**50700**	**36400**	**21300**	**19200**	**18500**	**22100**	**17400**	**54200**	**64400**	**61100**	**20100**	**29800**	**57200**	**26500**	**23900**	**13700**
Chromium	70	1600	191	ND	ND	<0.6	<10	<10	ND	ND	<0.6	<10	<10	ND	<0.6	<10	<10	ND	ND	<0.6	<10	<10
Cobalt	100	0.47	18.30	**30.4**	**17.3**	**10.8**	<50	<50	**4.64**	**4.35**	**4.85**	<50	<50	**16.6**	**7.3**	<50	<50	**8.07**	**9.86**	**0.575** ER	<50	<50
Copper	1300	62	65.60	**4.43** ER	**1.82** ER	<0.8	<10	<10	ND	ND	<0.8	<10	<10	ND	<0.8	<10	<10	**3.46** ER	ND	<0.8	<10	<10
Iron	300	1100	431000	**2790**	**5680**	**4760**	**609**	**855**	**9680**	**7280**	**4160**	**6000**	**21300**	**9410**	**3380**	**1840**	**5230**	**2600**	**5600**	**14400**	**15000**	**33100**
Lead	5	NLE	22.70	ND	ND	<2.1	<3.0	<3.0	**4.95** ER	**4.81** ER	**3.66** ER	<3.0	<3.0	ND	<2.1	<3.0	<3.0	ND	ND	**3.27** ER	<3.0	<3.0
Magnesium	NLE	NLE	62700	**19900**	**16500**	**14800**	**18300**	**14900**	**10900**	**10400**	**10600**	**7510**	**6420**	**14000**	**16100**	**16900**	**6440**	**9370**	**14300**	**4810**	<5000	<5000
Manganese	50	32	331	**378**	**284**	**238**	**310**	**242**	**100**	**78.6**	**74.6**	**125**	**197**	**240**	**239**	**256**	**89.3**	**114**	**213**	**170**	**169**	**129**
Mercury	2	0.063	0.26	ND	ND	<0.254	<0.20	<0.20	ND	ND	<0.254	<0.2	<0.20	ND	<0.254	<0.20	<0.20	ND	ND	<0.254	<0.20	<0.20
Nickel	100	30	187	**65.8**	**44**	**29.7**	**36.5**	**29.1**	**13.9**	**12.5**	**13.6**	<10	<10	**41.6**	**33.5**	**40.8**	<10	**28.9**	**36**	**10.9**	**24.1**	<10
Potassium	NLE	NLE	137000	**10100**	**9680**	**9860**	<10000	<10000	**8530**	**7820**	**8180**	<10000	<10000	**13600**	**16300**	**13500**	<10000	**4500**	**15500**	**4160**	<10000	<10000
Selenium	40	7.8	29.60	ND	ND	**1.38** ER	<10	<10	ND	ND	<1.36	<10	<10	ND	<1.36	<10	<10	**57.2**	**1.37** ER	**1.98** ER	<10	<10
Silver	40	7.1	ND	**2.36** ER	**1.13** ER	**1.06** ER	<10	<10	ND	ND	**1.39** ER	<10	<10	ND	<0.6	<10	<10	**0.732** ER	**1.19** ER	**2.41** ER	<10	<10
Sodium	50000	NLE	21500	**115000**	**102000**	**96100**	**155000**	**145000**	**38500**	**38300**	**38200**	**40300**	**45100**	**97400**	**125000**	**157000**	**170000**	**52200**	**96700**	**15900**	**24000**	**44800**
Thallium	2	0.016	5.50	ND	ND	<0.53	<2.0	<2.0	ND	ND	<0.53	<2.0	<2.0	ND	<0.53	<2.0	<2.0	ND	ND	<0.53	<2.0	<2.0
Vanadium	NLE	6.3	108	**1.09** ER	ND	<0.5	<50	<50	**1.75** ER	ND	<0.5	<50	<50	**1.89** ER	**0.59** ER	<50	<50	ND	ND	<0.5	<50	<50
Zinc	2000	470	233	**251**	**169**	**138**	**257**	**230**	**126**	**93.6**	**95.6**	<20	<20	**105**	**89.2**	**124**	**39.7**	**54.7**	**89.6**	**9.05** ER	**27.2**	**23.7**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW15				M12MW16																							
				LF1		LF2	LF3	LF4	46		46 Dup		47		48		48 Dup		49		49 Dup		50		51		52	53	54		LF1		LF2		LF3		LF4
Date Collected				8/20/2010		12/8/2010	3/1/2011	5/9/2011	3/7/2008		3/7/2008		5/15/2008		8/7/2008		8/7/2008		10/27/2008		10/27/2008		3/13/2009		6/25/2009		9/8/2009	11/18/2009	2/4/2010		6/4/2010		9/9/2010		11/30/2010		3/2/2011
ANALYTE/Lab ID				10357.02		1053404	1107404	1119809	80074.03		80074.02		80165.03		80286.03		80286.02		80390.03		80390.02		90109.03		90263.01		90370.03	90451.03	10049.03		10235.04		10382.08		1052003		1107609
Metals (µg/L)																																					
Aluminum	200	1600	121000	**2370**		**5030**	**235**	**8590**	ND		ND		ND		ND		ND		ND		ND		**144**		**155**		**779**	**607**	**253**		**85.8**	ER	**112**		<13		<200
Antimony	6	0.6	20.70	**10.2**		**7.86**	<6.0	<6.0	ND		ND		ND		ND		ND		**1.39**	ER	ND		**12.8**		**2.31**	ER	ND	ND	ND		**7.81**	ER	**12.8**		<4.7		<6.0
Arsenic	3	0.045	89.30	**0.68**	ER	**4.83**	<3.0	**5.7**	**45.1**		**40.8**		**23.3**		**22**		**21.6**		**43.5**		**58.7**		**84.2**		**57.5**		**55**	**39.1**	**25.3**		**19.92**		**47.03**		**25.22**		**21.2**
Barium	6000	290	699	**305**		**89.1**	**311**	<200	**110**		**113**		**53**		**118**		**118**		**286**		**282**		**102**		**97.8**		**205**	**213**	**84.9**		**69.3**		**135**		**70.5**		<200
Beryllium	1	1.6	2.10	**0.815**		<0.4	<1.0	<1.0	**0.182**	ER	**0.173**	ER	ND		**0.131**	ER	**0.155**	ER	**1.03**		**1.37**		**0.109**	ER	**0.246**	ER	**0.651**	**0.628**	**0.106**	ER	**0.169**	ER	**0.231**	ER	<0.4		<1.0
Cadmium	4	0.69	9.50	**2.42**		**1.27**	<3.0	<3.0	ND		ND		**2.84**		**3.11**		**2.91**		ND		ND		ND		**0.441**	ER	**2.08**	ND	ND		**1.41**	ER	**2.46**		**1.58**	ER	<3.0
Calcium	NLE	NLE	45400	**59800**		**9460**	**32000**	**11600**	**17700**		**17700**		**17700**		**17700**		**17700**		**17700**		**17700**		**35800**		**39200**		**33400**	**41200**	**22700**		**25300**		**25800**		**47600**		**46100**
Chromium	70	1600	191	ND		**32.5**	<10	**43.9**	**1.88**	ER	**1.85**	ER	**2.02**	ER	**0.901**	ER	**0.746**	ER	**0.732**	ER	**1.92**	ER	**1.82**	ER	**1.84**	ER	ND	ND	ND		ND		**1.78**	ER	<0.6		<10
Cobalt	100	0.47	18.30	**14.1**		**2.39**	<50	<50	ND		ND		ND		ND		ND		ND		ND		**0.336**		**1.07**		**2.85**	**3.49**	**0.793**	ER	ND		**1.47**	ER	<0.3		<50
Copper	1300	62	65.60	**4.93**	ER	**13.7**	<10	**30.2**	**4.66**	ER	**4.29**	ER	ND		ND		ND		ND		ND		ND		**0.979**	ER	ND	ND	ND		ND		ND		<0.8		<10
Iron	300	1100	431000	**5950**		**9340**	**119**	**16400**	**23300**		**23300**		**23300**		**23300**		**23300**		**23300**		**23300**		**53600**		**48100**		**38400**	**38300**	**31200**		**44500**		**50600**		**29100**		**58700**
Lead	5	NLE	22.70	**3.19**	ER	**8.27**	<3.0	**10.6**	ND		ND		**2.66**	ER	**2.97**	ER	**1.86**	ER	ND		ND		**10.2**		ND		ND	ND	**2.58**	ER	ND		**5.31**		**3.88**	ER	<3.0
Magnesium	NLE	NLE	62700	**20300**		**4970**	**7380**	**7340**	**5880**		**5880**		**5880**		**5880**		**5880**		**5880**		**5880**		**17400**		**16600**		**20800**	**23300**	**11500**		**12300**		**16600**		**16600**		**17200**
Manganese	50	32	331	**338**		**77.7**	**97.3**	**135**	**124**		**124**		**124**		**124**		**124**		**124**		**124**		**196**		**181**		**140**	**184**	**114**		**136**		**115**		**255**		**289**
Mercury	2	0.063	0.26	ND		<0.254	<0.20	<0.20	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND	ND		**0.09**	ER	**0.19**	ER	<0.254		<0.20
Nickel	100	30	187	ND		**14.9**	**34**	**20.7**	**7.2**		**6.92**		**0.934**	ER	**3.59**	ER	**3.43**	ER	**11.6**		**10.2**		ND		**2.55**	ER	**6.95**	**10.6**	**4.14**	ER	**1.98**	ER	**3.75**	ER	**0.953**	ER	<10
Potassium	NLE	NLE	137000	**12400**		**6070**	<10000	<10000	**2000**		**2000**		**2000**		**2000**		**2000**		**2000**		**2000**		**4110**		**4940**		**5990**	**6000**	**3410**		**4470**		**5920**		**5520**		<10000
Selenium	40	7.8	29.60	**83.8**		**2.86**	<10	<10	ND		ND		ND		ND		ND		ND		ND		**29.6**		**13.4**		**20.8**	ND	ND		NR		ND		<1.36		<10
Silver	40	7.1	ND	ND		<0.6	<10	<10	ND		ND		ND		ND		ND		ND		ND		ND		**0.994**		NA	ND	ND		**7.37**		**7.22**		**6.23**		<10
Sodium	50000	NLE	21500	**200000**		**112000**	**558000**	**118000**	**7680**		**7680**		**7680**		**7680**		**7680**		**7680**		**7680**		**22500**		**26600**		**52600**	**68100**	**26000**		**26200**		**60800**		**49900**		**31400**
Thallium	2	0.016	5.50	ND		<0.53	<2.0	<2.0	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND	ND		ND		ND		<0.53		<2.0
Vanadium	NLE	6.3	108	ND		**21**	<50	<50	NA		NA		NA		NA		NA		NA		NA		**8.2**		**2.16**	ER	**7.24**	**8.69**	**5.54**		ND		ND		**1.77**	ER	<50
Zinc	2000	470	233	**108**		**50.3**	**31.5**	**80.3**	NA		NA		NA		NA		NA		NA		NA		**24.6**		**18.2**	ER	**71.1**	**56.2**	**27.5**	ER	ND		**13.7**	ER	<2.5		<20

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW16	M12MW17																						M12MW18		
				LF5	46		47		47 Dup		48		49		50	50 Dup		51		52		53		54		LF1		LF1 Dup		LF2		LF3		LF4	LF5	46		47	
Date Collected				5/9/2011	3/7/2008		5/15/2008		5/15/2008		8/7/2008		10/27/2008		3/13/2009	3/13/2009		6/8/2009		9/8/2009		11/18/2009		2/4/2010		6/2/2010		6/2/2010		9/8/2010		11/26/2010		3/2/2011	5/9/2011	3/7/2008		5/15/2008	
ANALYTE/Lab ID				1119804	80074.04		80165.04		80165.02		80286.04		80390.04		90109.04	90109.02		90221.04		90370.04		90451.04		10049.04		10226.03		10226.02		10379.04		1051301		1107607	1119805	80074.05		80165.05	
Metals (µg/L)																																							
Aluminum	200	1600	121000	<200	ND		ND		ND		ND		ND		ND	ND		ND		**20.3**	ER	ND		**44.6**	ER	ND		ND		ND		<13		<200	<200	**136**		**136**	
Antimony	6	0.6	20.70	<6.0	ND		ND		ND		ND		ND		**15.6**	**10.9**		**3.95**	ER	ND		ND		ND		**7.94**	ER	**5.34**	ER	**16.1**		<4.7		<6.0	<6.0	ND		ND	
Arsenic	3	0.045	89.30	**15.5**	ND		ND		ND		ND		ND		**83**	**80.6**		**27.7**		**21.6**		**0.77**	ER	**0.66**	ER	ND		ND		**0.67**	ER	<0.62		<3.0	<3.0	ND		ND	
Barium	6000	290	699	<200	**33.2**		**73**		**72.2**		**114**		**42.6**		**112**	**117**		**122**		**80.7**		**39.3**		**33.2**		**4.53**	ER	**4.64**	ER	**4.35**	ER	**4.33**	ER	<200	<200	**424**		**313**	
Beryllium	1	1.6	2.10	<1.0	ND		ND		ND		ND		ND		ND	ND		ND		ND		ND		ND		ND		ND		ND		<0.4		<1.0	<1.0	**1.11**		**0.87**	
Cadmium	4	0.69	9.50	<3.0	ND		**1.37**	ER	**1.36**	ER	**2.1**		**0.294**	ER	ND	ND		ND		**1.54**	ER	ND		ND		ND		ND		ND		<0.4		<3.0	<3.0	**1.18**	ER	**0.946**	ER
Calcium	NLE	NLE	45400	**41900**	**45700**		**45700**		**45700**		**45700**		**45700**		**46500**	**46900**		**43000**		**48500**		**51600**		**27100**		**46300**		**49200**		**45200**		**46400**		**41200**	**42700**	ND		ND	
Chromium	70	1600	191	<10	**0.24**	ER	**0.486**	ER	**0.679**	ER	ND		ND		ND	**1.01**	ER	ND		ND		ND		ND		ND		ND		ND		<0.6		<10	<10	**0.417**	ER	ND	
Cobalt	100	0.47	18.30	<50	ND		ND		ND		ND		ND		ND	ND		ND		ND		ND		ND		ND		ND		ND		<0.3		<50	<50	ND		ND	
Copper	1300	62	65.60	<10	**4.31**	ER	ND		ND		ND		ND		ND	ND		**1.29**	ER	ND		ND		ND		ND		ND		ND		<0.8		<10	<10	**7.92**		**3.09**	ER
Iron	300	1100	431000	**43400**	**5230**		**5230**		**5230**		**5230**		**5230**		**22300**	**25900**		**20600**		**15100**		**8650**		**6830**		ND		ND		ND		**24.3**		<100	**17900**	ND		ND	
Lead	5	NLE	22.70	<3.0	ND		ND		ND		**1.83**	ER	ND		**6.17**	**4.44**	ER	**2.55**	ER	ND		ND		ND		ND		ND		ND		<2.1		<3.0	<3.0	ND		ND	
Magnesium	NLE	NLE	62700	**14500**	**2450**		**2450**		**2450**		**2450**		**2450**		**5150**	**5290**		**5410**		**5080**		**4040**		**2370**		**2270**		**2330**		**2170**		**2090**		<5000	<5000	ND		ND	
Manganese	50	32	331	**240**	**64.3**		**64.3**		**64.3**		**64.3**		**64.3**		**176**	**182**		**167**		**132**		**78.1**		**64.6**		**7.83**		**7.64**		**7.3**		**7.55**		<15	**176**	ND		ND	
Mercury	2	0.063	0.26	<0.20	ND		ND		ND		ND		ND		ND	ND		ND		ND		ND		ND		ND		ND		**0.06**	ER	<0.254		<0.2	<0.20	ND		ND	
Nickel	100	30	187	<10	**3.54**	ER	ND		ND		ND		ND		ND	**1.55**	ER	ND		ND		ND		**0.996**	ER	ND		ND		ND		<0.7		<10	<10	**15.2**		**10.3**	
Potassium	NLE	NLE	137000	<10000	**3810**		**3810**		**3810**		**3810**		**3810**		**3610**	**3610**		**3850**		**4100**		**4530**		**2890**		**4620**		**4900**		**4320**		**8610**		<10000	<10000	ND		ND	
Selenium	40	7.8	29.60	<10	ND		ND		ND		ND		ND		**72.7**	**70.8**		ND		**36.7**		ND		ND		NR		NR		ND		<1.36		<10	<10	ND		**5.85**	ER
Silver	40	7.1	ND	<10	ND		ND		ND		ND		ND		ND	ND		**0.597**		ND		ND		ND		ND		ND		ND		<0.6		<10	<10	ND		ND	
Sodium	50000	NLE	21500	**37700**	**5710**		**5710**		**5710**		**5710**		**5710**		**21000**	**22200**		**21800**		**19300**		**18000**		**9520**		**6560**		**6000**		**5060**		**4740**	ER	<10000	**24100**	ND		ND	
Thallium	2	0.016	5.50	<2.0	ND		ND		ND		ND		**1.69**	ER	ND	ND		ND		ND		ND		ND		**1.76**	ER	ND		ND		<0.53		<2.0	<2.0	ND		ND	
Vanadium	NLE	6.3	108	<50	ND		ND		ND		ND		ND		**1.97**	**2.78**		**0.753**		**2.19**	ER	**2.32**	ER	**2**	ER	ND		ND		ND		**0.562**	ER	<50	<50	ND		ND	
Zinc	2000	470	233	<20	**9.72**		**9.72**		**9.72**		**9.72**		**9.72**		**5.73**	**6.29**		**3.29**		**4.91**	ER	**2.88**	ER	**2.31**	ER	ND		ND		ND		<2.5		<20	**21.4**	**28.4**		**28.4**	

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW18																										M12MW19	
				48		49		50		51		51 Dup		52		52 Dup		53		53 Dup		54		54 Dup		LF1		LF2		LF2 Dup		LF3		LF4	LF5	36	
Date Collected				8/7/2008		10/27/2008		3/13/2009		6/8/2009		6/8/2009		9/8/2009		9/8/2009		11/18/2009		11/18/2009		2/4/2010		2/4/2010		6/2/2010		9/8/2010		9/8/2010		11/26/2010		3/2/2011	5/9/2011	3/7/2008	
ANALYTE/Lab ID				80286.05		80390.05		90109.05		90221.05		90221.02		90370.05		90370.02		90451.05		90451.02		10049.05		10049.02		10226.04		10379.03		10379.02		1051302		1107610	1119803	80074.06	
Metals (µg/L)																																					
Aluminum	200	1600	121000	**136**		**136**		**200**		**951**		**985**		**872**		**873**		**1040**		**1060**		**673**		**652**		**600**		**562**		**578**		**663**		**718**	**745**	**320**	
Antimony	6	0.6	20.70	ND		ND		**15.5**		**2.89**	ER	**2.53**	ER	ND		ND		ND		ND		ND		ND		ND		**5.49**	ER	**8.99**	ER	<4.7		<6.0	<6.0	ND	
Arsenic	3	0.045	89.30	ND		ND		**32.3**		**14.3**		**14.7**		**9.26**		**6.83**		**1.11**	ER	ND		ND		**0.88**	ER	ND		**1.2**	ER	**0.99**	ER	<0.62		<3.0	<3.0	ND	
Barium	6000	290	699	**314**		**316**		**280**		**232**		**238**		**239**		**239**		**256**		**258**		**146**		**140**		**137**		**169**		**169**		**169**		<200	<200	**9.88**	
Beryllium	1	1.6	2.10	**0.823**		**0.94**		**0.809**		**0.746**		**0.767**		**0.767**		**0.792**	ER	**0.801**		**0.819**	ER	**0.446**	ER	**0.437**	ER	**0.554**		**0.655**		**0.651**		**0.767**	ER	<1.0	<1.0	ND	
Cadmium	4	0.69	9.50	**1.26**	ER	**1.05**	ER	**0.745**	ER	**0.633**	ER	**0.7**	ER	**0.739**	ER	**0.627**	ER	ND		ND		ND		ND		ND		**0.749**	ER	ND		**0.671**	ER	<3.0	<3.0	**0.301**	ER
Calcium	NLE	NLE	45400	ND		ND		**16300**		**15200**		**15500**		**14900**		**14800**		**16500**		**16500**		**9660**		**9210**		**10900**		**11600**		**11700**		**12000**		**11400**	**10300**	ND	
Chromium	70	1600	191	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.665**	ER	<10	<10	**0.215**	ER
Cobalt	100	0.47	18.30	ND		ND		**2.32**		**2.07**		**2.02**		**2.39**		**2.46**		**2.23**		**2.69**		**1.06**	ER	**1.28**	ER	**1.57**	ER	**1.62**	ER	**1.46**	ER	**1.97**	ER	<50	<50	ND	
Copper	1300	62	65.60	**1.63**	ER	ND		**0.846**	ER	**2.34**	ER	**2.41**	ER	**2.53**	ER	**2.92**	ER	ND		ND		**2.16**	ER	**1.16**	ER	ND		**2.26**	ER	ND		**0.826**	ER	<10	<10	**2.91**	ER
Iron	300	1100	431000	ND		ND		**139**		**151**		**218**	ER	**198**		**197**	ER	**173**	ER	**254**	ER	**188**	ER	**248**	ER	**123**	ER	**256**	ER	**207**	ER	**120**		**216**	**457**	ND	
Lead	5	NLE	22.70	ND		ND		**5.67**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		<2.10		<3.0	<3.0	ND	
Magnesium	NLE	NLE	62700	ND		ND		**10000**		**9200**		**9360**		**9190**		**9190**		**9840**		**9960**		**5720**		**5480**		**6740**		**7270**		**7370**		**6910**		**6800**	**5830**	ND	
Manganese	50	32	331	ND		ND		**38.7**		**36.5**		**37.1**		**37.1**		**37.2**		**37.8**		**38.7**		**23**		**22.3**		**26**		**28.5**		**28.3**		**28.5**		**32**	**28.3**	ND	
Mercury	2	0.063	0.26	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		<0.254		<0.2	<0.20	ND	
Nickel	100	30	187	**9.39**		**8.75**		**6.77**		**8.67**		**8.85**		**7.06**		**7.25**		**9.12**		**9.03**		**6.3**		**6.26**		**5.44**		**5.66**		**5.52**		**6.77**		<10	<10	**5.28**	
Potassium	NLE	NLE	137000	ND		ND		**7270**		**7610**		**7640**		**7620**		**7490**		**8010**		**8070**		**5020**		**4940**		**7020**		**7130**		**7040**		**9330**		<10000	<10000	ND	
Selenium	40	7.8	29.60	**5.05**	ER	ND		**63.7**		ND		ND		**27**		**18**		**9.05**	ER	ND		ND		ND		NR		ND		ND		<1.36		<10	<10	ND	
Silver	40	7.1	ND	ND		ND		ND		ND		ND		**0.677**	ER	**0.843**	ER	**0.514**		ND		**0.877**	ER	ND		ND		ND		ND		<0.6		<10	<10	NA	
Sodium	50000	NLE	21500	ND		ND		**41200**		**36900**		**37100**		**37700**		**37800**		**45600**		**44700**		**26200**		**25500**		**35200**		**37200**		**38200**		**40700**		**43400**	**40100**	NA	
Thallium	2	0.016	5.50	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**1.94**	ER	ND		ND		<0.53		<2.0	<2.0	ND	
Vanadium	NLE	6.3	108	ND		ND		**1.19**		**0.547**	ER	**0.372**	ER	ND		ND		**0.627**	ER	**0.79**	ER	**1.15**	ER	**0.709**	ER	ND		ND		ND		<0.5		<50	<50	NA	
Zinc	2000	470	233	**28.4**		**28.4**		**66.9**		**69.7**		**70.1**		**74.3**		**73.9**		**70.8**		**72.3**		**42.7**	ER	**41.8**	ER	**50.2**		**55.9**		**55.7**		**53.9**		**61.8**	**59.9**	NA	

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW19													M12MW20						
				37	38	39	40	41	42	43	44	44 Dup	LF1	LF2	LF3	LF4	LF5	36	37	38	39	40	41	42
Date Collected				5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009	11/18/2009	2/5/2010	2/5/2010	6/2/2010	9/8/2010	11/26/2010	3/2/2011	5/9/2011	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009
ANALYTE/Lab ID				80165.06	80286.06	80390.06	90109.06	90221.06	90370.06	90451.06	10052.03	10052.02	10226.05	10379.05	1051503	1107606	1119810	80074.07	80165.07	80286.07	80390.07	90109.07	90221.07	90370.07
Metals (µg/L)																								
Aluminum	200	1600	121000	**320**	**320**	**320**	**2610**	**574**	**211**	**24.9** ER	**161**	**85.6** ER	ND	ND	<13	<200	<200	ND	ND	ND	ND	ND	ND	**13.3**
Antimony	6	0.6	20.70	ND	**2.89** ER	ND	**16.5**	**4.52** ER	ND	ND	ND	ND	**4.91** ER	**13.7**	**5.77** ER	<6.0	<6.0	ND	ND	ND	ND	**18**	**1.48** ER	ND
Arsenic	3	0.045	89.30	ND	ND	ND	**91.1**	**28.3**	**25.4**	**0.99** ER	**0.69** ER	ND	ND	**0.97** ER	<0.62	<3.0	<3.0	**3.11** ER	ND	ND	ND	**87.4**	**27**	**25**
Barium	6000	290	699	**27.4**	**12.3**	**11.8**	**9.24**	**8.72**	**7.92**	**16.9**	**3.43** ER	**2.8** ER	**5.81**	**6.08**	**6.35**	<200	<200	**41.9**	**44**	**44.6**	**31**	**34.1**	**30.9**	**28.6**
Beryllium	1	1.6	2.10	ND	ND	ND	**1.15**	**0.124** ER	ND	ND	ND	ND	ND	ND	<0.4	<1.0	<1.0	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	0.69	9.50	**0.374** ER	ND	**0.88** ER	**0.836** ER	**0.219** ER	ND	ND	ND	ND	ND	ND	<0.4	<3.0	<3.0	ND	**0.979** ER	**0.895** ER	**0.391** ER	ND	ND	ND
Calcium	NLE	NLE	45400	ND	ND	ND	**48000**	**48500**	**41200**	**70400**	**15000**	**13200**	**39200**	**42800**	**42400**	**37700**	**57400**	ND	ND	ND	ND	**46300**	**41300**	**41700**
Chromium	70	1600	191	**1.06** ER	ND	**0.544** ER	**1.07** ER	**0.539** ER	ND	ND	ND	ND	ND	ND	<0.6	<10	<10	**0.494** ER	ND	**0.359** ER	ND	ND	ND	ND
Cobalt	100	0.47	18.30	ND	ND	ND	ND	**0.236** ER	ND	ND	ND	ND	ND	ND	<0.3	<50	<50	ND	ND	ND	ND	ND	ND	ND
Copper	1300	62	65.60	**10.9**	ND	**3.57** ER	**404**	**9.91**	**1.07** ER	ND	ND	ND	ND	ND	<0.8	<10	<10	**7.78**	**0.953** ER	**22.1**	ND	ND	**1.32** ER	ND
Iron	300	1100	431000	ND	ND	ND	**62.9**	**583**	**200** ER	**3850**	ND	ND	ND	**262** ER	<132	**417**	**2580**	ND	ND	ND	ND	**4270**	**4200**	**2580**
Lead	5	NLE	22.70	ND	ND	ND	**18**	**1.57** ER	ND	ND	ND	ND	ND	ND	<2.10	<3.0	<3.0	ND	ND	ND	ND	**6.82**	**1.47** ER	ND
Magnesium	NLE	NLE	62700	ND	ND	ND	**4040**	**4050**	**3520**	**6370**	**1250**	**1110**	**3330**	**3540**	**3300**	<5000	<5000	ND	ND	ND	ND	**4300**	**3930**	**4010**
Manganese	50	32	331	ND	ND	ND	**28.8**	**28.1**	**23.4**	**104**	**9.05**	**7.84**	**16.2**	**17.2**	**17.8**	**16.9**	**69.3**	ND	ND	ND	ND	**48.9**	**38.4**	**36.6**
Mercury	2	0.063	0.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12** ER	<0.254	<0.2	<0.20	ND	ND	ND	ND	ND	ND	ND
Nickel	100	30	187	**23.8**	**1.72** ER	**0.775** ER	ND	**3.41** ER	ND	**3.05** ER	ND	ND	ND	ND	<0.7	<10	<10	**3.52** ER	**0.538** ER	**1.96** ER	ND	ND	ND	ND
Potassium	NLE	NLE	137000	ND	ND	ND	**5930**	**6280**	**5240**	**6720**	**2940**	**2850**	**5200**	**5630**	**5620**	<10000	<10000	ND	ND	ND	ND	**6100**	**5850**	**5590**
Selenium	40	7.8	29.60	**7.82** ER	**8.01** ER	ND	**79.5**	ND	**36.6**	ND	**19.9** ER	**22.1**	NR	ND	<1.36	<10	<10	ND	**5.85** ER	**4.86** ER	ND	**86.4**	ND	**39.2**
Silver	40	7.1	ND	NA	NA	NA	ND	ND	**1.67** ER	**1.33** ER	**1.48** ER	**1.48** ER	ND	ND	<0.6	<10	<10	ND	ND	ND	ND	ND	ND	**0.574**
Sodium	50000	NLE	21500	NA	NA	NA	**2130**	**3810** ER	**3930** ER	**17200**	**2480** ER	**2350** ER	**5720**	**3970** ER	**4840** ER	<10000	<10000	ND	ND	ND	ND	**5280**	**4510** ER	**4870**
Thallium	2	0.016	5.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.72** ER	ND	<0.53	<2.0	<2.0	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	6.3	108	NA	NA	NA	**0.475**	**1.03** ER	**0.796** ER	**2.08** ER	ND	ND	ND	ND	<0.5	<50	<50	ND	ND	ND	ND	**0.753**	**0.464** ER	**0.931**
Zinc	2000	470	233	NA	NA	NA	**460**	**102**	**29.4**	**17.6** ER	**34.9** ER	**20** ER	ND	**11.4** ER	<2.5	**25.8**	<20	**25.9**	**25.9**	**25.9**	**25.9**	**14.5**	**4.6** ER	**4.51**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW20							M12MW21													
				43	44	LF1	LF2	LF3	LF4	LF5	36	37	38	39	40	41	42	43	44	LF1	LF2	LF2 Dup	LF3	LF4
Date Collected				11/18/2009	2/4/2010	6/2/2010	9/8/2010	11/26/2010	3/2/2011	5/9/2011	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010	9/9/2010	11/26/2010	03/01/11
ANALYTE/Lab ID				90451.07	10049.06	10226.06	10379.06	1051504	1107603	1119811	80074.08	80165.08	80286.08	80390.08	90109.08	90221.08	90370.08	90451.08	10052.04	10234.04	10382.03	10382.02	1051505	1107409
Metals (µg/L)																								
Aluminum	200	1600	121000	ND	**44** ER	ND	ND	<13	<200	<200	ND	ND	ND	ND	ND	ND	**16**	**126**	**227**	ND	ND	ND	<13	<200
Antimony	6	0.6	20.70	ND	ND	ND	**13.3**	<4.7	<6.0	<6.0	ND	ND	ND	ND	**11.8**	**6.2** ER	ND	**7.79** ER	ND	**8.59** ER	**18.9**	**20.2**	**6.16** ER	<6.0
Arsenic	3	0.045	89.30	**0.8** ER	**1.17** ER	ND	ND	**0.94** ER	<3.0	<3.0	ND	ND	**2.78** ER	ND	**109**	**26.1**	**26.8**	**1.74** ER	**1.1** ER	ND	**1.3** ER	**1.17** ER	**1.1** ER	<3.0
Barium	6000	290	699	**30.4**	**22**	**25.6**	**26.1**	**12.9**	<200	<200	**61.3**	**57.1**	**43.7**	**55**	**71.6**	**65.1**	**56.7**	**64.3**	**50.5**	**50.6**	**57**	**60.9**	**54.9**	<200
Beryllium	1	1.6	2.10	ND	ND	ND	ND	<0.4	<1.0	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	<1.0
Cadmium	4	0.69	9.50	ND	ND	ND	ND	<0.4	<3.0	<3.0	ND	**0.727** ER	ND	**0.321** ER	ND	ND	ND	ND	ND	ND	**0.799** ER	**0.776** ER	<0.4	<3.0
Calcium	NLE	NLE	45400	**41700**	**25700**	**40700**	**41000**	**56000**	**39600**	**40100**	ND	ND	ND	ND	**67100**	**64500**	**61700**	**64700**	**36000**	**62600**	**65300**	**69600**	**65700**	**61900**
Chromium	70	1600	191	ND	ND	ND	ND	<0.6	<10	<10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.6	<10
Cobalt	100	0.47	18.30	ND	ND	ND	ND	<0.3	<50	<50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	<50
Copper	1300	62	65.60	ND	**1.75** ER	ND	ND	<0.8	<10	<10	**3.54** ER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.8	<10
Iron	300	1100	431000	**3660**	**3860**	**1400**	**1500**	<132	**11100**	**41100**	ND	ND	ND	ND	**8750**	**13200**	ND	**10000**	**7090**	**6950**	**8590**	**9090**	**6940**	**18200**
Lead	5	NLE	22.70	ND	ND	ND	**4.09** ER	<2.10	<3.0	<3.0	ND	ND	ND	ND	**2.4** ER	**3.45** ER	ND	ND	ND	ND	ND	ND	**2.47** ER	<3.0
Magnesium	NLE	NLE	62700	**3910**	**2350**	**3920**	**3770**	**5000**	<5000	<5000	ND	ND	ND	ND	**6300**	**6110**	**6150**	**6450**	**3830**	**6440**	**6860**	**7280**	**6670**	**6080**
Manganese	50	32	331	**37.5**	**22.5**	**33.3**	**33.1**	**19.1**	**42.4**	**65.4**	ND	ND	ND	ND	**80.3**	**67.2**	**79.5**	**83.5**	**48.9**	**88**	**99.6**	**106**	**105**	**103**
Mercury	2	0.063	0.26	ND	ND	ND	ND	<0.254	<0.2	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.18** ER	**0.11** ER	<0.254	<0.2
Nickel	100	30	187	**0.632** ER	**1.25** ER	ND	ND	<0.7	<10	<10	**3.22** ER	**0.755** ER	**1.04** ER	ND	ND	ND	ND	**0.644** ER	**1.02** ER	ND	ND	ND	<0.7	<10
Potassium	NLE	NLE	137000	**5590**	**3560**	**5870**	**5630**	**7810**	<10000	<10000	ND	ND	ND	ND	**6530**	**6360**	**5950**	**6620**	**5090**	**6280**	**6570**	**6920**	**7610**	<10000
Selenium	40	7.8	29.60	ND	ND	NR	ND	<1.36	<10	<10	ND	**4.31** ER	**6.04** ER	ND	**106**	**8.17** ER	**44.9**	ND	**30.1**	NR	ND	ND	<1.36	<10
Silver	40	7.1	ND	ND	ND	ND	ND	<0.6	<10	<10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.28** ER	<10
Sodium	50000	NLE	21500	**6580**	**3580** ER	**5920**	**4140** ER	**10600**	<10000	<10000	ND	ND	ND	ND	**9680**	**9320**	**8450**	**9080**	**6430**	**8560**	**7440**	**8500**	**7750**	<10000
Thallium	2	0.016	5.50	ND	ND	ND	ND	<0.53	<2.0	<2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.85** ER	ND	<0.53	<2.0
Vanadium	NLE	6.3	108	**1.54** ER	**1.67** ER	ND	ND	<0.5	<50	<50	ND	ND	ND	ND	**1.64**	**0.712** ER	**1.44**	**2.45** ER	**1.83** ER	ND	ND	ND	<0.5	<50
Zinc	2000	470	233	ND	**4.72** ER	ND	**1.35** ER	<2.5	<20	<20	**13.8**	**13.8**	**13.8**	**13.8**	ND	ND	**3.47**	ND	**2.92** ER	ND	ND	ND	<2.5	<20

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW21	M12MW22																		M12MW23				
				LF5	36	37	38	39	40	41	42	43	44	LF1	LF1 Dup	LF2	LF3	LF4	LF5	36	37	38	39	40
Date Collected				05/09/11	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009	11/18/2009	2/5/2010	6/4/2010	6/4/2010	9/9/2010	12/7/2010	3/1/2011	5/10/2011	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009
ANALYTE/Lab ID				1119812	80074.09	80165.09	80286.09	80390.09	90109.09	90221.09	90370.09	90451.09	10052.05	10235.03	10235.02	10382.07	1053203	1107408	1119906.00	80074.1	80165.1	80286.1	80390.1	90109.1
Metals (µg/L)																								
Aluminum	200	1600	121000	<200	ND	ND	ND	ND	**80**	**140**	**134**	ND	ND	ND	ND	**11.8**	**17.7**	<4.7	<6.0	<6.0	**3940**	**3940**	**3940**	**3940**	**4650**
Antimony	6	0.6	20.70	<6.0	ND	ND	ND	4.48 ER	**11**	**4.28** ER	ND	ND	ND	**9.83** ER	**11.8**	**17.7**	<4.7	<6.0	<6.0	ND	ND	ND	ND	**7.04** ER
Arsenic	3	0.045	89.30	<3.0	**25.5**	**93.4**	**68.8**	**55.8**	**113**	**110**	**64.8**	**96.1**	**47.2**	**136**	**122**	**47.82**	**81.6**	**113**	**76.4**	**2.8** ER	ND	ND	**2.6** ER	**56.8**
Barium	6000	290	699	<200	**42.5**	**50.3**	**60.8**	**45.9**	**50.9**	**50.8**	**50.3**	**52**	**24.2**	**48.8**	**51.6**	**43.6**	**54.6**	<200	<200	**44.9**	**46.8**	**31.8**	**40.8**	**36.5**
Beryllium	1	1.6	2.10	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.138** ER	**0.143** ER	ND	<0.4	<1.0	<1.0	ND	ND	**1.84**	**1.87**	**0.931**
Cadmium	4	0.69	9.50	<3.0	ND	**8.2**	**10.3**	ND	ND	ND	**4.34**	ND	**0.565** ER	**2.43**	**2.72**	**3.65**	**7.53**	<3.0	<3.0	**0.741** ER	**0.634** ER	**1.71** ER	**2.27**	**1.14** ER
Calcium	NLE	NLE	45400	**66300**	**30900**	**30900**	**30900**	**30900**	**35800**	**39300**	**24900**	**41200**	**21900**	**49700**	**50400**	**28500**	**47000**	**65800**	**38700**	ND	ND	ND	ND	**23800**
Chromium	70	1600	191	<10	**0.362** ER	ND	**0.84** ER	ND	ND	**0.92** ER	ND	ND	ND	ND	ND	ND	<0.6	<10	<10	**1.71** ER	**1.97** ER	**1.6** ER	**2.4** ER	**1.17** ER
Cobalt	100	0.47	18.30	<50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	<50	<50	ND	ND	ND	ND	**4.17**
Copper	1300	62	65.60	<10	**4.39** ER	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.8	<10	<10	**6.07**	**3.92** ER	**5.99**	**3.82** ER	**3.7** ER
Iron	300	1100	431000	**44700**	**124000**	**124000**	**124000**	**124000**	**94900**	**82500**	**98500**	**92900**	**44200**	**72900**	**76600**	**74800**	**109000**	**105000**	**74000**	ND	ND	ND	ND	**133**
Lead	5	NLE	22.70	<3.0	ND	**8.49**	**11.6**	ND	**12**	ND	**5.02**	**6.04**	ND	**7**	**4.83** ER	**7.19**	**14.5**	<3.0	<3.0	ND	ND	ND	**1.5** ER	**4.83** ER
Magnesium	NLE	NLE	62700	**6110**	**8110**	**8110**	**8110**	**8110**	**10400**	**10200**	**8350**	**10600**	**5350**	**10900**	**11100**	**7600**	**11400**	**12700**	**8990**	ND	ND	ND	ND	**5410**
Manganese	50	32	331	**119**	**550**	**550**	**550**	**550**	**418**	**379**	**357**	**387**	**201**	**338**	**343**	**285**	**439**	**485**	**354**	ND	ND	ND	ND	**147**
Mercury	2	0.063	0.26	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.07** ER	**0.07** ER	**0.18** ER	<0.254	<0.2	<0.20	ND	ND	ND	ND	ND
Nickel	100	30	187	<10	**2.08** ER	ND	**1.38** ER	ND	ND	ND	ND	ND	ND	**0.65** ER	**0.579** ER	ND	**1.28** ER	<10	<10	**10.7**	**7.95**	**29.9**	**30.8**	**20.1**
Potassium	NLE	NLE	137000	<10000	**3010**	**3010**	**3010**	**3010**	**4160**	**4560**	**4880**	**4460**	**2390**	**3240**	**3320**	**4170**	**5330**	<10000	<10000	ND	ND	ND	ND	**1970**
Selenium	40	7.8	29.60	<10	ND	ND	ND	ND	ND	**3.39** ER	ND	ND	ND	NR	NR	ND	<1.36	<10	<10	ND	**3.94** ER	**5.07** ER	ND	**65.9**
Silver	40	7.1	ND	<10	ND	ND	ND	ND	ND	**2.02** ER	ND	ND	ND	**11.7**	**11.7**	**10.8**	<0.6	<10	<10	ND	ND	ND	ND	ND
Sodium	50000	NLE	21500	<10000	**2000**	**2000**	**2000**	**2000**	**32800**	**32200**	**28800**	**33900**	**15600**	**29700**	**29400**	**24300**	**32700**	**31200**	**32100**	ND	ND	ND	ND	**25500**
Thallium	2	0.016	5.50	<2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.53	<2.0	<2.0	ND	ND	ND	ND	ND
Vanadium	NLE	6.3	108	<50	ND	ND	ND	ND	**7.7**	**1.61** ER	**12.1**	**14.3**	**5.05**	ND	ND	ND	<0.5	<50	<50	ND	ND	ND	ND	**0.804**
Zinc	2000	470	233	<20	ND	ND	ND	ND	**11**	**4.44** ER	**5.55** ER	ND	**3.56** ER	ND	ND	ND	<2.5	<20	<20	**149**	**149**	**149**	**149**	**116**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW23										M12MW24									
				41	42	43	44	LF1	LF2	LF3	LF4	LF5		36	37	38	39	40	41	42	43	44	LF1	LF2
Date Collected				6/8/2009	9/8/2009	11/18/2009	2/4/2010	6/4/2010	9/10/2010	12/7/2010	3/1/2011	5/10/2011		3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009	11/18/2009	2/4/2010	6/3/2010	9/9/2010
ANALYTE/Lab ID				90221.1	90370.1	90451.1	10049.07	10235.05	10384.01	1053203	1107405	1119907		80074.11	80165.11	80286.11	80390.11	90109.11	90221.11	90370.11	90451.11	10049.08	10234.05	10382.05
Metals (µg/L)																								
Aluminum	200	1600	121000	1350	5130	1270	1460	3790	7780	483	1340	2280		1170	1170	1170	1170	2480	466	948	4510	3220	6000	6710
Antimony	6	0.6	20.70	3.14	ND	ND	ND	6.75	12.8	<4.7	<6.0	<6.0		ND	ND	ND	ND	18.6	2.37	ND	ND	ND	6.25	13.9
Arsenic	3	0.045	89.30	17.9	15	1.05	ND	0.74	3.67	1.51	<3.0	<3.0		ND	ND	ND	ND	72.8	16.7	17.3	0.82	ND	ND	1.24
Barium	6000	290	699	46.7	31.6	57	27.7	70.3	46.5	42.9	<200	<200		49.7	33.5	30.1	60	43.6	27.1	39.9	53.3	37.6	56.7	61.3
Beryllium	1	1.6	2.10	0.574	1.67	0.568	0.271	1.23	2.05	<0.4	<1.0	<1.0		0.553	0.203	ND	1.44	0.765	0.193	0.432	1.24	0.677	1.35	1.78
Cadmium	4	0.69	9.50	0.782	1.95	1.13	ND	1.86	2	1.07	<3.0	<3.0		0.454	0.689	0.359	1.41	ND	ND	ND	ND	0.817	1	1.05
Calcium	NLE	NLE	45400	17700	25700	17700	9620	26900	34700	8150	6630	20400		ND	ND	ND	ND	31200	22600	25900	44900	32800	53800	52500
Chromium	70	1600	191	0.472	ND	ND	2.59	ND	2.04	2.53	10.4	<10		ND	0.473	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	100	0.47	18.30	3.05	6.35	2.73	1.25	7.36	8	<0.3	<50	<50		ND	ND	ND	ND	8.27	3.1	5.1	14.2	8.91	15.8	18.5
Copper	1300	62	65.60	2.63	4.32	ND	2.22	3.41	2.49	3.01	11.2	<10		6.2	1.35	ND	0.821	ND	0.928	ND	ND	1.59	ND	4.06
Iron	300	1100	431000	236	273	85.4	441	520	2760	528	1910	716		ND	ND	ND	ND	2590	1590	2000	1840	2240	2070	3600
Lead	5	NLE	22.70	2.4	ND	ND	ND	2.78	5.49	3.21	<3.0	<3.0		ND	ND	ND	ND	4.67	ND	ND	ND	ND	ND	ND
Magnesium	NLE	NLE	62700	4000	5770	4030	2530	6420	7750	2670	<5000	<5000		ND	ND	ND	ND	6510	3590	4940	10000	6800	11900	12300
Manganese	50	32	331	1.03	183	83.4	51.1	187	230	19.2	19.9	269		ND	ND	ND	ND	251	152	248	365	257	433	467
Mercury	2	0.063	0.26	ND	ND	ND	ND	0.07	ND	<0.254	<0.2	<0.20		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.21
Nickel	100	30	187	16.7	25.7	18	10.8	32.4	36.3	8.29	<10	25.9		12.7	5.51	2.29	25.6	7.94	4.86	5.57	19.2	12.4	18.7	24.7
Potassium	NLE	NLE	137000	2200	2970	2140	1560	2770	3820	1990	<10000	<10000		ND	ND	ND	ND	4730	5330	6340	6490	4870	6260	7370
Selenium	40	7.8	29.60	ND	30.2	10.9	ND	NR	ND	1.64	<10	<10		ND	6.05	6.31	ND	92.4	ND	35.3	13.6	16.8	NR	ND
Silver	40	7.1	ND	ND	1.43	0.808	0.617	ND	ND	<0.6	<10	<10		ND	ND	ND	ND	ND	ND	0.559	1.14	1.72	ND	ND
Sodium	50000	NLE	21500	19800	32500	20800	13600	34100	49400	15400	15400	28200		ND	ND	ND	ND	62300	29500	45900	93100	61900	111000	108000
Thallium	2	0.016	5.50	ND	ND	NA	ND	ND	ND	<0.53	<2.0	<2.0		ND	ND	ND	ND	ND	ND	ND	ND	ND	1.21	ND
Vanadium	NLE	6.3	108	0.908	0.662	0.839	1.52	0.711	2.33	0.709	<50	<50		ND	ND	ND	ND	0.506	0.511	ND	1.05	1.31	ND	ND
Zinc	2000	470	233	99.5	125	114	74.7	190	200	109	85	179		51	51	51	51	129	51.1	83	195	137	228	278

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW24			M12MW25														M12MW26			
				LF3	LF4	LF5	36	37	38	39	40	41	42	43	44	LF1	LF2	LF3	LF4	LF5	36	37	38	39
Date Collected				11/26/2010	3/1/2011	5/10/2011	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010	12/8/2010	3/2/2011	5/10/2011	3/7/2008	5/15/2008	8/7/2008	10/27/2008
ANALYTE/Lab ID				1051507	1107406	1119904	80074.12	80165.12	80286.12	80390.12	90109.12	90221.12	90370.12	90451.12	10052.06	10234.06	10382.06	1053403	1107605	1119905	80074.13	80165.13	80286.13	80390.13
Metals (µg/L)																								
Aluminum	200	1600	121000	**6680**	**6640**	**3680**	ND	ND	ND	ND	ND	**24** ER	**32.2** ER	**62.2** ER	ND	**32.1** ER	<13	<200	<200	**373**	**373**	**373**	**373**
Antimony	6	0.6	20.70	**7.51** ER	<6.0	<6.0	ND	ND	ND	ND	**21**	**2.79** ER	ND	**5.87** ER	**5.23** ER	**6.44** ER	**15.5**	**6.35** ER	<6.0	<6.0	ND	ND	ND	ND
Arsenic	3	0.045	89.30	<0.62	<3.0	<3.0	ND	ND	**3.01** ER	ND	**111**	**29.2**	**29.2**	**0.7** ER	**1.69** ER	ND	**0.89** ER	**1.42** ER	<3.0	<3.0	**6.37**	**4.06** ER	**3.44** ER	ND
Barium	6000	290	699	**65**	<200	<200	**29.1**	**25.7**	**66.8**	**256**	**31.4**	**38.2**	**58.3**	**78**	**22.5**	**15.3**	**14.3**	**13.2**	<200	<200	**78.7**	**41.9**	**46.1**	**41.4**
Beryllium	1	1.6	2.10	**1.83** ER	**1**	<1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.4	<1.0	<1.0	**0.379** ER	**0.295** ER	ND	**0.117** ER
Cadmium	4	0.69	9.50	**1.02** ER	<3.0	<3.0	ND	ND	**0.578** ER	**0.404** ER	ND	ND	ND	ND	ND	ND	ND	<0.4	<3.0	<3.0	**0.822** ER	**1.65** ER	**0.454** ER	**1.24** ER
Calcium	NLE	NLE	45400	**56700**	**54900**	**46400**	NA	NA	NA	NA	**70200**	**62000**	**78300**	**65500**	**30000**	**50800**	**55500**	**53100**	**52100**	**71100**	ND	ND	ND	ND
Chromium	70	1600	191	<0.6	<10	<10	**1.26** ER	**0.873** ER	ND	ND	**0.438** ER	ND	ND	ND	ND	ND	ND	<0.6	<10	<10	**1.21** ER	**1.74** ER	ND	**2.32** ER
Cobalt	100	0.47	18.30	**18.6**	<50	<50	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	<0.3	<50	<50	NA	NA	NA	NA
Copper	1300	62	65.60	**5.58**	<10	<10	**8.7**	**7.35**	ND	ND	**0.746** ER	**1.04** ER	ND	ND	**1.08** ER	ND	ND	<0.8	<10	<10	**15.9**	**5.97**	ND	ND
Iron	300	1100	431000	**1580**	**1990**	**3110**	**372**	**372**	**372**	**372**	**4190**	**5250**	**9230**	**4900**	**3350**	ND	**213** ER	<132	<100	**16500**	ND	ND	ND	ND
Lead	5	NLE	22.70	<2.1	<3.0	<3.0	ND	ND	ND	ND	**2.77** ER	**1.33** ER	ND	ND	ND	ND	ND	**3.23** ER	<3.0	<3.0	ND	**2.16** ER	ND	ND
Magnesium	NLE	NLE	62700	**12100**	**11300**	**8670**	**5370**	**5370**	**5370**	**5370**	**9490**	**8830**	**13000**	**14700**	**4220**	**4590**	**5120**	**4700**	<5000	**10200**	ND	ND	ND	ND
Manganese	50	32	331	**467**	**474**	**331**	**27**	**27**	**27**	**27**	**99.4**	**88.2**	**147**	**101**	**43.3**	**18.2**	**20.6**	**18.7**	**16.9**	**155**	ND	ND	ND	ND
Mercury	2	0.063	0.26	<0.254	<0.2	<0.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.254	<0.2	<0.2	ND	ND	ND	ND
Nickel	100	30	187	**23.4**	**23**	**14.6**	**6.82**	**2.2** ER	ND	ND	ND	**1.38** ER	ND	**0.821** ER	ND	ND	ND	**0.802** ER	<10	<10	**5.17**	**1.65** ER	**0.65** ER	ND
Potassium	NLE	NLE	137000	**8520**	<10000	<10000	**5750**	**5750**	**5750**	**5750**	**7710**	**8350**	**8990**	**9010**	**4680**	**6480**	**6870**	**7160**	<10000	<10000	ND	ND	ND	ND
Selenium	40	7.8	29.60	<1.36	<10	<10	ND	**7.22** ER	**8.74** ER	ND	**91.5**	**5.85** ER	**48.8**	**11.5** ER	**36.1**	NR	ND	**1.64** ER	<10	<10	ND	ND	**6.88** ER	ND
Silver	40	7.1	ND	<0.6	<10	<10	ND	ND	ND	ND	ND	ND	ND	**0.593**	**1.04** ER	ND	ND	<0.6	<10	<10	ND	ND	ND	ND
Sodium	50000	NLE	21500	**115000**	**112000**	**88900**	**24600**	**24600**	**24600**	**24600**	**45500**	**32900**	**69500**	**104000**	**22200**	**9170**	**8530**	**8490**	<10000	**66200**	ND	ND	ND	ND
Thallium	2	0.016	5.50	<0.53	<2.0	<2.0	ND	ND	ND	**2.15** ER	ND	ND	ND	ND	ND	ND	ND	<0.53	<2.0	<2.0	ND	ND	ND	ND
Vanadium	NLE	6.3	108	<0.5	<50	<50	ND	ND	ND	ND	**2.14**	**1.04** ER	**2.12** ER	**2.56** ER	**1.5** ER	ND	ND	<0.5	<50	<50	**1.53**	**1.53**	**1.53**	**1.53**
Zinc	2000	470	233	**270**	**270**	**187**	**14.9**	**14.9**	**14.9**	**14.9**	ND	**9.84** ER	**4.35** ER	ND	**11.6** ER	ND	ND	<2.5	<20	<20	**65.4**	**65.4**	**65.4**	**65.4**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS -
MARCH 2008 TO MAY 2011
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW26																	
				40		41		42		43		44		LF1		LF1 Dup		LF2		LF3		LF4	LF5
Date Collected				3/13/2009		6/8/2009		9/8/2009		11/18/2009		2/4/2010		6/3/2010		6/3/2010		9/9/2010		11/26/2010		3/2/2011	5/10/2011
ANALYTE/Lab ID				90109.13		90221.13		90370.13		90451.13		10049.09		10234.03		10234.02		10382.04		1051506		1107604.00	1119908.00
Metals (µg/L)																							
Aluminum	200	1600	121000	ND		**141**		**82.9**	ER	ND		**323**		**20.5**	ER	ND		**535**		<13		<200	<200
Antimony	6	0.6	20.70	**15.1**		**3.69**	ER	ND		ND		ND		**5.87**	ER	**6.7**	ER	**14.3**		<4.7		<6.0	<6.0
Arsenic	3	0.045	89.30	**76.2**		**11.5**		**20.4**		**2.27**	ER	**1.85**	ER	ND		ND		**1.92**	ER	**1.49**	ER	<3.0	**6.1**
Barium	6000	290	699	**38.5**		**19.7**		**31.8**		**27.1**		**23.1**		**27.1**		**24.9**		**38.3**		**50.4**		<200	<200
Beryllium	1	1.6	2.10	ND		**0.114**	ER	ND		ND		**0.163**	ER	ND		ND		**0.105**	ER	<0.4		<1.0	<1.0
Cadmium	4	0.69	9.50	ND		ND		ND		ND		**0.856**	ER	ND		ND		**0.808**	ER	**1.03**	ER	<3.0	<3.0
Calcium	NLE	NLE	45400	**34000**		**12600**		**33300**		**25000**		**12100**		**34100**		**31600**		**37300**		**49600**		**29200**	**28400**
Chromium	70	1600	191	ND		**1.12**	ER	ND		ND		**1.74**	ER	ND		ND		**3.05**	ER	**0.683**	ER	<10	<10
Cobalt	100	0.47	18.30	ND		ND		ND		ND		ND		ND		ND		ND		<0.3		<50	<50
Copper	1300	62	65.60	**1.15**	ER	**3.84**	ER	ND		ND		ND		ND		ND		**1.7**	ER	<0.8		<10	**10.6**
Iron	300	1100	431000	**2950**		**2450**		**3400**		**8920**		**7950**		**4730**		**4310**		**6050**		**15500**		**22400**	**29600**
Lead	5	NLE	22.70	**5.56**		ND		ND		ND		ND		ND		ND		**2.8**	ER	**2.52**	ER	<3.0	<3.0
Magnesium	NLE	NLE	62700	**3630**		**1500**		**3590**		**2630**		**1400**		**3750**		**3490**		**3940**		**5040**		**5530**	**5090**
Manganese	50	32	331	**35.8**		**30.1**		**36.1**		**52.4**		**24.9**		**38.3**		**35.7**		**36.6**		**92.9**		**156**	**331**
Mercury	2	0.063	0.26	ND		ND		ND		ND		ND		ND		ND		ND		<0.254		<0.2	<0.2
Nickel	100	30	187	ND		**2.27**	ER	ND		**1.01**	ER	**2.99**	ER	ND		ND		ND		**1.02**	ER	<10	<10
Potassium	NLE	NLE	137000	**4710**		**2320**		**5250**		**3730**		**2320**		**5270**		**4860**		**5530**		**6900**		<10000	<10000
Selenium	40	7.8	29.60	**78.7**		ND		**36.2**		ND		ND		NR		NR		ND		<1.36		<10	<10
Silver	40	7.1	ND	ND		ND		ND		ND		ND		ND		ND		**0.551**	ER	**3.48**	ER	<10	<10
Sodium	50000	NLE	21500	**9290**		**14300**		**4930**	ER	**17700**		**10600**		**7250**		**50000**		**4140**	ER	**15100**		**19500**	**19100**
Thallium	2	0.016	5.50	ND		ND		ND		ND		ND		ND		ND		ND		<0.53		<2.0	<2.0
Vanadium	NLE	6.3	108	**1.53**	ER	**1.55**	ER	**2.08**	ER	**2.04**		**3.76**	ER	ND		ND		**2.76**	ER	<0.5		<50	<50
Zinc	2000	470	233	**11.7**	ER	**87.9**		**5.39**	ER	**3.15**		**31**	ER	**4.55**	ER	ND		**36.5**	ER	**3.12**	ER	<20	**27.6**

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

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

Volatile Organic Compounds and Pesticides were sampled in certain wells (see Table 2.2) but were not detected above the reporting limit (RL) and are therefore not included in this table.

LF = Low flow sampling method used to collect sample
DUP = field duplicate sample
DATA FLAGS:
ER = Estimated result
J = Analyte detected between MDL and practical quantitation limit (PQL)
NA = Not analyzed
ND = Not detected
NLE = No limit established
NR = Not reported
< = the analyte was not detected above the method detection limit (MDL)
Shaded cells = concentration exceeds USEPA Tapwater RSLs
Shaded cells = concentration exceeds NJDEP GWQS.
Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater
Shaded cells = concentration exceeds Weston 1995 background

TABLE 4.6
GROUNDWATER SAMPLING SUMMARY RESULTS - AUGUST 2013
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

WELL ID:	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston 1995 Background (Main Post) (3)	M12MW11	M12MW12	M12MW13	M12MW14	M12MW15	M12MW16	M12MW17	M12MW18	M12MW19
DATE SAMPLED:				20-Aug-2013	21-Aug-2013	21-Aug-2013	21-Aug-2013	21-Aug-2013	23-Aug-2013	21-Aug-2013	21-Aug-2013	20-Aug-2013
INTERVAL (ft bgs):				5-20	5-20	5-20	5-20	5-20	4-14	4-14	4-14	3-18
Metals - SW6010C												
Lead	5	NLE	22.7	2.0 U	**1.6** J	2.0 U	2.0 U	**0.951** J	2.0 UJ	**2.0** J	2.0 U	2.0 U

WELL ID:	NJDEP GWQS (1)	USEPA Tapwater RSL (HQ=0.1) (2)	Weston Background Concentration (3)	GW-M12MW20	M12MW21	M12MW21 Dup	M12MW22	M12MW23	M12MW24	M12MW25	M12MW26
DATE SAMPLED:				20-Aug-2013	20-Aug-2013	20-Aug-2013	22-Aug-2013	21-Aug-2013	21-Aug-2013	20-Aug-2013	20-Aug-2013
INTERVAL (ft bgs):				3-18	3-18	3-18	3-18	3-18	3-18	3-18	3-18
Metals - SW6010C											
Lead	5	NLE	22.7	**1.7** J	2.0 U	2.0 U	2.0 U	**2.2** J	2.0 U	2.0 U	2.0 U

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS), Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010). Available at: http://www.nj.gov/dep/wms/bwqsa/gwqs.htm

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

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

RSL values were current at the time that the screening was conducted.
DUP = field duplicate sample
Detections are bolded.
U = the analyte was not detected above the indicated limit of detection (LOD)
J = Analyte detected between MDL and practical quantitation limit (PQL)
NLE = No limit established

TABLE 4.7
GROUNDWATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Concentration		Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples (1)	Number of Detections	Number of Exceedances			Identification of COPCs	
							NJDEP GWQS (2)	USEPA Tapwater RSL (HQ=0.1) (3)	Weston 1995 Background (Main Post) (4)	Evaluated as COPC in Risk Assessment?	Rationale
Metals (µg/L)											
Aluminum	8590		MW15	5/9/2011	120	73	55	18	0	No	Less than maximum background
Antimony	20.2		MW21	9/9/2010	120	40	30	40	0	No	Less than maximum background
Arsenic	145		MW14	5/10/2011	120	74	36	74	5	No	All exceedances of maximum background occurred in upgradient (M12MW14) or crossgradient (M12MW22) monitoring wells
Barium	1360		MW12	5/9/2011	120	92	0	4	1	No	Anomalous background exceedance (M12MW12) not representative of dataset; the other 4 low-flow concentrations from this monitoring well were less than RSL and maximum background
Beryllium	2.05		MW23	9/10/2010	120	44	11	4	0	No	Less than maximum background
Cadmium	7.53		MW22	12/7/2010	120	42	2	38	0	No	Less than maximum background
Calcium	78300		MW25	9/8/2009	120	118	0	0	44	No	Essential human nutrient
Chromium	43.9		MW15	5/9/2011	120	11	0	0	0	No	Less than tapwater RSL
Cobalt	30.4		MW11	10/7/2010	120	38	0	38	3	No	2 of 3 background exceedances occurred in upgradient monitoring well M12MW24; 3rd exceedance (M12MW11) was followed by 4 results < background and is not representative
Copper	30.2		MW15	5/9/2011	120	26	0	0	0	No	Less than tapwater RSL
Iron	109000		MW22	12/7/2010	120	105	89	81	0	No	Essential human nutrient
Lead	14.5		MW22	12/7/2010	137	29	9	0	0	No	Less than tapwater RSL
Magnesium	23300		MW16	11/18/2009	120	108	0	0	0	No	Essential human nutrient
Manganese	485		MW22	3/1/2011	120	117	76	91	14	No	13 of 14 background exceedances occurred in upgradient or crossgradient monitoring wells (M12MW24, M12MW22, M12MW15) and are not site-related; other exceedance (M12MW11) followed by 4 results < background
Mercury	0.21	ER	MW24	9/9/2010	120	11	0	10	0	No	Less than maximum background
Nickel	65.8		MW11	10/7/2010	120	63	0	10	0	No	Less than maximum background
Potassium	16300		MW13	11/30/2010	120	89	0	0	0	No	Essential human nutrient
Selenium	35.3		MW24	9/8/2009	120	17	4	22	12	No	3 background exceedances in upgradient monitoring wells; remaining 9 background exceedances occurred in 9/09 (7 samples) or 2/10 (2 samples); these events were not low-flow and exceedances were followed by 4 to 6 events of non-detect or <background results
Silver	11.7		MW22	6/4/2010	120	33	0	5	33	No	Exceedances of RSL are few, anomalous, not representative of the data set as a whole, and half of them are in a crossgradient monitoring well outside site boundary

TABLE 4.7
GROUNDWATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Concentration	Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples (1)	Number of Detections	Number of Exceedances			Identification of COPCs	
						NJDEP GWQS (2)	USEPA Tapwater RSL (HQ=0.1) (3)	Weston 1995 Background (Main Post) (4)	Evaluated as COPC in Risk Assessment?	Rationale
Sodium	558000	MW15	3/1/2011	120	110	28	0	68	No	Essential human nutrient
Thallium	1.94 ER	MW18	6/2/2010	120	5	0	5	0	No	Less than maximum background
Vanadium	21	MW15	12/8/2010	120	43	0	5	0	No	Less than maximum background
Zinc	278	MW24	9/9/2010	120	78	0	0	5	No	Less than tapwater RSL

Notes:

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

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

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

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

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

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

µg/L = micrograms/liter

COPC = contaminant of potential concern

ER = Estimated result

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-9																													
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria [2]**	42		43		44		45		46		47		48		49		50		51		52		53		54		55		56	
Date Collected			3/13/2007		6/26/2007		9/13/2007		12/19/2007		3/25/2008		6/26/2008		9/30/2008		12/29/2008		3/24/2009		6/29/2009		9/25/2009		12/7/2009		3/28/2010		6/22/2010		9/21/2010	
Analyte/Lab ID			70093.08		70230.08		70339.08		70541.08		80095.04		80213.08		80346.07		80478.07		90119.07		90268.07		90398.07		90472.07		10110.06		10277.07		10402.07	
Volatile Organic Compounds (µg/L)																																
Acetone [3]	NLE	1,400	**0.82**	J	ND		**0.69**		**1.91**	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromodichloromethane	17	17	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.42**	J	ND	
Chloroform	2,100	470	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**1.17**		ND	
cis -1,2-Dichloroethene [3]	NLE	3.6	**5.28**		ND		**0.52**	J	**2.78**		**1.87**	J	**0.92**	J	**1.71**	J	**2.21**		**1.17**	J	**1.81**	J	**0.25**	J	**1.19**		**2.8**		**0.7**		**0.71**	
Dibromochloromethane	13	17	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methyl *tert* -butyl ether [3]	NLE	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
tert -Butyl alcohol	NLE	NLE	ND		ND		**7.83**	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethene	12	30	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vinyl chloride	8.1	2.4	ND		ND		ND		**0.97**	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
TICs	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**9**		ND		ND		ND		ND	
Metals (µg/L)																																
Arsenic	0.061	0.14	ND		ND		ND		ND		ND		**3.22**		ND		**2.45**		**56.6**		**18.1**		**28.1**		**1.65**	ER	**1.69**	ER	**1.16**	ER	**1.6**	ER
Lead [3]	NLE	15	ND		**1.04**	ER	ND		ND		ND		**2.39**		ND		**1.88**		**9.2**		ND		ND		ND		ND		ND		ND	
Wet Chemistry																																
Ammonia (mg/L)	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		NA		NA		NA		NA		NA	
Fecal Coliform (cfu/100mL)	NLE	NLE	NA		**550**		**3200**		**300**		ND		**20**		**800**		**60**		ND		NA		NA		NA		NA		NA		NA	
Nitrates (mg/L) [4]	NLE	10	**1.44**		ND		ND		NA		**6.56**		**8.93**		ND		**1.11**		**1.37**		**0.839**		NA		NA		NA		NA		NA	
Oxygen (dissolved; mg/L)	NLE	NLE	**8.37**		**6.17**		**5.18**		**0.9**		**2.66**		**7.23**		**8.02**		**6.45**		**7.35**		**6.09**		**3.08**		**4.11**		**4.03**		**6.11**		**5.68**	
pH	NLE	5-9	**6.91**		**7.05**		**7.28**		**6.08**		**8.09**		**7.94**		**7.07**		**7.14**		**7.68**		**6.48**		**7.81**		**6.49**		**7.05**		**7.05**		**7.45**	
Phosphate (mg/L)	NLE	NLE	ND		ND		ND		NA		**0.01**		ND		ND		ND		**0.01**		ND		NA		NA		NA		NA		NA	
Salinity (%)	NLE	NLE	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0.1**		**0.1**		**0**		**0**		**0.02**	
Sulfate (mg/L)	NLE	NLE	**50.6**		**208**		**290**		NA		**30.9**		**78.12**		**30.1**		**77.2**		**60.6**		**185**		NA		NA		NA		NA		NA	
Temperature (ºC)	NLE	NLE	**9.44**		**28.5**		**19.8**		**5.56**		**8.2**		**24.63**		**21.1**		**8.74**		**7.51**		**21.94**		**23.41**		**4.49**		**7.48**		**25.2**		**20.13**	
Total Coliform (cfu/100mL)	NLE	NLE	**550**		**3450**		**11600**		**1700**		**300**		**6560**		**2050**		**900**		**780**		NA		NA		NA		NA		NA		NA	

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-9														
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria (2)**	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010
Analyte/Lab ID			70093.08	70230.08	70339.08	70541.08	80095.04	80213.08	80346.07	80478.07	90119.07	90268.07	90398.07	90472.07	10110.06	10277.07	10402.07

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) for saline (SE) waters as per N.J.A.C. 7:9B effective 4-4-11. Available at: http://www.nj.gov/dep/wms/bwqsa/swqs.htm.

(2) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (organisms only). Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. RSL values were current at the time the screening was conducted.

(4) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (water + organism) was used in place of the organism only value. Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

Shaded cells = concentration exceeds either NJDEP Saline or USEPA Human Health Criteria.

Shaded cells = concentration exceeds both NJDEP Saline and USEPA Human Health Criteria.

mg/L = milligrams/liter

µg/L = micrograms/liter

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

DATA FLAGS:

B = Compound detected in the sample and its associated blank sample

DUP = field duplicate sample

ER = Estimated result

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

NA = Not analyzed

ND = Not detected

NLE = No limit established

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-11																													
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria [2]**	42		43		44		45		46		47		48		49		50		51		52		53		54		55		56		
Date Collected			3/13/2007		6/26/2007		9/13/2007		12/19/2007		3/25/2008		6/26/2008		9/30/2008		12/29/2008		3/24/2009		6/29/2009		9/25/2009		12/7/2009		3/28/2010		6/22/2010		9/21/2010	
Analyte/Lab ID			70093.09		70230.09		70339.09		70541.09		80094.07		80213.09		80346.08		80478.08		90119.08		90268.08		90398.08		90472.08		10110.07		10277.08		10402.08	
Volatile Organic Compounds (µg/L)																																
Acetone [3]	NLE	1,400	**0.77**	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromodichloromethane	17	17	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	2,100	470	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis -1,2-Dichloroethene [3]	NLE	3.6	**25.58**		**17.94**		**7.28**		**13.11**		**11.54**		**15.55**		**11.86**		**10.4**		**5.1**		**8.13**		**3.73**		**7.42**		**10.04**		**3.97**		**3.71**		
Dibromochloromethane	13	17	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methyl *tert* -butyl ether [3]	NLE	14	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**0.26**	J	**0.46**	J	**0.51**		**0.27**	J
tert -Butyl alcohol	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethene	12	30	**0.4**	J	ND		ND		ND		ND		**0.33**	J	ND		ND		ND		ND		ND		**0.35**	J	**0.32**	J	ND		ND	
Vinyl chloride	8.1	2.4	**1.58**	J	ND		**0.8**	J	**4.44**		**1.18**	J	ND		**1.68**	J	ND		ND		**0.44**	J	ND		**0.3**	J	**0.76**		ND		ND	
TICs	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		**370**		ND		ND		ND		ND		ND		ND		ND	
Metals (µg/L)																																
Arsenic	0.061	0.14	ND		**4.32**	ER	ND		ND		ND		ND		**5.01**		ND		**69.2**		**15.9**		**18.4**		ND		**0.8**	ER	ND		ND	
Lead [3]	NLE	15	ND		ND		ND		ND		ND		ND		ND		ND		**5.47**		ND		ND		ND		ND		ND		ND	
Wet Chemistry																																
Ammonia (mg/L)	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		NA		NA		NA		NA		NA	
Fecal Coliform (cfu/100mL)	NLE	NLE	NA		**500**		**1400**		**50**		**20**		**200**		**150**		**40**		ND		NA		NA		NA		NA		NA		NA	
Nitrates (mg/L) [4]	NLE	10	**1.54**		**1.45**		**1.24**		NA		**4.43**		**7.34**		**1.19**		**1.25**		**1.69**		**1.49**		NA		NA		NA		NA		NA	
Oxygen (dissolved; mg/L)	NLE	NLE	**8.34**		**7.16**		**5.11**		**2.95**		**6.44**		**8.03**		**9.31**		**8.56**		**9.21**		**8.33**		**6.78**		**2.22**		**3.82**		**6.43**		**5.32**	
pH	NLE	5-9	**8.35**		**6.8**		**8.12**		**6.89**		**7.82**		**8.42**		**7.08**		**7.3**		**8.02**		**7.42**		**7.16**		**7.19**		**7.06**		**7.87**		**6.23**	
Phosphate (mg/L)	NLE	NLE	ND		ND		ND		NA		**0.02**		ND		ND		ND		**0.01**		ND		NA		NA		NA		NA		NA	
Salinity (%)	NLE	NLE	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**	
Sulfate (mg/L)	NLE	NLE	**18.2**		**16.9**		**15.6**		NA		**15.4**		**29.71**		**14.6**		**15.6**		**23.6**		**24.9**		NA		NA		NA		NA		NA	
Temperature (ºC)	NLE	NLE	**8.27**		**21**		**18.2**		**7.81**		**9.62**		**20.3**		**18.31**		**9.43**		**7.27**		**20.58**		**18.2**		**7.54**		**7.24**		**19.38**		**14.69**	
Total Coliform (cfu/100mL)	NLE	NLE	**600**		**3150**		**18600**		**750**		**160**		**4320**		**1350**		**760**		**80**		NA		NA		NA		NA		NA		NA		NA	

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-11														
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria (2)**	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010
Analyte/Lab ID			70093.09	70230.09	70339.09	70541.09	80094.07	80213.09	80346.08	80478.08	90119.08	90268.08	90398.08	90472.08	10110.07	10277.08	10402.08

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) for saline (SE) waters as per N.J.A.C. 7:9B effective 4-4-11. Available at: http://www.nj.gov/dep/wms/bwqsa/swqs.htm.

(2) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (organisms only). Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. RSL values were current at the time the screening was conducted.

(4) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (water + organism) was used in place of the organism only value. Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

Shaded cells = concentration exceeds either NJDEP Saline or USEPA Human Health Criteria.

Shaded cells = concentration exceeds both NJDEP Saline and USEPA Human Health Criteria.

mg/L = milligrams/liter

µg/L = micrograms/liter

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

DATA FLAGS:

B = Compound detected in the sample and its associated blank sample

DUP = field duplicate sample

ER = Estimated result

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

NA = Not analyzed

ND = Not detected

NLE = No limit established

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-12																		
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria [2]**	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010				
Analyte/Lab ID			70093.07	70230.07	70339.07	70541.07	80094.08	80213.07	80346.09	80478.09	90119.09	90268.09	90398.09	90472.09	10110.08	10277.09	10402.09				
Volatile Organic Compounds (µg/L)																					
Acetone [3]	NLE	1,400	ND	**3.19**	**2.91**	ND		ND	**4.35**	ND		ND	ND		ND	ND	ND	ND	ND		ND
Bromodichloromethane	17	17	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	**1.08**		ND
Chloroform	2,100	470	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	**2.73**		ND
cis -1,2-Dichloroethene [3]	NLE	3.6	**8.58**	**2.93**	**2.59**	**2.79**		**2.47**	**2.38**	**1.02**	J	**3.63**	**1.15**	J	**4.1**	**1.84**	**1.67**	**2.57**	**1.47**		**1.43**
Dibromochloromethane	13	17	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	**0.32**	J	ND
Methyl *tert* -butyl ether [3]	NLE	14	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	**0.25**	J	ND
tert -Butyl alcohol	NLE	NLE	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	ND		ND
Trichloroethene	12	30	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	ND	ND	ND	ND		ND
Vinyl chloride	8.1	2.4	ND	ND	ND	**1.13**	J	ND	ND	ND		ND	ND		ND	ND	ND	ND	ND		ND
TICs	NLE	NLE	ND	ND	ND	**4**		ND	ND	ND		**7**	ND		ND	ND	ND	ND	ND		ND
Metals (µg/L)																					
Arsenic	0.061	0.14	NA	NA	NA	NA		NA	NA	NA		NA	NA		NA	NA	NA	NA	NA		NA
Lead [3]	NLE	15	NA	NA	NA	NA		NA	NA	NA		NA	NA		NA	NA	NA	NA	NA		NA
Wet Chemistry																					
Ammonia (mg/L)	NLE	NLE	ND	ND	ND	ND		ND	ND	ND		ND	ND		ND	NA	NA	NA	NA		NA
Fecal Coliform (cfu/100mL)	NLE	NLE	NA	**50**	**2000**	**250**		ND	**40**	**50**		**40**	ND		NA	NA	NA	NA	NA		NA
Nitrates (mg/L) [4]	NLE	10	**1.59**	ND	ND	NA		**3.76**	**6.2**	**1.27**		**1.11**	**1.58**		**0.96**	NA	NA	NA	NA		NA
Oxygen (dissolved; mg/L)	NLE	NLE	**8.71**	**6.81**	**8.29**	**3.28**		**9.21**	**7.65**	**7.81**		**6.74**	**7.11**		**7.97**	**6.9**	**6.64**	**3.58**	**7.11**		**4.37**
pH	NLE	5-9	**6.74**	**7.62**	**7.93**	**6.84**		**8**	**8.77**	**6.76**		**7.32**	**7.88**		**7.71**	**7.22**	**7.47**	**7.02**	**7.02**		**6**
Phosphate (mg/L)	NLE	NLE	ND	ND	ND	NA		**0.01**	ND	ND		ND	ND		ND	NA	NA	NA	NA		NA
Salinity (%)	NLE	NLE	**0**	**0**	**0**	**0.01**		**0**	**0**	**0**		**0**	**0**		**0**	**0**	**0**	**0**	**0**		**0**
Sulfate (mg/L)	NLE	NLE	**24.4**	**16.9**	**11.4**	NA		**21.7**	**13.04**	**22.7**		**17.7**	**23.8**		**14.6**	NA	NA	NA	NA		NA
Temperature (ºC)	NLE	NLE	**8.59**	**26.5**	**21.3**	**6.32**		**9**	**24.84**	**19.72**		**8.82**	**6.88**		**24.03**	**20.19**	**6.03**	**8.08**	**21.84**		**17.02**
Total Coliform (cfu/100mL)	NLE	NLE	**450**	**900**	**11800**	**2150**		**180**	**2320**	**1850**		**820**	**820**		NA	NA	NA	NA	NA		NA

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-12														
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria (2)**	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010
Analyte/Lab ID			70093.07	70230.07	70339.07	70541.07	80094.08	80213.07	80346.09	80478.09	90119.09	90268.09	90398.09	90472.09	10110.08	10277.09	10402.09

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) for saline (SE) waters as per N.J.A.C. 7:9B effective 4-4-11. Available at: http://www.nj.gov/dep/wms/bwqsa/swqs.htm.

(2) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (organisms only). Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. RSL values were current at the time the screening was conducted.

(4) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (water + organism) was used in place of the organism only value. Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

Shaded cells = concentration exceeds either NJDEP Saline or USEPA Human Health Criteria.

Shaded cells = concentration exceeds both NJDEP Saline and USEPA Human Health Criteria.

mg/L = milligrams/liter

µg/L = micrograms/liter

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

DATA FLAGS:

B = Compound detected in the sample and its associated blank sample

DUP = field duplicate sample

ER = Estimated result

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

NA = Not analyzed

ND = Not detected

NLE = No limit established

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-19																									
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria [2]**	42		43		44		45		46	47		48	49	50		51	52	53		54		55		56	
Date Collected			3/13/2007		6/26/2007		9/13/2007		12/19/2007		3/25/2008	6/26/2008		9/30/2008	12/29/2008	3/24/2009		6/26/2009	9/25/2009	12/7/2009		3/28/2010		6/22/2010		9/21/2010	
Analyte/Lab ID			70093.10		70230.10		70339.10		70541.10		80094.12	80213.10		80346.13	80478.13	90119.13		90268.13	90398.13	90472.13		10110.12		10277.13		10402.13	
Volatile Organic Compounds (µg/L)																												
Acetone [3]	NLE	1,400	ND		ND		**0.28**		ND		ND	**3.91**		ND	ND	ND		ND	ND	ND		ND		ND		ND	
Bromodichloromethane	17	17	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		ND		**1.03**		ND	
Chloroform	2,100	470	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		ND		**2.49**		ND	
cis -1,2-Dichloroethene [3]	NLE	3.6	**8**		**2.9**		**1.89**	J	**4.64**		**4.14**	**2.11**		**2.97**	**3.7**	**1.53**	J	**2.4**	**1.37**	**1.75**		**3.98**		**1.16**		**1.4**	
Dibromochloromethane	13	17	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		ND		**0.3**	J	ND	
Methyl *tert* -butyl ether [3]	NLE	14	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		**0.25**	J	ND		ND	
tert -Butyl alcohol	NLE	NLE	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		ND		ND		ND	
Trichloroethene	12	30	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	ND	ND		ND		ND		ND	
Vinyl chloride	8.1	2.4	**0.37**	J	ND		ND		**1.77**	J	ND	ND		ND	ND	ND		ND	ND	ND		ND		ND		ND	
TICs	NLE	NLE	ND		ND		ND		**4**		ND	ND		ND	ND	ND		ND	ND	ND		ND		ND		ND	
Metals (µg/L)																												
Arsenic	0.061	0.14	ND		**3.06**	ER	ND		ND		ND	**2.88**	ER	ND	ND	**61.1**		**14**	**16.2**	ND		**0.75**	ER	ND		**1.42**	ER
Lead [3]	NLE	15	ND		ND		ND		ND		ND	ND		ND	**3.21**	**5.78**		ND	ND	**4.03**	ER	ND		ND		ND	
Wet Chemistry																												
Ammonia (mg/L)	NLE	NLE	ND		ND		ND		ND		ND	ND		ND	ND	ND		ND	NA	NA		NA		NA		NA	
Fecal Coliform (cfu/100mL)	NLE	NLE	NA		**50**		**3400**		**350**		ND	**60**		**200**	**20**	**20**		NA	NA	NA		NA		NA		NA	
Nitrates (mg/L) [4]	NLE	10	**1.46**		ND		ND		NA		**2.93**	**7.01**		ND	ND	**1.29**		**1.11**	NA	NA		NA		NA		NA	
Oxygen (dissolved; mg/L)	NLE	NLE	**8.31**		**6.86**		**6.73**		**3.33**		**8.27**	**8.29**		**7.38**	**7.63**	**7.58**		**8.07**	**6.73**	**6.82**		**4.11**		**5.85**		**4.67**	
pH	NLE	5-9	**7.66**		**7.32**		**7.86**		**7.01**		**7.82**	**8.59**		**7.29**	**7.24**	**7.88**		**7.29**	**7.17**	**7.5**		**7.21**		**7.88**		**7.29**	
Phosphate (mg/L)	NLE	NLE	ND		ND		ND		NA		**0.1**	ND		ND	ND	ND		ND	NA	NA		NA		NA		NA	
Salinity (%)	NLE	NLE	**0**		**0**		**0**		**0**		**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**		**0**		**0**	
Sulfate (mg/L)	NLE	NLE	**19.7**		**11.9**		**12.3**		NA		**14**	**11.76**		ND	**20**	**22.1**		**14.7**	NA	NA		NA		NA		NA	
Temperature (ºC)	NLE	NLE	**8.67**		**26**		**21.5**		**4.71**		**8.82**	**24.36**		**19.11**	**8.08**	**6.95**		**21.64**	**19.4**	**5.16**		**7.35**		**23.36**		**20.25**	
Total Coliform (cfu/100mL)	NLE	NLE	**450**		**4050**		**15800**		**2650**		**400**	**4560**		**4200**	**860**	**1580**		NA	NA	NA		NA		NA		NA	

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

			SS-19														
Round Number	**NJDEP SWQS Saline Water (SE) Criteria**	**USEPA National Recommended Water Quality Criteria (2)**	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/26/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010
Analyte/Lab ID			70093.10	70230.10	70339.10	70541.10	80094.12	80213.10	80346.13	80478.13	90119.13	90268.13	90398.13	90472.13	10110.12	10277.13	10402.13

Notes:

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) for saline (SE) waters as per N.J.A.C. 7:9B effective 4-4-11. Available at: http://www.nj.gov/dep/wms/bwqsa/swqs.htm.

(2) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (organisms only). Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. RSL values were current at the time the screening was conducted.

(4) U.S. Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (NRWQC) for protection of human health (water + organism) was used in place of the organism only value. Available at: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.

Shaded cells = concentration exceeds either NJDEP Saline or USEPA Human Health Criteria.

Shaded cells = concentration exceeds both NJDEP Saline and USEPA Human Health Criteria.

mg/L = milligrams/liter

µg/L = micrograms/liter

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

DATA FLAGS:

B = Compound detected in the sample and its associated blank sample

DUP = field duplicate sample

ER = Estimated result

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

NA = Not analyzed

ND = Not detected

NLE = No limit established

TABLE 4.9
SURFACE WATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

						Number of Exceedances		Identification of COPCs	
Analyte/Lab ID	Maximum Concentration	Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples (1)	Number of Detections	NJDEP SWQS Saline Water (SE) criteria (2)	USEPA National Recommended Water Quality Criteria (3)	Evaluated as COPC in Risk Assessment?	Rationale
Volatile Organic Compounds (µg/L)									
Acetone	No Detections	--	--	32	0	NLE	0	No	Not detected in recent samples
Bromodichloromethane	1.08	SS-12	6/22/2010	32	3	0	0	No	Less than NRWQC
Chloroform	2.73	SS-12	6/22/2010	32	3	0	0	No	Less than NRWQC
cis -1,2-Dichloroethene	10.4	SS-11	12/29/2008	32	32	NLE	12	No	Exceedances are at upsteam locations with the highest concentrations at S-11, where Husky Brook flows onto FTMM property; detections are the result of an off-site source.
Dibromochloromethane	0.32 J	SS-12	6/22/2010	32	2	0	0	No	Less than NRWQC
Methyl *tert* -butyl ether	0.51	SS-11	6/22/2010	32	6	NLE	0	No	No NRWQC
tert -Butyl alcohol	No Detections	--	--	32	0	NLE	NLE	No	Not detected in recent samples
Trichloroethene	0.35 J	SS-11	12/7/2009	32	2	0	0	No	Less than NRWQC
Vinyl chloride	0.76	SS-11	3/28/2010	32	3	0	1	No	Less than NRWQC
TICs	370	SS-11	12/29/2008	32	3	NLE	NLE	No	No NRWQC
Metals (µg/L)									
Arsenic	69.2	SS-11	3/24/2009	24	17	17	17	No	Detected upstream at similar concentrations
Lead	9.2	SS-9	3/24/2009	24	6	NLE	0	No	No NRWQC
Wet Chemistry									
Ammonia (mg/L)	No Detections	--	--	12	0	NLE	NLE	No	No NRWQC
Fecal Coliform (cfu/100mL)	60	SS-9	12/29/2008	8	5	NLE	NLE	No	No NRWQC
Nitrates (mg/L)	1.69	SS-11	3/24/2009	12	11	NLE	0	No	Less than NRWQC
Oxygen (dissolved; mg/L)	9.21	SS-11	3/24/2009	32	32	NLE	NLE	No	No NRWQC
pH	8.02	SS-11	3/24/2009	32	32	NLE	NLE	No	Within NRWQC range
Phosphate (mg/L)	0.01	SS-9	3/24/2009	12	2	NLE	NLE	No	No NRWQC
Salinity (%)	0.1	SS-9	9/25/2009	32	32	NLE	NLE	No	No NRWQC
Sulfate (mg/L)	185	SS-9	6/29/2009	12	12	NLE	NLE	No	No NRWQC
Temperature (ºC)	25.2	SS-9	6/22/2010	32	32	NLE	NLE	No	No NRWQC
Total Coliform (cfu/100mL)	1580	SS-19	3/24/2009	8	8	NLE	NLE	No	No NRWQC

Notes:
(1) The samples from the most recent 8 quarters of surface water sampling are included here.
(2) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (SWQS) for saline (SE) waters as per N.J.A.C. 7:9B effective 4-4-11. Available at: http://www.nj.gov/dep/wms/bwqsa/swqs.htm.
(3) U.S. Environmental Protection Agency, National Recommended Water Quality Criteria (NRWQC) for protection of human health (organism only), (http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#hhtable).
mg/L = milligrams/liter; µg/L = micrograms/liter; cfu/100 mL = colony-forming units/100 milliliters
Dup = duplicate sample collected
n/a = all concentrations were less than the detection limit, therefore, no location of maximum value identified.
NLE = No limit established

TABLE 4.10
SEDIMENT PCB RESULTS
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Boring ID	Sample Depth (bgs)	Date Collected	Total PCBs (mg/kg)	Aroclor 1254 (mg/kg)
B-1	0-6"	4/10/2000	< 0.0224	< 0.0012
	6"-12"	4/10/2000	< 0.0268	< 0.0014
	18"-24"	4/10/2000	< 0.0196	< 0.0010
B-2	0-6"	4/10/2000	< 0.0236	< 0.0012
	6"-12"	4/10/2000	< 0.0202	< 0.0011
B-3	0-6"	4/10/2000	< 0.0199	< 0.0010
	6"-12"	4/10/2000	< 0.0211	< 0.0011
B-4	0-6"	4/10/2000	< 0.0173	< 0.0009
	6"-12"	4/10/2000	< 0.0187	< 0.0010
	18"-24"	4/10/2000	< 0.0196	< 0.0010
B-5	0-6"	4/10/2000	< 0.0200	< 0.0011
	6"-12"	4/10/2000	< 0.0177	< 0.0009
B-6	0-6"	4/10/2000	< 0.0177	< 0.0009
	6"-12"	4/10/2000	< 0.0194	< 0.0010
	18"-24"	4/10/2000	< 0.0177	< 0.0009
B-7	0-6"	4/10/2000	< 0.0188	< 0.0010
	6"-12"	4/10/2000	< 0.0129	< 0.0007
B-8	0-6"	4/10/2000	< 0.0194	< 0.0010
	6"-12"	4/10/2000	< 0.0209	< 0.0011
B-9	0-6"	4/10/2000	< 0.0181	< 0.0010
	6"-12"	4/10/2000	< 0.0198	< 0.0010
B-10	0-6"	4/10/2000	< 0.0189	< 0.0010
	6"-12"	4/10/2000	< 0.0209	< 0.0011
B-11	0-6"	4/10/2000	< 0.0121	< 0.0006
	6"-12"	4/10/2000	< 0.0696	< 0.0037
B-11 (Dup)	0-6"	4/10/2000	**0.279**	**0.279**
	6"-12"	4/10/2000	< 0.0189	< 0.0010

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

Notes:
PCBs = Polychlorinated Biphenyls
bgs = below ground surface
mg/kg = milligram per kilogram
Dup = duplicate
NLE = No limit established
NJDEP = New Jersey Department of Environmental Protection
USEPA = United States Environmental Protection Agency
RSL values were current at the time that the screening was conducted.

TABLE 6.1
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A CURRENT/FUTURE OUTDOOR WORKER
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) [1]			USEPA Regional Screening Level Industrial Soil (HQ = 1.0)[2]			Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Outdoor worker Non-Carcinogenic Risk Ratio (EPC/USEPA RSL)	Outdoor worker Carcinogenic Risk Ratio (EPC/USEPA RSL)
					non-carcinogenic	carcinogenic						
	Volatile Organic Compounds											
71-43-2	Benzene	1.3	mg/kg	Max	420	5.1	mg/kg	both	0.85%	1.0%	0.0031	2.5E-07
75-01-4	Vinyl Chloride	0.67 J	mg/kg	Max	370	1.7	mg/kg	both	0.50%	1.6%	0.0018	3.9E-07
	Semivolatile Organic Coumpounds											
56-55-3	Benzo[a]anthracene	13	mg/kg	Max	--	2.9	mg/kg	yes	--	18%	--	4.5E-06
50-32-8	Benzo[a]pyrene	0.84	mg/kg	UCL	--	0.29	mg/kg	yes	--	11%	--	2.9E-06
205-99-2	Benzo[b]fluoranthene	11	mg/kg	Max	--	2.9	mg/kg	yes	--	15%	--	3.8E-06
207-08-9	Benzo[k]fluoranthene	9.1	mg/kg	Max	--	29	mg/kg	yes	--	1.2%	--	3.1E-07
53-70-3	Dibenz[a,h]anthracene	2	mg/kg	Max	--	0.29	mg/kg	yes	--	27%	--	6.9E-06
193-39-5	Indeno[1,2,3-cd]pyrene	4.4	mg/kg	Max	--	2.9	mg/kg	yes	--	6.0%	--	1.5E-06
	Pesticides / PCBs											
50-29-3	4,4'-DDT	1.98	mg/kg	Max	520	8.6	mg/kg	both	1.0%	0.91%	0.0038	2.3E-07
60-57-1	Dieldrin	0.032	mg/kg	Max	41	0.14	mg/kg	both	0.21%	0.90%	0.00078	2.3E-07
	Metals											
7429-90-5	Aluminum	24700	mg/kg	Max	1100000	--	mg/kg	no	6.2%	--	0.022	--
7440-36-0	Antimony	17	mg/kg	Max	470	--	mg/kg	no	9.8%	--	0.036	--
7440-38-2	Arsenic	15	mg/kg	UCL	480	3	mg/kg	both	8.6%	20%	0.031	5.0E-06
7440-43-9	Cadmium	25	mg/kg	Max	980	9300	mg/kg	both	7.1%	0.011%	0.026	2.7E-09
7440-48-4	Cobalt	27	mg/kg	Max	350	1900	mg/kg	both	22%	0.057%	0.078	1.4E-08
7440-50-8	Copper	502	mg/kg	Max	47000	--	mg/kg	no	2.9%	--	0.011	--
7439-96-5	Manganese	1110	mg/kg	Max	26000	--	mg/kg	no	12%	--	0.043	--
7439-97-6	Mercury	1.1	mg/kg	UCL	40	--	mg/kg	no	7.8%	--	0.028	--
7440-28-0	Thallium	0.50	mg/kg	Max	12	--	mg/kg	no	11%	--	0.042	--
7440-62-2	Vanadium	140	mg/kg	Max	5800	--	mg/kg	no	6.6%	--	0.024	--
7440-66-6	Zinc	6530	mg/kg	Max	350000	--	mg/kg	no	5.1%	--	0.019	--
	Lead											
7439-92-1	Lead	68	mg/kg	UCL	800	--	mg/kg	no	--	--	0.09	--
								Cumulative Risk Ratio			**0.4**	**3E-05**

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

(2) USEPA Regional Screening Level (RSL) for Industrail soil, Target Risk (TR) = 1 x 10^{-6} and Target Hazard Quotient (THQ) = 1.0. Revised January 2015. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/indsoil_sl_table_run_JAN2015.pdf

(3) "yes" indicates that the chemical exerts carcinogenic effects; "no" indicates that the chemical exerts non-carcinogenic effects; and "both" indicates that the chemical exerts both carcinogenic and non-carcinogenic effects
mg/kg = milligrams per kilogram
Max = Maximum detected concentration
UCL = Upper confidence limit
J = Analyte detected between MDL and practical quantitation limit (PQL).

TABLE 6.2
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A FUTURE UTILITY WORKER
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) [1]			Utility Worker Screening Level (SL) (HQ = 1.0)(units)[2]			Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Utility worker Non-Carcinogenic Risk Ratio (EPC/SL)	Utility worker Carcinogenic Risk Ratio (EPC/SL)
					non-carcinogenic	carcinogenic						
	Volatile Organic Compounds											
71-43-2	Benzene	1.3	mg/kg	Max	3680	1120	mg/kg	both	0.27%	0.37%	0.00035	1.2E-09
75-01-4	Vinyl Chloride	0.67 J	mg/kg	Max	3120	209	mg/kg	both	0.16%	1.0%	0.00021	3.2E-09
	Semivolatile Organic Coumpounds											
56-55-3	Benzo[a]anthracene	13	mg/kg	Max	--	243	mg/kg	yes	--	17%	--	5.3E-08
50-32-8	Benzo[a]pyrene	0.84	mg/kg	UCL	--	24	mg/kg	yes	--	11%	--	3.5E-08
205-99-2	Benzo[b]fluoranthene	11	mg/kg	Max	--	243	mg/kg	yes	--	14%	--	4.5E-08
207-08-9	Benzo[k]fluoranthene	9.1	mg/kg	Max	--	2430	mg/kg	yes	--	1.2%	--	3.7E-09
53-70-3	Dibenz[a,h]anthracene	2	mg/kg	Max	--	24	mg/kg	yes	--	26%	--	8.2E-08
193-39-5	Indeno[1,2,3-cd]pyrene	4.4	mg/kg	Max	--	243	mg/kg	yes	--	5.8%	--	1.8E-08
	Pesticides / PCBs											
50-29-3	4,4'-DDT	1.98	mg/kg	Max	1420	585	mg/kg	both	1.1%	1.1%	0.0014	3.4E-09
60-57-1	Dieldrin	0.032	mg/kg	Max	131	12	mg/kg	both	0.19%	0.89%	0.00024	2.8E-09
	Metals											
7429-90-5	Aluminum	24700	mg/kg	Max	2930000	--	mg/kg	no	6.4%	--	0.0084	--
7440-36-0	Antimony	17	mg/kg	Max	1180	--	mg/kg	no	11%	--	0.014	--
7440-38-2	Arsenic	15	mg/kg	UCL	1390	216	mg/kg	both	8.2%	22%	0.011	6.9E-08
7440-43-9	Cadmium	25	mg/kg	Max	2800	4590000	mg/kg	both	6.8%	0.0018%	0.0090	5.5E-12
7440-48-4	Cobalt	27	mg/kg	Max	884	918000	mg/kg	both	24%	0.010%	0.031	3.0E-11
7440-50-8	Copper	502	mg/kg	Max	118000	--	mg/kg	no	3.2%	--	0.0043	--
7439-96-5	Manganese	1110	mg/kg	Max	69900	--	mg/kg	no	12%	--	0.016	--
7439-97-6	Mercury	1.1	mg/kg	UCL	455	--	mg/kg	no	1.9%	--	0.0025	--
7440-28-0	Thallium	0.50	mg/kg	Max	30	--	mg/kg	no	13%	--	0.017	--
7440-62-2	Vanadium	140	mg/kg	Max	14800	--	mg/kg	no	7.2%	--	0.0095	--
7440-66-6	Zinc	6530	mg/kg	Max	885000	--	mg/kg	no	5.6%	--	0.0074	--
	Lead											
7439-92-1	Lead [4]	68	mg/kg	UCL	1400	--	mg/kg	no	--	--	0.05	--
								Cumulative Risk Ratio			**0.1**	**3E-07**

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

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

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

(4) Utility Worker Soil Screening Level for Lead was generated using USEPA's Adult Lead Model (ALM). ALM inputs provided in **Appendix B**.

mg/kg = milligrams per kilogram

Max = Maximum detected concentration

UCL = Upper confidence limit

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

TABLE 6.3
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A FUTURE RECREATIONAL USER
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) [1]			Recreational User Screening Level (SL) (HQ = 1.0)(units)[2]			Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Recreational User Non-Carcinogenic Risk Ratio (EPC/SL)	Recreational User Carcinogenic Risk Ratio (EPC/SL)
					non-carcinogenic	carcinogenic						
	Volatile Organic Compounds											
71-43-2	Benzene	1.3	mg/kg	Max	8670	110	mg/kg	both	0.26%	0.14%	0.00015	1.2E-08
75-01-4	Vinyl Chloride	0.67 J	mg/kg	Max	7330	0.30	mg/kg	both	0.16%	27%	0.000091	2.3E-06
	Semivolatile Organic Coumpounds											
56-55-3	Benzo[a]anthracene	13	mg/kg	Max	--	7.6	mg/kg	yes	--	20%	--	1.7E-06
50-32-8	Benzo[a]pyrene	0.84	mg/kg	UCL	--	0.76	mg/kg	yes	--	13%	--	1.1E-06
205-99-2	Benzo[b]fluoranthene	11	mg/kg	Max	--	7.63	mg/kg	yes	--	17%	--	1.4E-06
207-08-9	Benzo[k]fluoranthene	9.1	mg/kg	Max	--	76	mg/kg	yes	--	1.4%	--	1.2E-07
53-70-3	Dibenz[a,h]anthracene	2	mg/kg	Max	--	0.76	mg/kg	yes	--	31%	--	2.6E-06
193-39-5	Indeno[1,2,3-cd]pyrene	4.4	mg/kg	Max	--	7.6	mg/kg	yes	--	6.8%	--	5.8E-07
	Pesticides / PCBs											
50-29-3	4,4'-DDT	1.98	mg/kg	Max	3090	53	mg/kg	both	1.1%	0.44%	0.00064	3.7E-08
60-57-1	Dieldrin	0.032	mg/kg	Max	261	0.95	mg/kg	both	0.21%	0.40%	0.00012	3.4E-08
	Metals											
7429-90-5	Aluminum	24700	mg/kg	Max	6670000	--	mg/kg	no	6.3%	--	0.0037	--
7440-36-0	Antimony	17	mg/kg	Max	2680	--	mg/kg	no	11%	--	0.0062	--
7440-38-2	Arsenic	15	mg/kg	UCL	2930	19	mg/kg	both	8.8%	9.4%	0.0051	7.9E-07
7440-43-9	Cadmium	25	mg/kg	Max	6000	459000	mg/kg	both	7.2%	0.00065%	0.0042	5.5E-11
7440-48-4	Cobalt	27	mg/kg	Max	2010	91800	mg/kg	both	23%	0.0035%	0.014	3.0E-10
7440-50-8	Copper	502	mg/kg	Max	268000	--	mg/kg	no	3.2%	--	0.0019	--
7439-96-5	Manganese	1110	mg/kg	Max	159000	--	mg/kg	no	12%	--	0.0070	--
7439-97-6	Mercury	1.1	mg/kg	UCL	1090	--	mg/kg	no	1.8%	--	0.0010	--
7440-28-0	Thallium	0.50	mg/kg	Max	67	--	mg/kg	no	13%	--	0.0075	--
7440-62-2	Vanadium	140	mg/kg	Max	33700	--	mg/kg	no	7.1%	--	0.0042	--
7440-66-6	Zinc	6530	mg/kg	Max	2010000	--	mg/kg	no	5.6%	--	0.0032	--
	Lead											
7439-92-1	Lead [4]	68	mg/kg	UCL	2700	--	mg/kg	no	--	--	0.03	--
								Cumulative Risk Ratio			**0.06**	**8E-06**

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

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

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

(4) Recreational User Soil Screening Level for Lead was generated using USEPA's Adult Lead Model (ALM). ALM inputs provided in **Appendix B**.

mg/kg = milligrams per kilogram

Max = Maximum detected concentration

UCL = Upper confidence limit

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

FIGURES

Figure 1.1 Fort Monmouth Location
Figure 1.2 FTMM-12 Location
Figure 1.3 Layout of FTMM-12
Figure 2.1 FTMM-12 Soil Sample Locations
Figure 2.2 FTMM-12 Surface Water and Sediment Sample Locations
Figure 4.1 Summary of Method to Determine COPCs
Figure 6.1 Evaluation of Risk to Human Receptors
Figure 6.2 Human Health Conceptual Site Model



Legend

Installation Boundary

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

N

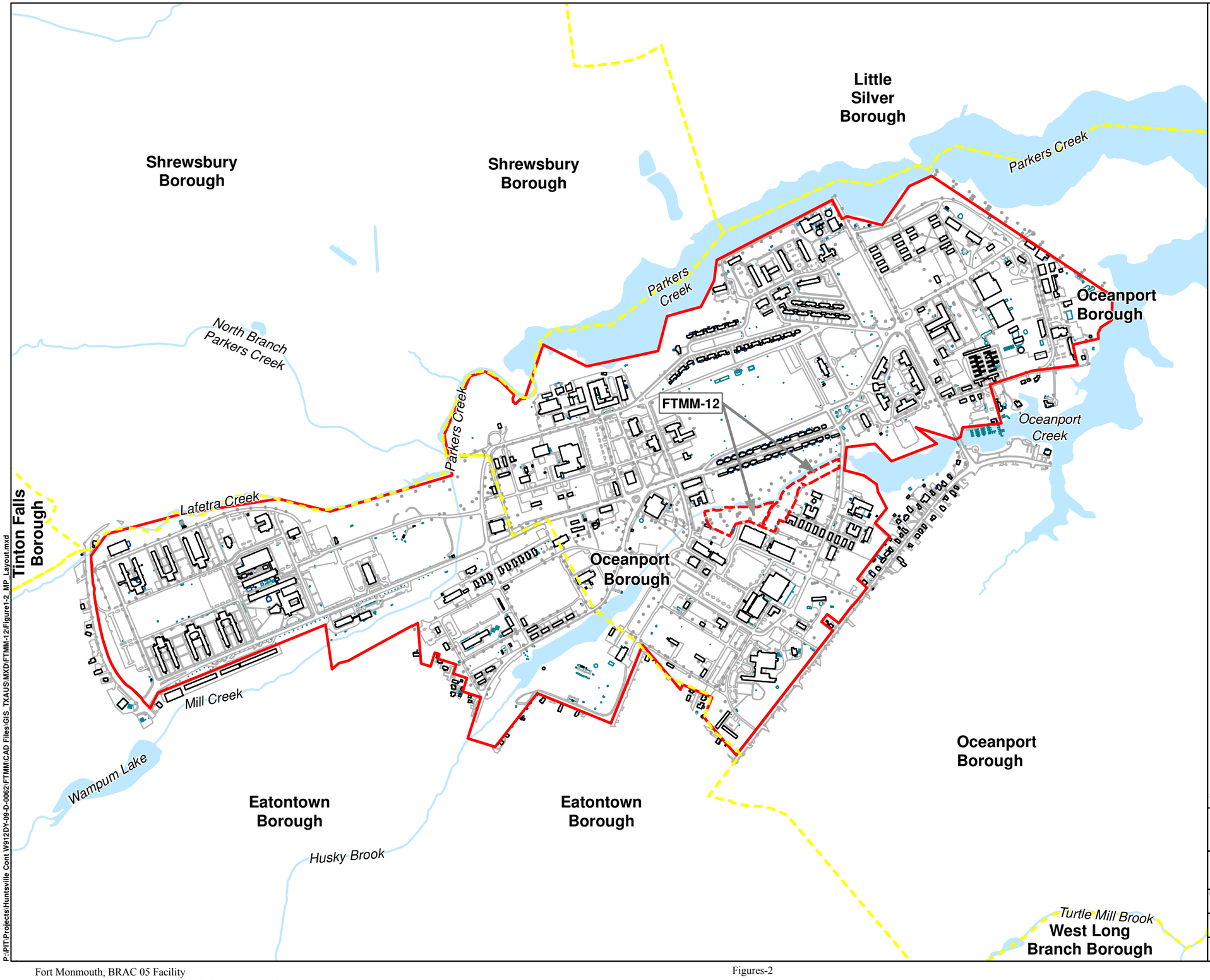
1 inch = 2,500 feet

0 0.5 1 Miles

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

PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey
Fort Monmouth Location	
CREATED BY: TS	REVIEWED BY: JH
DATE: May 2014	FIGURE NUMBER: Figure 1.1
PROJECT NUMBER: 748810.02060	FILE: Figure1-1_Location.mxd

J:\748\748810 Fort Monmouth\GIS\MXD\FTMM-12\Figure1-1_Location.mxd



LEGEND:

- FTMM-12 Landfill Boundary (2015)
- Surface Water Feature
- Municipal Boundary
- Installation Boundary

N

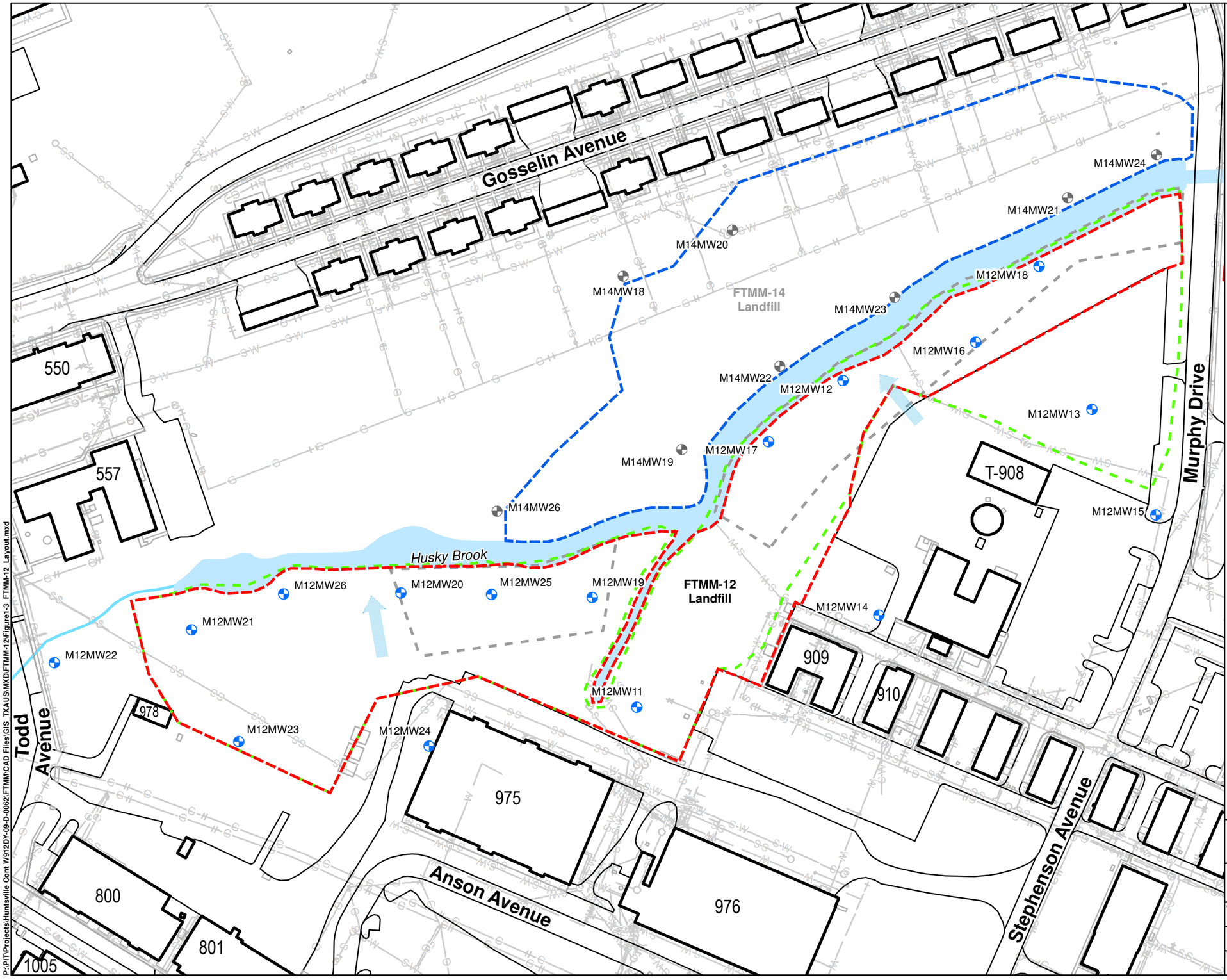
1 inch = 1,000 feet

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

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

PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey
FTMM-12 LOCATION	
CREATED BY: RR	REVIEWED BY: RF
DATE: JUN, 2015	FIGURE NUMBER: FIGURE 1.2
PROJECT NUMBER: 748810-02060	FILE: Figure1-2_MP_Layout.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS_TXAUS.MXD\FTMM-12\Figure1-2_MP_Layout.mxd



LEGEND:

- Shallow Monitoring Well
- FTMM-14 Shallow Monitoring Well
- FTMM-12 Landfill Revised Boundary (2010)
- FTMM-12 Landfill Original Boundary
- FTMM-12 Landfill Revised Boundary (2015)
- FTMM-14 Landfill Revised Boundary (2015)
- Municipal Boundary
- Installation Boundary
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Estimated Groundwater Flow Direction

N

1 inch = 130 feet

0 65 130 260 Feet

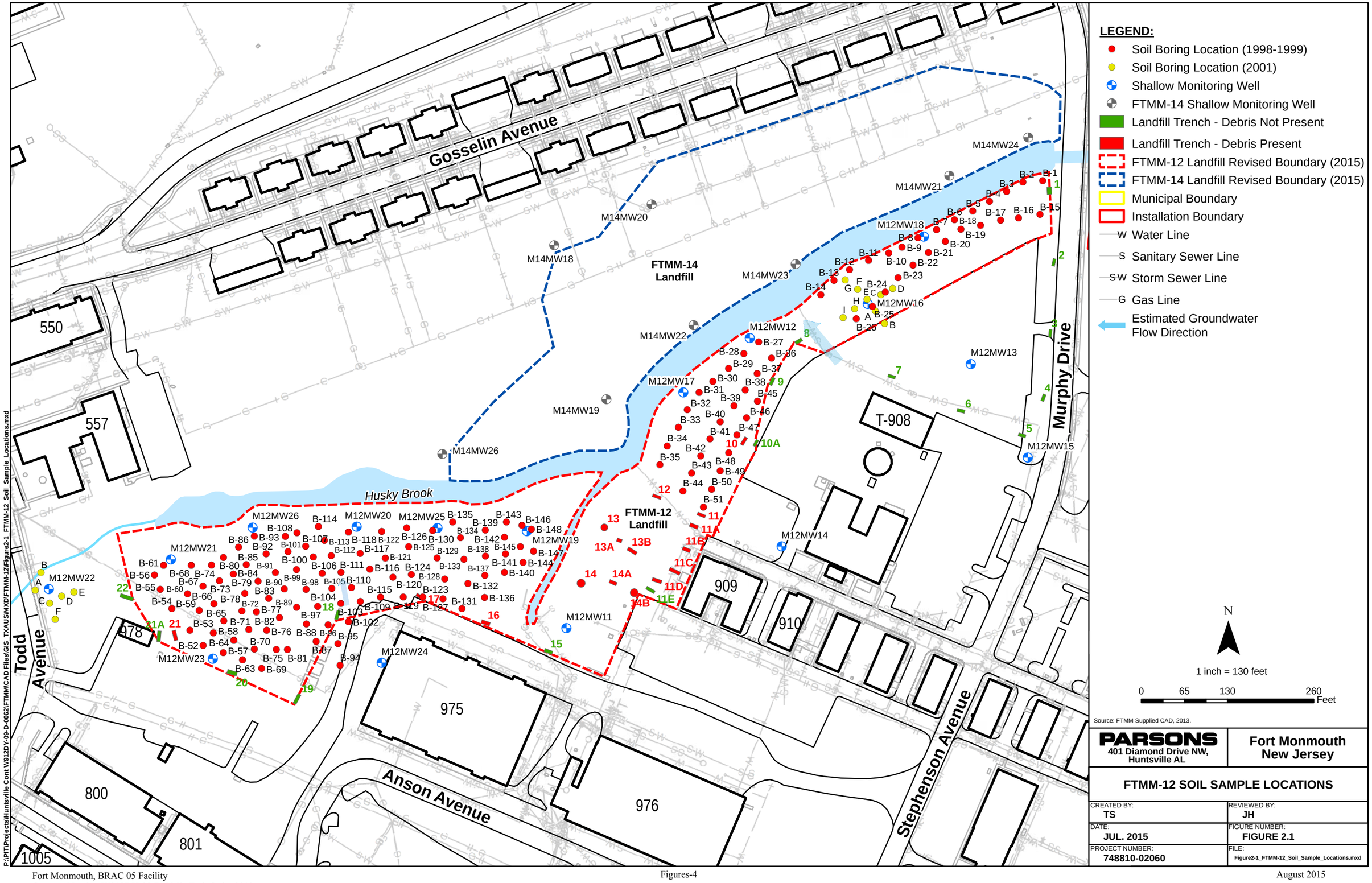
Source: FTMM Supplied CAD, 2013.

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

LAYOUT OF FTMM-12

CREATED BY: TS	REVIEWED BY: JH
DATE: JUL. 2015	FIGURE NUMBER: FIGURE 1.3
PROJECT NUMBER: 748810-02060	FILE: Figure1-3_FTMM-12_Layout.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS_TXAUS\MXD\FTMM-12\Figure1-3_FTMM-12_Layout.mxd



LEGEND:

- Soil Boring Location (1998-1999)
- Soil Boring Location (2001)
- Shallow Monitoring Well
- FTMM-14 Shallow Monitoring Well
- Landfill Trench - Debris Not Present
- Landfill Trench - Debris Present
- FTMM-12 Landfill Revised Boundary (2015)
- FTMM-14 Landfill Revised Boundary (2015)
- Municipal Boundary
- Installation Boundary
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Estimated Groundwater Flow Direction

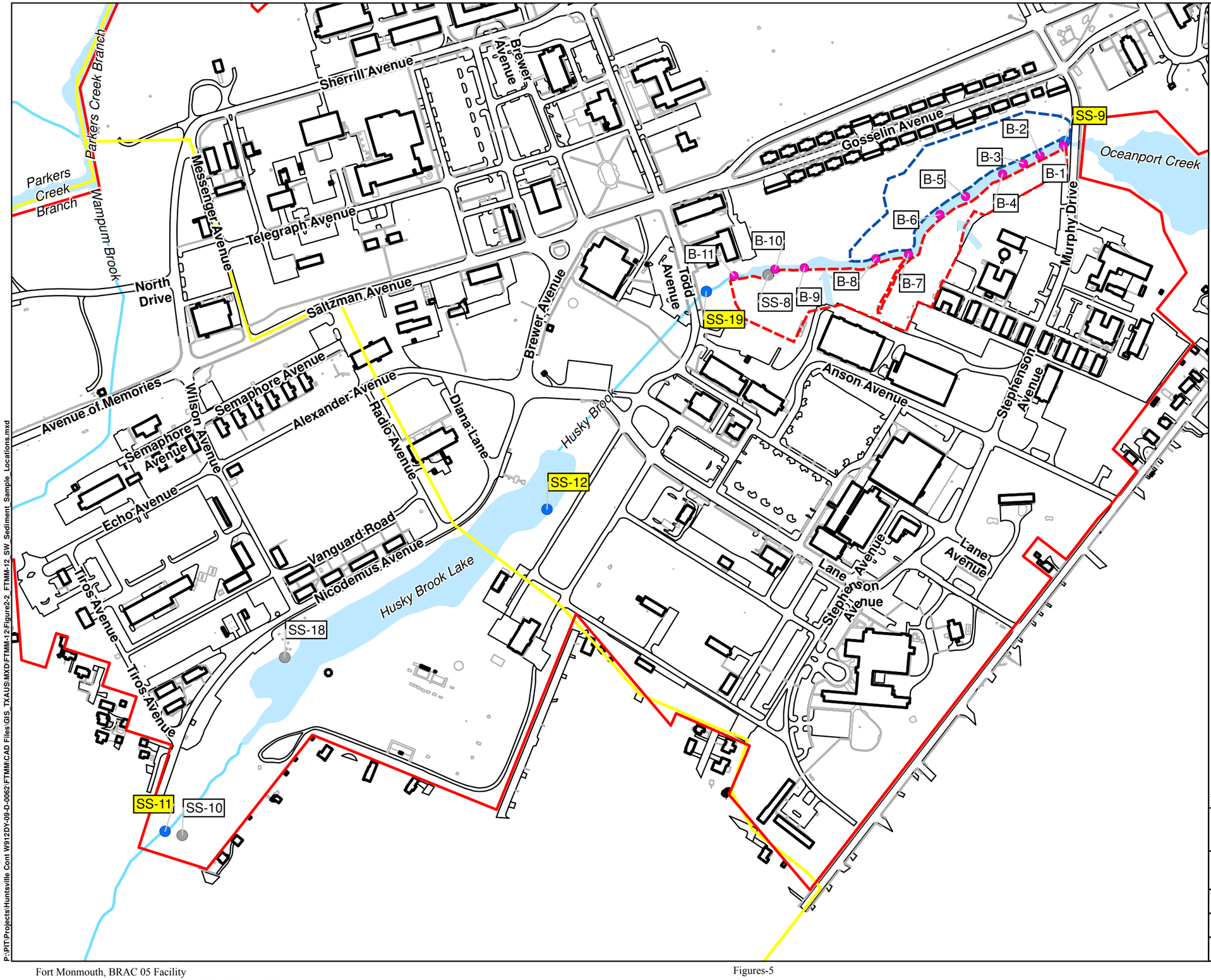
Source: FTMM Supplied CAD, 2013.

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

FTMM-12 SOIL SAMPLE LOCATIONS

CREATED BY: TS	REVIEWED BY: JH
DATE: JUL. 2015	FIGURE NUMBER: FIGURE 2.1
PROJECT NUMBER: 748810-02060	FILE: Figure2-1_FTMM-12_Soil_Sample_Locations.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS_TXAUS\MXD\FTMM-12\Figure2-1_FTMM-12_Soil_Sample_Locations.mxd



LEGEND:

- Sediment Sample Location
- Active Surface Water Sampling Location
- Discontinued Surface Water Sample Location
- FTMM-12 Landfill Revised Boundary (2015)
- FTMM-14 Landfill Revised Boundary (2015)
- Installation Boundary
- Municipal Boundary
- Estimated Groundwater Flow Direction
- SS-5 Surface Water Sample Location Associated with FTMM-12
- B-1 Sediment Sample Location Associated with FTMM-12

N

1 inch = 400 feet

0 100 200 400 600 800 Feet

Source: FTMM Supplied CAD, 2013.

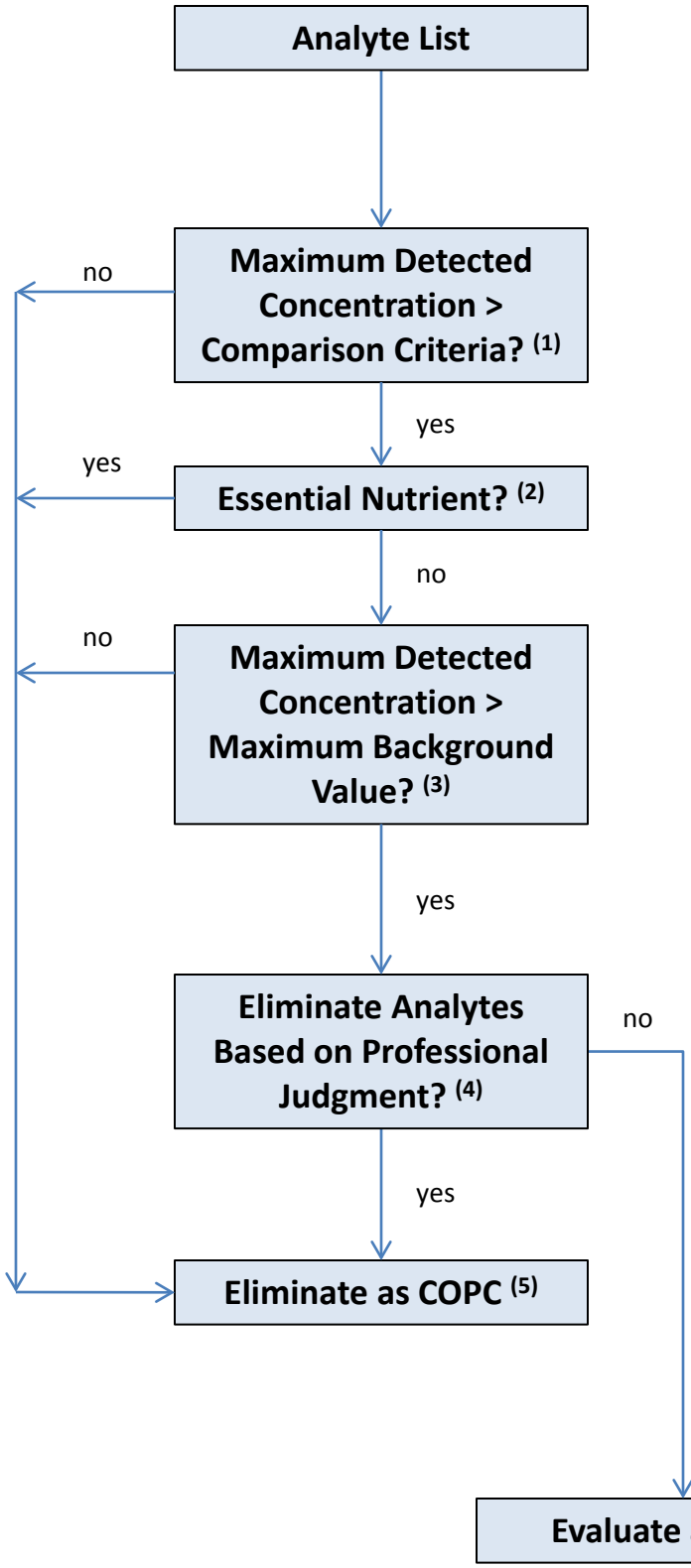
PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey

FTMM-12 SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

CREATED BY: RR	REVIEWED BY: RF
DATE: JUL, 2015	FIGURE NUMBER: FIGURE 2.2
PROJECT NUMBER: 748810-02060	FILE: Figure2-2_FTMM-12_SW_Sediment_Sample_Locations.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS_TXAUS\MXD\FTMM-12\Figure2-2_FTMM-12_SW_Sediment_Sample_Locations.mxd

FIGURE 4.1
Summary of Method to Determine COPCs



(1) Preliminary Comparison Criteria are:

a. Soil: USEPA Residential Regional Screening Levels (RSLs) (Target Risk [TR] = 1 X 10^{-6} and Target Hazard Quotient [THQ] = 0.1)

b. Groundwater: USEPA Tapwater RSLs (TR = 1 X 10^{-6} and THQ = 0.1)

c. Surface Water: A hierarchy of USEPA human health criteria was used in the priority shown below.

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

d. Sediment: USEPA Residential RSLs for Soil (TR = 1 X 10^{-6} and THQ = 0.1)

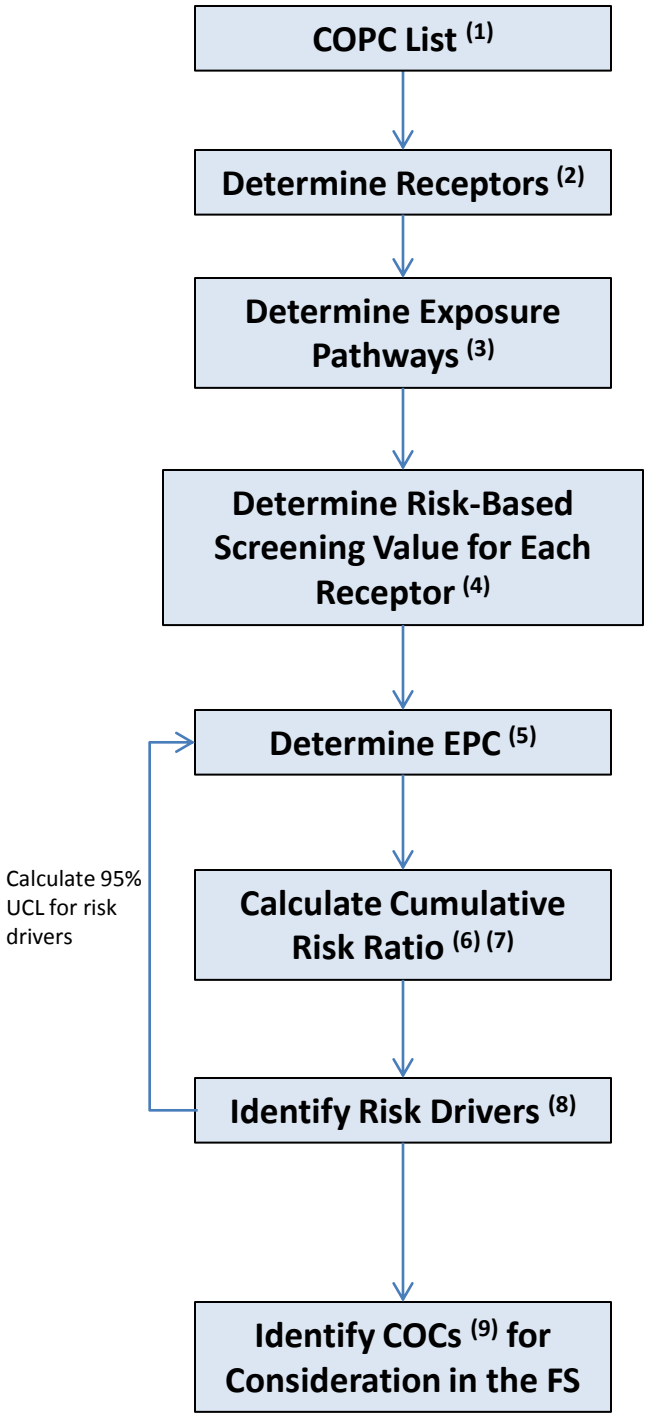
(2) Essential nutrients : calcium, iron, magnesium, sodium, and potassium

(3) Maximum background concentrations for metals were used because background data set was small (10 data points) and did not follow a parametric distribution. Weston (1995) concluded that the maximum background was approximately equivalent to a 95% Upper Tolerance Limit (UTL) for metals.

(4) Assessment (primarily for groundwater and surface water) as to whether exceedances of comparison criteria are representative of site-related contamination or are due to turbidity, upstream/upgradient sources, laboratory contamination, natural background conditions, etc.

(5) Constituent of potential concern

Figure 6.1
Evaluation of Risk to Human Receptors



(1) COPCs determined from comparison to screening criteria (see previous flow chart)

(2) Receptors include current and future outdoor workers, utility workers, and future recreational users

(3) Soil: incidental ingestion, dermal contact and inhalation of particulates and volatiles
Groundwater: ingestion as drinking water and dermal contact
Surface water/sediment: incidental ingestion and dermal contact

(4) The screening values used in the risk ratio will be:
- Soil: USEPA Industrial worker regional screening level (RSL) (Target Risk (TR) = 1 X 10^{-6} and Target Hazard Quotient (THQ) = 1.0); site-specific recreational user screening level calculated for each analyte
- Groundwater: USEPA tap water RSL (TR = 1 X 10^{-6} and THQ=1.0) (which includes outdoor workers and recreational users)
- Surface water: USEPA National Recommended Water Quality Criteria, Human Health Criteria, Organism Only
- Sediment: USEPA Industrial worker RSL (TR = 1 X 10^{-6} and THQ=1.0)

(5) Exposure Point Concentration, initially the maximum detected concentration

(6) Risk ratio calculated for carcinogens as:
Cumulative risk = Σ(Target Risk) x (EPC/Screening level)
For non-carcinogens as:
HI = Σ(Target Hazard Index) x (EPC/Screening level)

(7) Lead is evaluated based on the potential for exposure to increase blood lead levels. Therefore, lead is not included in the cumulative non-carcinogenic and carcinogenic risk estimates. The risk ratio for lead is calculated as: lead risk = (EPC/Screening level)

(8) Risk drivers are the individual analytes that contribute more than 25% to the cumulative risk ratio. For risk drivers a 95% Upper Confidence Limit (UCL) will be calculated.

(9) Constituent of Concern

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-12
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Soil	• Incidental ingestion of soil • Inhalation of volatiles and particulates from soil • Dermal contact with soil	• Current outdoor worker • Future outdoor worker • Future indoor worker • Future recreational user • Future utility worker	• FTMM-12 contains domestic and industrial wastes and may have been used for automotive, oil, and building rubble disposal. FTMM-12 has reportedly been inactive since 1966, and there has been steady growth and stabilization of vegetation (grass, trees, and bushes) at the site. It is currently vacant and unused. There are no new development activities occurring. The Fort Monmouth Economic Redevelopment Planning Authority Reuse Plan calls for the Fort Monmouth landfills to be designated as passive open space. • There are potentially complete exposure pathways associated with the current outdoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. An exposure frequency of 225 days per year and an exposure duration of 25 years are assumed for this scenario. Thus, it is a very conservative evaluation for a potential current outdoor worker who would have much less exposure (*e.g.*, current worker that visits the site to perform mowing and landscaping activities). • There are potentially complete exposure pathways associated with the future outdoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. This pathway is not included in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (based on the exposure frequency and exposure duration). • There are potentially complete exposure pathways associated with the future indoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact if commercial buildings

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-12
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
			were constructed on the site. This pathway is not quantitatively evaluated in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (future indoor workers would have much less exposure to soil). • Future recreational users have a complete exposure pathway to soil via incidental ingestion, inhalation of volatiles and particulates, and dermal contact, in part as an adolescent (aged 6-16) and in part as an adult (aged 16-30 for noncarcinogens). An exposure frequency of 50 days per year and an exposure duration of 24 years are assumed for this scenario. This potentially exposed population also includes persons who may be trespassing at the site, as they are expected to be on-site no more frequently than recreational users. • Future utility workers have a complete exposure pathway to soil via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. An exposure frequency of 30 days per year for a one year project duration are assumed for this scenario. • The site is not residential and is not planned for residential use. Therefore, residential exposure pathways are incomplete.

Figure 6.2
Human Health Conceptual Site Model (continued)
Site FTMM-12
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Surface Water/ Sediment	• Ingestion of aquatic organisms (e.g., fish and shellfish) • Incidental ingestion of surface water/sediment • Inhalation of volatiles from surface water/sediment • Dermal contact with surface water/sediment	• Current outdoor worker • Future outdoor worker • Future recreational user • Future utility worker	• FTMM-12 is located adjacent to Husky Brook and is bisected by a drainage ditch to Husky Brook. No COPCs were identified in surface water or sediment and surface water is not used as a potable water source. Therefore, the surface water and sediment exposure pathways are incomplete.

Figure 6.2
Human Health Conceptual Site Model (continued)
Site FTMM-12
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Groundwater	• Incidental Ingestion of groundwater • Inhalation of volatiles in groundwater • Dermal contact with groundwater	• Future utility worker	• The groundwater onsite is not used as a potable water source. The site is not residential and is not planned for residential use. • No COPCs were identified in groundwater. Therefore, the current and future groundwater exposure pathways are incomplete.

APPENDICES

Appendix A Key Historical Reports and Background Information (included electronically on CD)

Appendix B Utility Worker and Recreational User Screening Level Equations and Calculations; Pro UCL Output

Appendix C Cost Estimate

APPENDIX A
KEY HISTORICAL REPORTS AND BACKGROUND INFORMATION

(Appendix A is provided electronically on the enclosed CD)

APPENDIX A
KEY HISTORICAL REPORTS AND BACKGROUND INFORMATION

(Appendix A is provided electronically on the enclosed CD)

Description of Geologic Units Shown on Cross-Section A-A'

Tvt VINCENTOWN FORMATION—Glauconitic (5-20%) silty medium-to-coarse quartz sand, some fine-to-medium sand, some very coarse sand to very fine pebbles; yellow, reddish-yellow, olive-yellow, olive-brown; unstratified to weakly horizontally stratified. Coarse sands are locally iron-cemented into beds and masses as much as 10 feet thick. Lowermost 10-20 feet of the formation is silty fine-to-medium sand, with more glauconite than upsection. Total thickness of formation is 180 feet. Late Paleocene in age, based on foraminifera (Olsson and Wise, 1987; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991). Unconformably overlies the Hornerstown Formation.

Tht HORNERSTOWN FORMATION—Glauconite (>50%) clay and silty clay; olive, dark green, black where unweathered, olive-brown with brown to reddish-brown mottles where weathered; unstratified. Glauconite occurs primarily in soft grains of fine-to-medium sand size. Thickness is 25 to 30 feet. Early Paleocene in age, based on foraminifera (Olsson and others, 1997; Landman and others, 2004; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991; Miller and others, 2006). Unconformably overlies the Tinton Formation.

Kt TINTON FORMATION—Glauconitic (5-30%) silty medium-to-coarse and fine-to-medium quartz sand; reddish-brown, reddish-yellow, yellowish-brown where weathered, grayish-brown, brown, olive-brown where unweathered; unstratified to weakly horizontally stratified. Commonly iron-cemented into beds and masses as much as 15 feet thick. Uppermost 4-6 feet, just below contact with Hornerstown Formation, is a brown to olive-gray glauconitic clayey-silty fine sand to fine-sandy silt-clay ("New Egypt Formation" of Landman and others, 2004). Total thickness of Tinton is 30 to 40 feet. Late Cretaceous (late Maestrichtian) in age based on foraminifera, nannofossils, and ammonites (Landman and others, 2004) and strontium-isotope ratios (Sugarman and others, 1995). Overlies the Shrewsbury Member of the Red Bank Formation. Contact with Shrewsbury is not exposed in the Long Branch quadrangle. It is gradational over several feet in the Sandy Hook quadrangle, north of the Long Branch quadrangle (Minard, 1969), but may be unconformable in the Marlboro quadrangle, west of the Long Branch quadrangle (Sugarman and Owens, 1996).

Krs RED BANK FORMATION, SHREWSBURY MEMBER—Fine-to-medium quartz sand, minor medium-to-coarse sand, slightly silty, glauconitic (<5%), and micaceous; reddish-yellow, yellow where weathered, light gray and gray where unweathered; unstratified to weakly horizontally bedded; locally iron-cemented. As much as 100 feet thick. Late Cretaceous (late Maestrichtian) in age based on fossils in the underlying Sandy Hook Member; the Shrewsbury Member is unfossiliferous. Grades downward within 2-3 feet to the Red Bank Formation, Sandy Hook Member. On geophysical well logs, transition to Sandy Hook Member is marked by increased gamma-ray intensity and decreased resistance.

Krsh RED BANK FORMATION, SANDY HOOK MEMBER—Fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); brown to yellowish-brown where weathered, dark gray, olive-gray where unweathered; unstratified. Calcareous brachiopod, pelecypod, and gastropod fossils are common. As much as 20 feet thick. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils (Sugarman and Owens, 1996), foraminifera (Olsson, 1964; Olsson and Wise, 1987; Owens and others, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Grades downward within 2-3 feet into the Navesink Formation. On geophysical well logs, transition to Navesink is marked by increased gamma-ray intensity and slightly decreased resistance.

Kns NAVESINK FORMATION—Glauconitic (20-50%) clayey-silty fine-to-medium quartz sand to fine-sandy clayey silt; dark gray, gray, grayish-brown, olive-gray where unweathered, brown to yellowish-brown where weathered; unstratified. Glauconite occurs chiefly in soft grains of fine-to-medium sand size. Calcareous brachiopod, pelecypod, and gastropod fossils are common. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils and foraminifera (Olsson, 1964; Miller and others, 2006), macrofossils (Sohl, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Mount Laurel Formation. Contact with Mount Laurel is commonly marked by a sharp peak in gamma-ray intensity on geophysical well logs, with reduced intensity in the Mount Laurel.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kml MOUNT LAUREL FORMATION—Glauconitic (3-15%) fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; yellowish-brown where weathered, olive-gray to olive-brown where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. As much as 50 feet thick in the southern part of the quadrangle; thins to 20 feet to the north. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age, based on calcareous nannofossils and strontium-isotope ratios (Sugarman and others, 1991; Miller and others, 2006). Grades downward into the Wenonah Formation. On geophysical well logs, transition to Wenonah is generally marked by slightly decreased resistance and increased gamma-ray intensity.

Kw WENONAH FORMATION—Silty fine-to-very-fine quartz sand to fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); yellow, very pale brown where weathered, gray to pale-olive where unweathered; unstratified. As much as 40 feet thick. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age based on pollen (Wolfe, 1976) and ammonites (Kennedy and Cobban, 1994). Grades downward into the Marshalltown Formation. On geophysical well logs, transition to Marshalltown is marked by increased gamma-ray intensity.

Kmt MARSHALLTOWN FORMATION—Glauconitic (20-50%), slightly micaceous, silty-clayey fine-to-medium quartz sand, to fine-sandy clayey silt; olive-gray to olive-brown; unstratified. Thickness is 15 to 20 feet. In subsurface only. Late Cretaceous (middle Campanian) in age based on calcareous nannofossils, foraminifera, mollusks, and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Englishtown Formation. On geophysical well logs, contact with Englishtown is marked by decreased gamma-ray intensity and slightly increased resistance.

Ket ENGLISHTOWN FORMATION—Fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; micaceous and lignitic, with a trace (<1%) of glauconite; white and light gray where weathered, dark gray where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. In subsurface only. As much as 140 feet thick in the eastern part of the quadrangle, thins to 110 feet thick in the west. In the Asbury Park quadrangle to the south of the Long Branch quadrangle, and farther southwest in northern Ocean County, the Englishtown is divided into an upper and lower member based on the presence of a clay-silt facies in the middle of the formation that is distinctive on gamma-ray logs (Nichols, 1977; Sugarman and Owens, 1994; Miller and others, 2006). This facies is not well marked on gamma-ray logs in the Long Branch quadrangle (wells 29-9335, 29-7941, 29-9465, 29-6173, 29-23948, and 29-48307) and so the members are not mapped here. Late Cretaceous (middle to late Campanian) in age, based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), calcareous nannofossils, and strontium-isotope ratios (Miller and others, 2006). Grades downward into the Woodbury Formation. On geophysical well logs, transition to Woodbury is marked by increased gamma-ray intensity and decreased resistance.

Kwb WOODBURY FORMATION—Clay, silty clay, with minor thin beds of very fine quartz sand, slightly micaceous and lignitic; dark gray and black where unweathered, yellowish-brown to brown where weathered; unstratified. In subsurface only. As much as 240 feet thick in the eastern part of the quadrangle, thins to 160 feet thick in the central and western parts of the quadrangle. Late Cretaceous (early to middle Campanian) based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), and calcareous nannofossils (Miller and others, 2006). Grades downward into the Merchantville Formation. On geophysical well logs, transition to the Merchantville is marked by slightly increased gamma-ray intensity.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kmv MERCHANTVILLE FORMATION—Glauconitic (20-50%) clayey silt to sandy clayey silt, slightly micaceous; olive, dark gray, black where unweathered, olive-brown to yellowish-brown where weathered; unstratified. Thickness is 40 to 60 feet. In subsurface only. Late Cretaceous (early Campanian to Santonian) in age based on ammonites (Owens and others, 1977) and calcareous nannofossils (Miller and others, 2006). The Cheesequake Formation, a glauconitic clayey silt underlying the Merchantville, is mapped in outcrop in northern Monmouth and eastern Middlesex counties (Sugarman and Owens, 1996; Sugarman and others, 2005; Stanford and Sugarman, 2008) and in the subsurface both west and south of the Long Branch quadrangle (Sugarman and Owens, 1994, 1996). Because it is lithically similar to the Merchantville and cannot be easily distinguished from it on geophysical logs, it is not mapped separately here. If present, it is included here within the Merchantville, or uppermost Magothy Formation.

Kmg MAGOTHY FORMATION—Fine-to-medium quartz sand, some very-fine-to-fine sand and minor medium-to-coarse sand, micaceous, lignitic, and pyrite-bearing in places, with thin interbeds of silt and clay; white to yellow where weathered, light gray to gray where unweathered. Sand is cross-bedded to laminated. As much as 220 feet thick. In subsurface only. Late Cretaceous (Turonian-Santonian) in age, based on pollen (Christopher, 1979, 1982; Miller and others, 2006). Unconformably overlies the Raritan Formation, Woodbridge Clay member. On geophysical well logs, contact with the Woodbridge is marked by increased gamma-ray intensity.

In its outcrop area in eastern Middlesex County the Magothy is divided into 5 members. From bottom to top they include: South Amboy Fire Clay, Old Bridge Sand, Amboy Stoneware Clay, Morgan beds, and Cliffwood beds (Sugarman and others, 2005). The Old Bridge is a thick sand, the other members are interbedded clay-silt and fine sand. These members may extend downdip in the subsurface (Miller and others, 2006). Geophysical well logs in the Long Branch quadrangle (wells 29-21612, 29-23948, 29-21510, 29-9335, 29-7941, 29-9465, and 29-6173) show generally higher gamma-ray intensity and lower resistivity in the uppermost 50 feet of the formation, and again in the lowermost 30-40 feet, than in the middle 100-120 feet. The upper fine-grained beds may correspond to the Amboy Stoneware Clay and Morgan and Cliffwood beds, and the lower fine-grained beds may correspond to the South Amboy Fire Clay. The middle sand may correspond to the Old Bridge Sand.

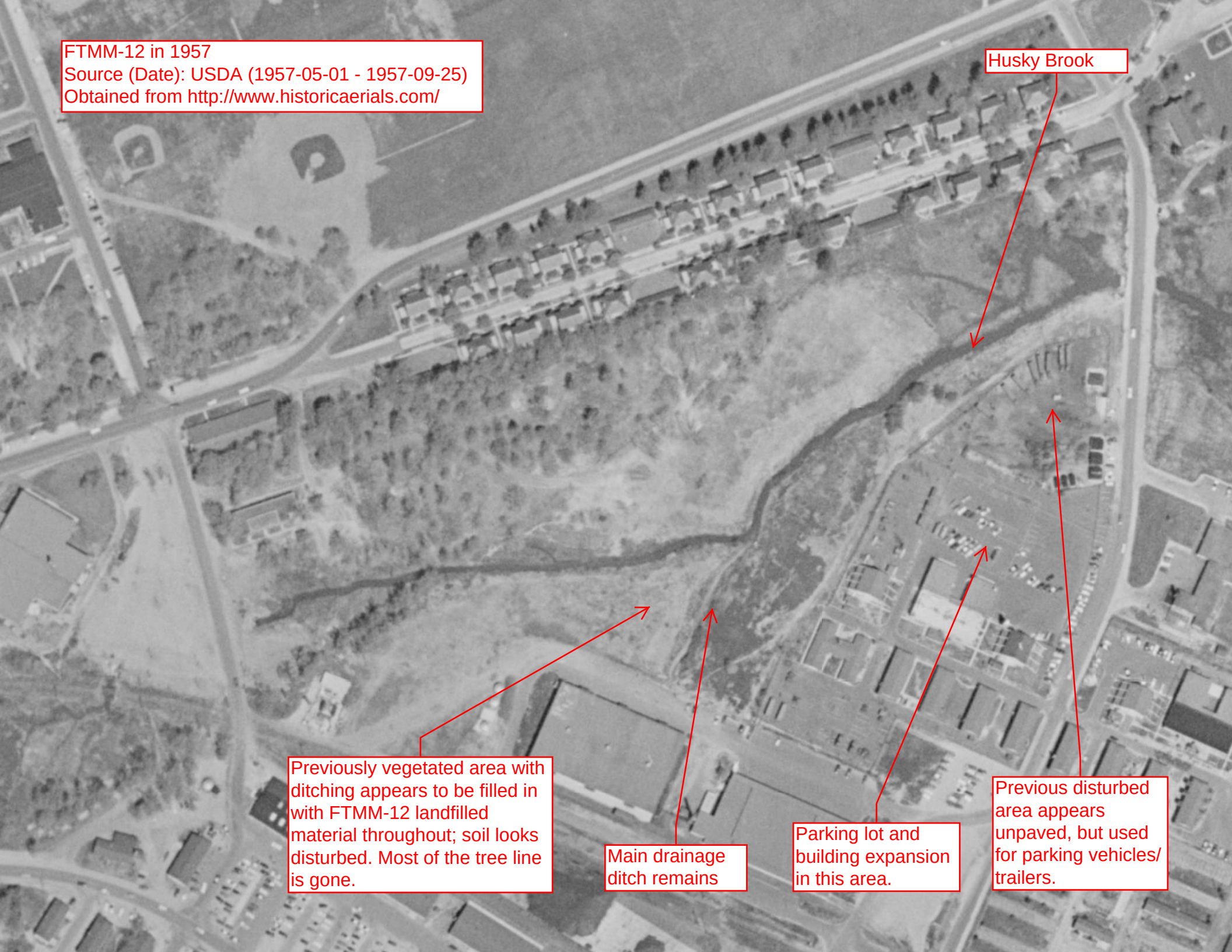
Krw RARITAN FORMATION, WOODBRIDGE CLAY MEMBER—Clay and silt, micaceous, lignitic, and pyrite-bearing; gray and black where unweathered, white to brown where weathered; with minor thin interbeds and laminas of white, yellow, and light gray very-fine-to-fine quartz sand. As much as 110 feet thick. In subsurface only, penetrated by wells 29-9465 and 29-1921. The driller's log for well 29-2366 in Eatontown reports "weathered bedrock", with no further information, beneath the Magothy Formation, at a depth of 875-891 feet. This depth is anomalously shallow for the basement surface, suggesting that the material may be weathered clay of either the Woodbridge or South Amboy Fire Clay member of the Magothy. The Woodbridge is Late Cretaceous (late Cenomanian) in age based on pollen (Christopher, 1979) and ammonites (Cobban and Kennedy, 1990). Grades downward into the Raritan Formation, Farrington Sand member. Transition to the Farrington is marked by decreased gamma-ray intensity on geophysical well logs.

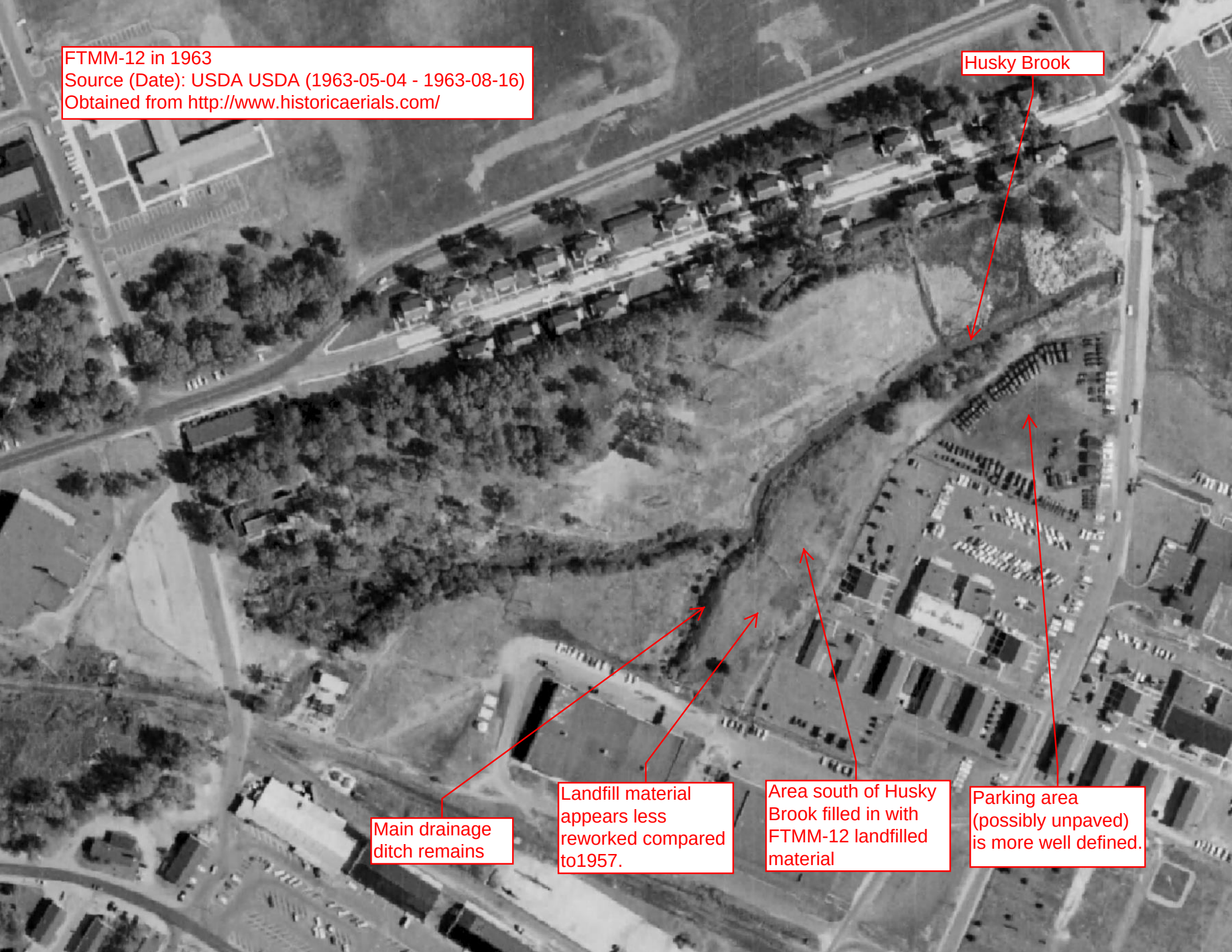
Krf RARITAN FORMATION, FARRINGTON SAND MEMBER—Fine-to-coarse quartz sand, some coarse-to-very-coarse sand, minor beds of clay and silt; white and yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded. As much as 60 feet thick. In subsurface only, penetrated in well 29-9465. Late Cretaceous (Cenomanian) in age based on pollen (Christopher, 1979). Unconformably overlies the Potomac Formation. Contact with Potomac is marked by increased gamma-ray intensity on geophysical well logs.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kp POTOMAC FORMATION—Fine-to-medium quartz sand, some coarse-to-very-coarse sand, with beds of clay and silt; white, red, yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded, clays are in beds as much as 8 feet thick. More than 90 feet thick, full thickness not penetrated in the Long Branch quadrangle. In subsurface only, partially penetrated in well 29-9465. Late Cretaceous (Albian-Cenomanian) based on pollen (Sugarman and Owens, 1996; Miller and others, 2006), which indicates that the Potomac in this area corresponds to the Potomac Formation, unit 3, of Doyle and Robbins (1977).


FTMM-12 in 1947
Source (Date): USDA (1947-07-03 - 1947-10-20)
Obtained from http://www.historicaerials.com/
Bend in Husky Brook
In the 1957 aerial photograph, these buildings were replaced.
Vegetated area with ditching for drainage southeast of Husky Brook. No landfill on FTMM-12.
Drainage ditch
Land appears disturbed.


FTMM-12 in 1957
Source (Date): USDA (1957-05-01 - 1957-09-25)
Obtained from http://www.historicaerials.com/
Husky Brook
Previously vegetated area with ditching appears to be filled in with FTMM-12 landfilled material throughout; soil looks disturbed. Most of the tree line is gone.
Main drainage ditch remains
Parking lot and building expansion in this area.
Previous disturbed area appears unpaved, but used for parking vehicles/ trailers.


FTMM-12 in 1963
Source (Date): USDA USDA (1963-05-04 - 1963-08-16)
Obtained from http://www.historicaerials.com/
Husky Brook
Main drainage ditch remains
Landfill material appears less reworked compared to1957.
Area south of Husky Brook filled in with FTMM-12 landfilled material
Parking area (possibly unpaved) is more well defined.


FTMM-12 in 1969
Source (Date): USGS (1969-11-26 - 1969-12-13)
Obtained from http://www.historicaerials.com/
Husky Brook
Main drainage ditch remains
Area south of Husky Brook filled in with FTMM-12 landfilled material
Parking area remains well defined


FTMM-12 in 1970
Source (Date): USDA
Obtained from http://www.historicaerials.com/
Husky Brook
Main drainage ditch remains; more vegetation lines the ditch.
no disturbances in landfill area; low vegetation and trees appear to be taking over previously disturbed areas.
Parking area remains well defined

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Directorate of Public Works

March 9, 2011

Larry Quinn, Site Manager
New Jersey Department of Environmental Protection
Bureau of Investigation, Design and Construction
401 East State Street, P.O Box 413
Trenton, New Jersey 08625-0413

Subject: Base-Wide Glauconitic Soil Sampling Report
Fort Monmouth – Main Post Area
Fort Monmouth, New Jersey 07703

Dear Mr. Quinn:

On October 13, 2010, the U.S. Army Fort Monmouth, Directorate of Public Works (DPW) submitted a *Base-Wide Glauconitic Soil Sampling Plan* to determine if selected Target Analyte List (TAL) metals detected in groundwater at concentrations exceeding the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS) are naturally occurring in soils containing high amounts of glauconite. On October 29, 2010, the NJDEP provided written approval of the *Base-Wide Glauconitic Soil Sampling Plan* **(Attachment 1).**

Background

TAL metals which have been detected in samples collected from onsite groundwater monitoring wells at concentrations exceeding the GWQS include, but are not limited to: arsenic, antimony, beryllium, cadmium, lead, and zinc. There is no documented or confirmed source identified for the detections of these metals in groundwater. Several sites at Fort Monmouth are solid waste landfills containing various materials but most sites are associated with petroleum hydrocarbons resulting from leaking underground storage tanks (USTs).

Dooley (2001) analyzed the composition of naturally-occurring glauconitic soils at seven locations within the New Jersey Coastal Plain physiographic province. This study revealed that glauconitic soils contained arsenic at concentrations ranging from 7 to 31 milligrams per kilogram (mg/kg). There is evidence for a relationship between the type of geologic unit and concentrations of arsenic in the soil found in the New Jersey Coastal Plain (Rutgers, 2002). The geologic creation of arsenic-bearing glauconite is the result of depositions of algae that take up, metabolize, and retain arsenic in surface waters. When the algae dies and settles to the bottom, the arsenic in the dead algae becomes part of the deposit. When this process occurs over thousands of years, arsenic accumulates in estuaries, which are now geologically mapped as glauconite or "greensands". Glauconite is a dull-green, iron-silicate mica mineral found in shallow marine sediments.

Layers of glauconite have been identified in the New Jersey Coastal Plain, southern New Castle County, Delaware, and in the deeper units in southern Delaware. The soils that form over these glauconite-containing units, called greensands, are highly productive agriculturally and have

been determined to contain naturally-occurring arsenic and beryllium as reported by Dooley (2001).

The United States Geological Survey (USGS) reported arsenic concentrations ranging from 4.8 to 23 mg/kg in sediments collected from the Lower Susquehanna River. Similar concentrations of arsenic were found in another USGS study in which the average arsenic soil concentrations were reported as 8.3 mg/kg for New Castle County, Delaware, 4.6 mg/kg for Kent County, Delaware, and 4.9 mg/kg for Sussex County, New Jersey (USGS, 1984).

These studies indicate that the presence of arsenic and other TAL metals (e.g., beryllium, lead) detected in soil and sediment samples are attributed to natural (lithogenic) sources rather than from anthropogenic activities. In an effort to confirm and document that select TAL metals detected in groundwater on the Main Post are naturally associated with glauconitic soils, the DPW conducted a soil sampling investigation. This investigative study was necessary because the DPW believes the presence of naturally-occurring TAL metals in onsite glauconitic soils are adversely affecting groundwater quality conditions as defined by the NJDEP GWQS.

The DPW conducted an exhaustive review of all logs for monitoring wells installed at the Main Post to identify locations where the word 'glauconitic' or variations thereof (e.g. glauconite, green sands) were recorded. Glauconitic sands, silts, and/or clays were positively identified at sites 108, 296, and the M-2 Landfill. A brief summary of each site as described in the U.S. Army's *Environmental Condition of Property Report* (2007) is provided as follows:

- **Site 108** is near Riverside Avenue in the eastern section of the Main Post. The DPW removed five USTs in this area in November 1993. The site was reported to the NJDEP as a discharge to the environment and Incident No. 93-04-12-1939-29 was assigned.

- **Site 296** a former fuel distribution facility on Sherrill Avenue which was abandoned and then rediscovered during a renovation project at Building 296. The facility dates back to the 1940s. The UST system was comprised of ten 1,000-gallon USTs which stored various types of fuel products. These products were distributed from remote pumping islands located >450 feet from the UST field and within 50 feet of Parkers Creek.

- **M-2 Landfill**. The 6.5-acre landfill operated from 1964 until 1968. Materials disposed at the landfill reportedly included: construction debris, scrap metal, asbestos containing materials, vegetative waste, unwashed containers which previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

At each of the above locations, arsenic and lead were detected in groundwater at concentrations exceeding the GWQS of 3 and 5 micrograms per liter (µg/L), respectively. It is important to note that glauconitic-rich soils are more prevalent on the Main Post than the well logs would indicate because the well logs were not properly completed by trained personnel, e.g., soil scientist, geologist, etc. The majority of the well logs were prepared by the well drillers who have little to no training properly classifying soils using an accepted classification scheme (i.e. Unified Soil Classification System, Burmister, etc.).

According to Jablonski (1968), the Cretaceous-age Red Bank and Tinton Sands outcrop at the Main Post. The Red Bank sand conformably overlies the Navesink Formation. The upper member of the Red Bank Sand (Shrewsbury) is a yellowish-gray to reddish-brown, clayey, medium to coarse-grained sand that contains abundant rock fragments, muscovite, and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium to fine-grained sand with abundant clay, muscovite and glauconite.

The Tinton Sand conformably overlies the Red Bank sand and ranges from a clayey medium to very coarse-grained feldspathic quartz and glauconitic coarse sand. The color varies from a yellowish-orange or light brown to light olive to grayish-olive. Glauconite may comprise 60 to 80% of the sand fraction in the upper portion of the Tinton Sand (Minard, 1969).

Soil and Groundwater Investigation

The soil investigation included the collection of soil samples at locations depicted on **Figure 1**. Each soil boring was advanced proximate, but not less than five feet, to the selected groundwater monitoring well where glauconite was observed during well installation activities. Geologic logs, including construction details, for the selected groundwater monitoring wells (108MW04, 296MW04, M2MW13, M2MW18, and M2MW24) are provided in **Attachment 2**.

At each soil boring, a direct-push rig (Geoprobe®) was used to advance a borehole to the depth of the proximate groundwater monitoring well. Continuous soil cores were collected by advancing dedicated acetate sleeves from the ground surface to the depth of the proximate groundwater monitoring well. Discrete soil samples from the saturated zone (water table to the bottom of the well screen as determined from the proximate monitoring well) were collected for laboratory analysis. Additional discrete soil samples were collected from the saturated zone for laboratory analysis based on lithology differing from that containing greenish glauconitic sands and silts. Prior to sample collection, any twigs, roots, and miscellaneous debris (e.g. glass, bricks, etc.) were removed from the soil sample using a decontaminated stainless steel spoon. Soil boring logs and maps showing locations of the soil borings are provided in **Attachment 3**.

All method(s)/procedure(s) for collecting grab soil samples were consistent with the methodology for obtaining Non-Volatile Organic Compound Sample Collection for Soils as per NJDEP's August 2005 *Field Sampling Procedures Manual* (Section 6.2.8). Decontamination of field sampling equipment was conducted in accordance with the DPW's *Standard Operating Procedures* (SOP) and NJDEP's August 2005 *Field Sampling Procedures Manual* (FSPM).

Subsequent to the collection of soil samples, groundwater samples were collected from the proximate monitoring well via the low-flow purging and sampling method. Applicable protocols regarding sampling, handling, storage, preservation, reporting, decontamination of field equipment, and other procedures adhered to the DPW's latest SOP for low-flow groundwater sampling (**Attachment 4**), which complies with the NJDEP FSPM.

All soil and groundwater samples were analyzed at DPW's NJDEP certified laboratory (NJDEP Certification Number 13461) for Target Analyte List (TAL) metals and Accutest Laboratories (NJDEP Certification Number 12129) for Organic Carbon (OC) using United States Environmental Protection Agency approved test methods. Soil samples were analyzed for OC not as part of the glauconitic study. Rather the OC data was used to support the fate and transport modeling effort being conducted by Brinkerhoff Environmental Services, Inc. on the Main Post.

Summary of Soil Results

A total of six soil samples were collected at three locations, namely at locations proximate to groundwater monitoring wells M2MW13, 108MW04, and 296MW06 (**Table 1**). Soil samples were not collected as proposed at M2MW18 and M2MW24 due to refusal at each location.

A review of analytical results indicates that the following metals were detected in the soil samples: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), calcium, chromium (Cr), cobalt, copper, iron, lead, magnesium, manganese (Mn), mercury, nickel (Ni), potassium, silver (Ag), vanadium (V), and zinc (Zn). Selenium, sodium, and thallium were not detected in all soil samples.

Arsenic concentrations were detected at all locations and sample depths. Concentrations of arsenic in samples collected from Sites M-2 and 296 were consistent. Concentrations of arsenic at M-2 and 296 in the shallow (non-glauconitic layer) soil samples were 7 and 5 milligrams/kilogram (mg/kg), respectively. Similarly, concentrations of arsenic at M-2 and 296 in the deeper (glauconite-rich layer) soil samples were 7 and 6 mg/kg, respectively. At Site 108, the concentration of arsenic in the soil sample collected 7.0-8.0 feet below ground surface (bgs) was five times greater than the arsenic concentration in the shallower sample (**Table 1**). Concentrations of TAL metals in the shallow soil samples were within an order of magnitude of concentrations of TAL metals detected in the deeper soil samples (**Table 1**). All TAL metal concentrations were compliant with the NJDEP Soil Remediation Standards (SRS) as promulgated by the NJDEP in June 2008 (New Jersey Administrative Code 7:26D). The laboratory analytical reports are included in **Attachment 5**.

Table 1. Concentrations of Selected TAL Metals and OC in Soil

Sample Depth (feet bgs)	Ag	Al	As	Ba	Be	Cd	Cr	Mn	Ni	Pb	Sb	V	Zn	OC
	mg/kg (dry weight)													
Site M-2														
8.0–12.0	6	9550	7	70	2	2	106	27	15	9	2	45	63	87700
16.0–20.0*	14	11500	7	17	2	4	134	13	10	10	1	25	67	762
Site 108														
6.5–7.0	1	2540	3	5	0.3	0.6	18	9	2	16	ND	11	13	558
7.0–8.0*	2	8110	15	16	0.8	2	65	23	4	16	1	36	29	365
Site 296														
3.5–4.0	1	3560	5	4	0.5	1	73	3	2	11	3	65	13	500
12.0–12.5*	2	4860	6	27	0.8	2	69	17	5	12	2	39	27	1010
NJDEP SRS	390	78000	19	16000	16	78	—	11000	1600	400	31	78	23000	—

* – Glauconitic-rich layer; ND: not detected.

Summary of Groundwater Results

Six groundwater samples were collected from three monitoring wells, namely M2MW13, 108MW04, and 296MW06. Aqueous samples were collected at two different depths as noted in **Table 2**.

A comparison of TAL metal concentrations in the shallow and deep sampling depths show variations but are within an order of magnitude. Arsenic concentrations were detected at all three locations and sample depths. Concentrations of arsenic detected in groundwater samples ranged from 2.21 to 8.77 µg/L. The GWQS for arsenic is 3 µg/L. Arsenic concentrations exceeded the GWQS in three of the six groundwater samples. Concentrations of arsenic were nearly consistent

at both sampling depth intervals at M2MW13 (**Table 2**). The concentration of arsenic reported in the water sample collected from 296MW06 at 3.7 feet bgs (4.38 µg/L) was greater than the arsenic concentration detected in the deeper sample (2.69 µg/L at 12.25 feet bgs). Conversely, the arsenic concentration detected at 6.75 feet bgs at 108MW04 (4.94 µg/L) was less than the arsenic concentration detected in the water sample collected from 7.5 feet bgs (8.77 µg/L). The laboratory analytical reports are included in **Attachment 6**.

Table 2. Concentrations of Selected TAL Metals in Groundwater

Sample Intake (feet bgs)	Ag	Al	As	Ba	Be	Cd	Cr	Mn	Ni	Pb	Sb	V	Zn	OC
						µg/L								
Site M-2 – MW13														
10	3.95	ND	2.21	82.8	ND	1.07	0.87	155	3.07	4.84	5.58	1.80	31.2	—
18	4.24	ND	2.57	70.7	ND	1.13	0.62	149	ND	4.09	ND	1.42	15.3	—
Site 108 – MW04														
6.75	ND	1160	**4.94**	28.8	ND	1.09	7.82	14.6	4.04	**8.76**	ND	5.13	49.6	—
7.5	ND	3630	**8.77**	39.4	ND	1.35	23.0	39.5	7.64	**26.0**	5.48	13.0	118	—
Site 296 – MW06														
3.7	9.71	ND	**4.38**	250	ND	2.65	ND	2220	1.43	**7.96**	ND	1.80	ND	—
12.25	7.56	ND	2.69	202	ND	2.12	ND	1940	ND	**7.83**	ND	2.11	ND	—
NJDEP GWQS	40	200	3	6000	1	4	70	50	100	5	6	—	2000	—

ND: not detected. Concentrations in **bold** type exceed the GWQS.

It appears a correlation exists between the concentrations of arsenic and lead in groundwater, i.e., the concentrations of arsenic and lead are directly proportional to each other. To determine if the concentrations of arsenic and lead are related to each other, a geochemical association was conducted. To illustrate this, the concentration of arsenic in each groundwater sample was plotted against the corresponding concentration of lead to generate an "Arsenic-Lead" scatter plot (**Figure 1**).

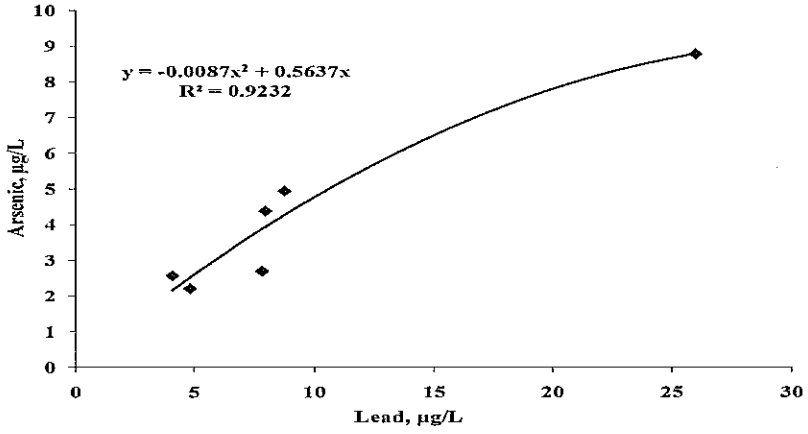


Figure 1. Scatter plot of arsenic and lead concentrations detected in groundwater.
As this figure shows, the concentration of arsenic increases with increases in the lead concentration. A second-order trendline was fitted to the data. The goodness of fit result of R^2 = 0.9232 demonstrates a strong relationship between arsenic and lead given the limited data set.

Thus, it appears that arsenic and lead co-exist as naturally occurring TAL metals, i.e. both metals are non-site related COCs.

Comparison of Arsenic and Lead in Soil and Groundwater

A comparison of TAL metals concentrations in soil and groundwater was completed and no relationship or correlation could be established. In other words, arsenic and lead concentrations in soil are not proportional or inversely proportional to the concentrations of TAL metals identified in groundwater.

Similar to DPW's investigation, Princeton Geoscience, Inc. (PGI) performed a soil and groundwater remedial investigation at a site in the New Jersey Coastal Plain (http://www.princetongeoscience.com/geonew.html). PGI identified natural arsenic concentrations in soil at concentrations up to 100 mg/kg. The elevated metals concentrations in collected groundwater samples resulted mainly from turbidity introduced into the monitoring wells during purging. Low-flow purging and monitoring well redevelopment did not eliminate turbidity in the groundwater samples.

After employing a different approach/technique, PGI compared groundwater concentrations of the trace metals to trace metal concentrations in soil NJDEP acknowledged were of naturally-occurring and identified a correlation for each of the trace metals in question. PGI states that "no remediation has been required to address this issue and Princeton Geoscience has indicated an intention not to include metals as groundwater contaminants in the Classification Exception Area information to be submitted for this site."

Summary

- Arsenic was detected in groundwater at concentrations exceeding the GWQS of 3 µg/L in three of six samples (50%).
- Lead was detected in groundwater at concentrations exceeding the GWQS of 5 µg/L in four of six samples (67%).
- The greatest concentrations of arsenic and lead in groundwater were detected adjacent to the glauconite-rich soil layer at monitoring well 108MW04 (7.5 feet bgs).
- Similarly, the greatest concentrations of arsenic (15 mg/kg) and lead (16 mg/kg) in soil were detected in a sample collected from the glauconitic-rich soil layer proximate to monitoring well 108MW04 (15 mg/kg at 7.0-8.0 feet bgs). Lead was also detected at the same concentration in the shallower soil sample depth (6.5-7.0 feet bgs).
- The greatest concentrations of arsenic in soil were identified at Site 108 where underground storage tanks used to store petroleum products were removed. Arsenic is not associated with refined petroleum products.
- A comparison of TAL metals concentrations in soil and groundwater was completed and no relationship or correlation could be established.

Conclusions

- Given that arsenic was detected at concentrations exceeding the GWQS, this confirms DPW's conclusion in Versar's *Remedial Investigation Report* (2004) that "... arsenic is likely attributable to the native soil characteristics or a non-point source distributed throughout the subsurface soils at Site 108."
- Based on a general knowledge of site historical operations and geology of the Fort Monmouth area, the presence of arsenic and lead co-exist as naturally-occurring TAL metals that are unrelated to anthropogenic activities at the three sites that were investigated.

- It appears arsenic and lead co-exist as naturally occurring TAL metals, i.e. neither metal has been detected and confirmed or documented from a source at any site.
- It appears that the source of arsenic in groundwater is due to natural conditions rather than man-made/anthropogenic sources. Vowinkel et al. (2001) reported that arsenic concentrations greater than 50 µg/L are typically are associated with known contaminated sites. The greatest concentration of arsenic identified in this study is 8.77 µg/L.

Recommendations

- To determine if suspended particles (turbidity) is proportional to detectable concentrations of metals in aqueous samples, filtered and unfiltered samples should be collected and analyzed for TAL metals by a NJ certified laboratory. Filtered samples should provide more consistent analytical results and be more representative of the water quality moving within a water-bearing zone.
- Samples of the glauconite should be collected and chemically analyzed by a certified laboratory for TAL metals to determine if arsenic and other TAL metals are present in its chemical makeup (source material).

References

Dooley, J.H., 2001, *Baseline Concentrations of Arsenic, Beryllium, and Associated Elements in Glauconite and Glauconite Soils in the New Jersey Coastal Plain*, New Jersey Geological Survey, Trenton, 238 pp.

Jablonski, L.A., 1968, *Groundwater Resources of Monmouth County, New Jersey. U.S. Geological Survey Special Report 23*. Washington, DC.

Minard, J.P., 1969, *Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey*. U.S. Government Printing Office, Washington, DC.

NJDEP, 2005, *Field Sampling Procedures Manual*, Trenton, NJ

Rutgers University, 2002, *Greensand and Greensand Soils of New Jersey – A Review*, Department of Ecology, Evolution and Natural Resources.

U.S. Army Base Realignment and Closure, 2007, *Environmental Condition of Property Report*, Fort Monmouth.

U.S. Geological Survey, 1984, *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*, Professional Paper No. 1270.

Versar, Inc., 2004, *Remedial Investigation Report*.

Vowinkel, E.F., Grosz, A.E., Barringer, J.L., Szabo, Z., Stackelberg, P.E., Hopple, J.A., Grossman, J.N., Murphy, E.A., Serfes, M. and Spayd, S., 2001, *Distribution of Arsenic in the Environment in New Jersey*, U.S. Geological Survey Open-File Report 01-142, 4 p.

If you have any questions or require additional information, please contact John H. Montgomery, Senior Hydrogeologist, at 732-532-7979 or email: john.h.montgomery@us.army.mil.

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Chief, Environmental Division

c: file
Attachments

Attachment 1

Base-Wide Glauconitic Soil Sampling Plan Approval Letter from NJDEP

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION, PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. BOX 413
TRENTON, NEW JERSEY 08625-0413

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

October 29, 2010

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Base-Wide Glauconitic Soil Sampling Plan
Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) has received and reviewed the revised Base-Wide Glauconitic Soil Sampling Plan dated October 13, 2010. The stated intent of the Base-Wide Glauconitic Soil Sampling Plan is to "confirm and document that select TAL metals detected in groundwater on the Main Post are naturally associated with glauconitic soils".

As you know, SRP reviewed prior versions of the sampling plan and provided comments, primarily about the compositing of soil samples. We have also discussed the sampling plan with Chuck Appleby and John Montgomery of your staff. SRP believes that the proposed soil and ground water sampling procedures and methodologies are now technically correct. As such, we are willing to take the results of the proposed sampling into consideration. However, that is not an assurance that we will concur with the conclusions that Fort Monmouth draws from the investigation, or that the results of the proposed glauconitic soil sampling will be a significant factor in any remedial decisions.

You or your staff may contact me at 609-633-0766 with any questions on the enclosed comments, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., Site Manager
Bureau of Investigation, Design and Construction

Attachment 2

Well Logs for 108-MW04, 296-MW04, M2-MW13, M2-MW18, and M2-MW24

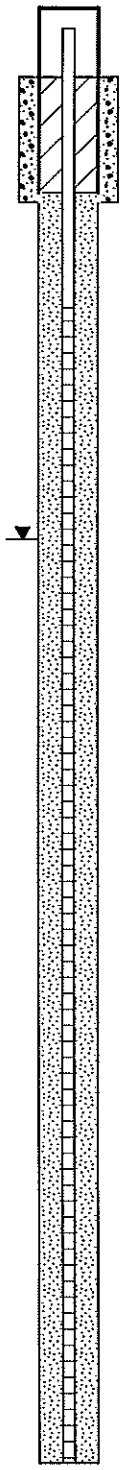
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING 108MW04

U.S. ARMY
SELFM-PW-EV
JOSEPH FALLON
SITE 108 (FTMM-57)
GROUNDWATER INVESTIGATION

NJDEP Permit #	: 29-33762	Northing	: N 541733.142
NJDEP Case #	: 93-1-12-1939-29	Easting	: E 623706.198
Start Date	: 8/16/1995	Logged By	: Shore Drilling Inc.
Completion Date	: 8/16/1995	Driller	: Gary Parent

Well: MW04
Elevation: 12.77



Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blows/ft.
0–1	Brown coarse-fine SANDS, gravel, dry	SM		1	10
2–3	Green brown SANDS, clay, tree roots, moist	CL		2	4
4–6	Brown coarse-fine SANDS, coarse-fine gravel, clayey, wet, less clayey with depth	SP		3 4	24 16
7–9	Brown coarse-fine SANDS, fine gravel, wet, mottled gray, clay at 11.5 feet	SW		5	4
10–12	Green-black CLAY, fine sand, wet glauconite	CL		6	7

Well Construction Information

Well Construction

Hole Diameter	: 12 inch
Drill Method	: Hollow Stem Auger
Sampling Method	: Split Spoon

Well Casing

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Length	: 5 feet

Well Screen

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Opening	: 0.020 inch
Length	: 10 feet
Sand Pack	: #2 Morie Sand
Annulus Seal	: Bentonite Slurry

Stick up: 3 feet
Water level: 4 feet

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\108\MW Information\Well Logs (Electronic)\108MW04.BOR

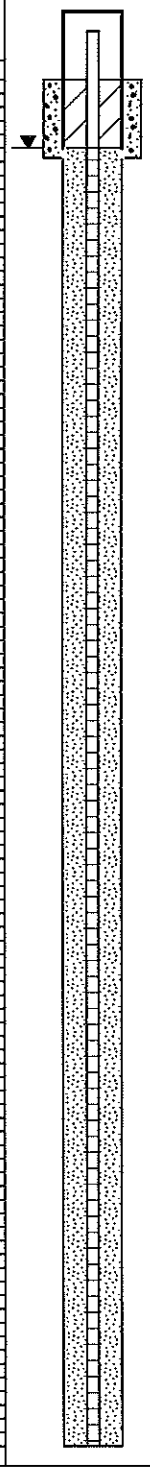
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING 296MW04

U.S. Army
SELFM-PW-EV
JOSEPH FALLON
SITE 296 (FTMM-54)
GROUNDWATER INVESTIGATION

NJDEP Permit #	: 29-33989	Northing	: N 540626.952
NJDEP Case #	: 93-11-2-1200-13	Easting	: E 618337.256
Start Date	: 9/12/1995	Logged By	: Shore Drilling Inc
Completion Date	: 9/12/1995	Driller	: Gary Parent

Well: MW04
Elevation: 5.42



Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count
0	Topsoil, roots, organic	SM		1	1 1/12
1	Black-brown clayey SILT; organic, wet at 1.3 feet	OL		2	2 2 2 1 2
2				3	3 2 4 7
3				4	2 3 9 11
4					
5	Green glauconite	CL			
6					
7					
8					
9					
10					

Well Construction Information

Well Construction

Hole Diameter	: 12 inch
Drill Method	: Hollow Stem Auger
Sampling Method	: Split Spoon

Well Casing

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Length	: 0.5 feet

Well Screen

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Opening	: 0.020 inch
Length	: 9.5 feet
Sand Pack	: #2 Morie Sand
Annulus Seal	: Genonite

Stick up: 3 feet
Water level: 0.5 feet

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\296\MW Information\Well Logs (Electronic)\296MW04.BOR

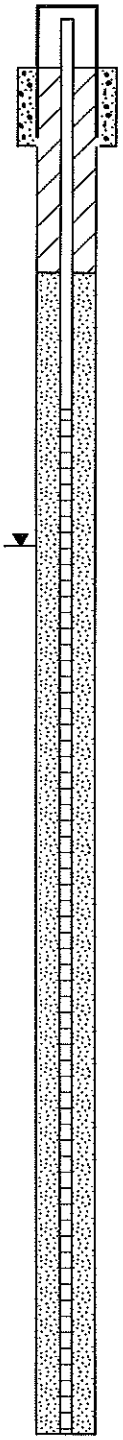
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M2MW13

U.S. Army
SELFM-PW-EV
JOSEPH FALLON
M2 LANDFILL (FTMM-02)
GROUNDWATER INVESTIGATION

NJDEP Permit #	: 29-42771	Northing	: N 538121.151
NJDEP Case #	: -	Easting	: E 617127.234
Start Date	: 5/8/2000	Logged By	: CT&E Environmental
Completion Date	: 5/8/2000	Driller	: William Petley

Well: MW13
Elevation: 16.08



Depth In Feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Well Construction Information
0–10	FILL					Well Construction Hole Diameter : 10 inch Drill Method : Hollow Stem Auger Sampling Method : Split Spoon Well Casing Material : PVC Diameter : 4 inch Joints : Threaded Length : 5 feet Well Screen Material : PVC Diameter : 4 inch Joints : Threaded Opening : 0.010 inch Length : 15 feet Sand Pack : #1 Morie Sand Annulus Seal : Bentonite
10–15	Organic SILT	OL				Stick up: 2.5 feet Water level: 7 feet *Boring log derived from Monitoring Well Record
15–20	Glauconite	CL				

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\M-2\MW Information\Well Logs (Electronic)\M2MW13.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

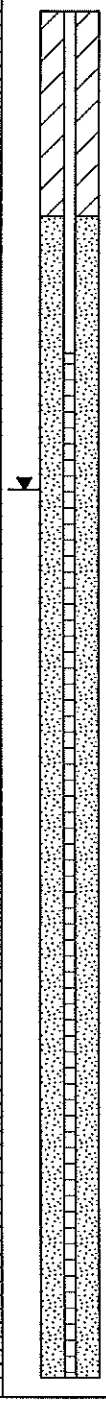
LOG OF BORING M2MW18

U.S. Army
SELFM-PW-EV
JOSEPH FALLON
M2 LANDFILL (FTMM-02)
GROUNDWATER INVESTIGATION

NJDEP Permit #	: 29-42776	Northing	: N 537753.868
NJDEP Case #	: -	Easting	: E 616581.974
Start Date	: 5/2/2000	Logged By	: CT&E Environmental
Completion Date	: 5/2/2000	Driller	: William Petley

Well: MW18
Elevation: 11.67

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count
0	FILL				
10	Organic SILT	OL			
13	SILT	ML			
17	Glauconite	CL			
20					



Well Construction Information

Well Construction

Hole Diameter	: 10 inch
Drill Method	: Hollow Stem Auger
Sampling Method	: Split Spoon

Well Casing

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Length	: 5 feet

Well Screen

Material	: PVC
Diameter	: 4 inch
Joints	: Threaded
Opening	: 0.010 inch
Length	: 15 feet

Sand Pack	: # 1 Morie Sand
Annulus Seal	: Bentonite

Water level: 7 feet

*Boring log derived from Monitoring Well Record

**Casing height not indicated on Monitoring Well Record

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\M-2\MW Information\Well Logs (Electronic)\M2MW18.BOR

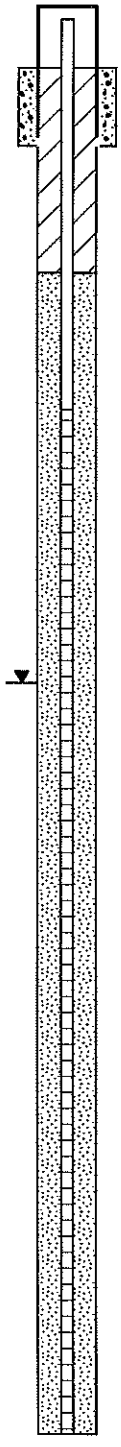
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M2MW24

U.S. Army
SELFM-PW-EV
JOSEPH FALLON
M2 LANDFILL (FTMM-02)
GROUNDWATER INVESTIGATION

NJDEP Permit #	: 29-42772	Northing	: N 537805.303
NJDEP Case #	: -	Easting	: E 616599.277
Start Date	: 5/4/2000	Logged By	: CT&E Environmental
Completion Date	: 5/4/2000	Driller	: William Petley

Well: MW24
Elevation: 16.78



Depth In Feet	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Well Construction Information
0–9	FILL					Well Construction Hole Diameter : 10 inch Drill Method : Hollow Stem Auger Sampling Method : Split Spoon Well Casing Material : PVC Diameter : 4 inch Joints : Threaded Length : 5 feet Well Screen Material : PVC Diameter : 4 inch Joints : Threaded Opening : 0.010 inch Length : 15 feet Sand Pack : # 1 Morie Sand Annulus Seal : Bentonite
9–13	Organic SILT	OL				Stick up: 2.5 feet Water level: 9 feet *Boring log derived from Monitoring Well Record
13–15	Silty SAND	SM				
15–20	Glauconite	CL				

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\M-2\MW Information\Well Logs (Electronic)\M2MW24.BOR

Attachment 3

Soil Boring Logs and Glauconitic Sample Location Maps

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING 108 B1

US ARMY
FORT MONMOUTH
BRAC-IRP
SITE 108 (FTMM-57)
JOHN H. MONTGOMERY

DATE STARTED	: 10/26/2010	GEOLOGIST	: John Montgomery
DATE COMPLETED	: 10/26/2010	OPERATOR	: George Boyce
HOLE DIAMETER	: 1.5 Inches	NJDEP LICENSE #	: JD22654
DRILLING METHOD	: Geoprobe	NORTHING	: 541730.471
SAMPLING METHOD	: Macro-Core	EASTING	: 623712.502

DEPTH IN FEET	SAMPLE ID	SAMPLES	PID	GRAPHIC	USCS DESCRIPTION	NOTES
0					Miscellaneous fill, bricks, concrete, construction debris, FB	
3					Grayish-green (glauconitic), inorganic medium stiff plastic clay, iron molting, CL	
5					Light-brown, stiff clay, CL	
6.5	(6.5-7.0')	1	0		Grayish-green (glauconitic), clayey medium-fine sand, wet, trace semi-rounded coarse gravel, SC	Collect sample 6.5-7.0'
7	(7.0-8.0')	2	0		Light brown to tan, fine-very fine sand, trace coarse sand, glauconite-rich, SW	Collect sample 7.0-8.0'
8					Light brown to tan, fine-very fine sand, trace coarse sand, with some glauconite sand, wet, SW	
10						

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\108\Miscellaneous\Borings\Glauconitic Soil Study\108B1.bor

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M2 B3

US ARMY
FORT MONMOUTH
BRAC-IRP
M2 LANDFILL (FTMM-02)
JOHN H. MONTGOMERY

DATE STARTED	: 11/10/2010	GEOLOGIST	: John Montgomery
DATE COMPLETED	: 11/10/2010	OPERATOR	: George Boyce
HOLE DIAMETER	: 1.5 Inches	NJDEP LICENSE #	: JD22654
DRILLING METHOD	: Geoprobe	NORTHING	: 538116.015
SAMPLING METHOD	: Macro-Core	EASTING	: 617121.260

DEPTH IN FEET	SAMPLE ID	SAMPLES	PID	GRAPHIC	USCS DESCRIPTION	NOTES
0–8					Dark brown, fine to very fine sand, with miscellaneous fill (bricks, glass, concrete, etc.) wet at 6.5 feet, FB	
8–12	(8.0-12.0')	1	0		Dark brown, very fine sand, some (+) silt, wet. Trace organics, OL	Collect sample 8.0-12.0'
16–20	(16.0-20.0')	2	0		Dark green (glauconitic) medium to very fine sand, some (+) silt and clay, wet, ML-CL	Collect sample 16.0-20.0'

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\M-2\Miscellaneous\Borings\Glauconitic Soil Study\M2B3.bor

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

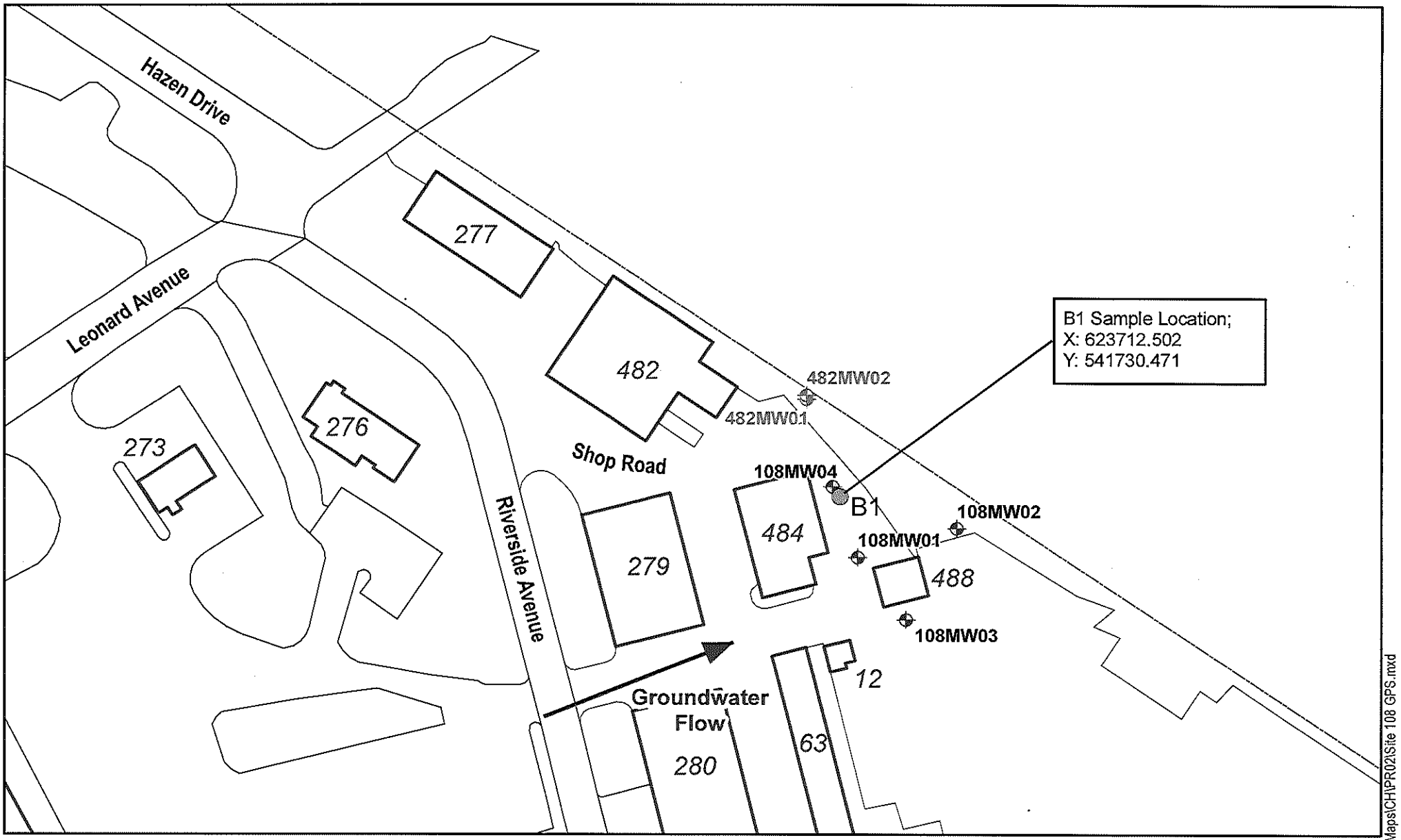
LOG OF BORING 296 B1

US ARMY
FORT MONMOUTH
BRAC-IRP
SITE 296 (FTMM-54)
JOHN H. MONTGOMERY

DATE STARTED	: 11/1/2010	GEOLOGIST	: John Montgomery
DATE COMPLETED	: 11/1/2010	OPERATOR	: George Boyce
HOLE DIAMETER	: 1.5 Inches	NJDEP LICENSE #	: JD22654
DRILLING METHOD	: Geoprobe	NORTHING	: 540519.487
SAMPLING METHOD	: Macro-Core	EASTING	: 618397.020

DEPTH IN FEET	SAMPLE ID	SAMPLES	PID	GRAPHIC	USCS DESCRIPTION	NOTES
0					Greenish-brown to dark brownish-yellow fine-very fine sand, some (+) silt, SM	
4	(3.5-4.0')	1	0		Grayish-black fine-very fine sand, trace (-) gravel, some (+) silt, GM	Collect sample 3.5-4.0'
8					Grayish-black clayey peat, wet. Organic-like odor, PT	
12	(12.0-12.5')	2	0		Greenish-gray to olive green (glauconitic) sand, some (-) clay, wet, SM	Collect sample 12.0-12.5'
14						

02-25-2011 Y:\ENVR_Share\Installation Restoration Program Management\IRP Sites\296\Miscellaneous\Borings\Glauconitic Soil Study\296B1.bor



Glauconite Sample Location
FTMM-57 Main Post
Fort Monmouth, New Jersey

Map Created by:
Fort Monmouth Installation GIO, Environmental Division FOUO
Fort Monmouth, New Jersey
Date: November 16, 2010

N
W E
S

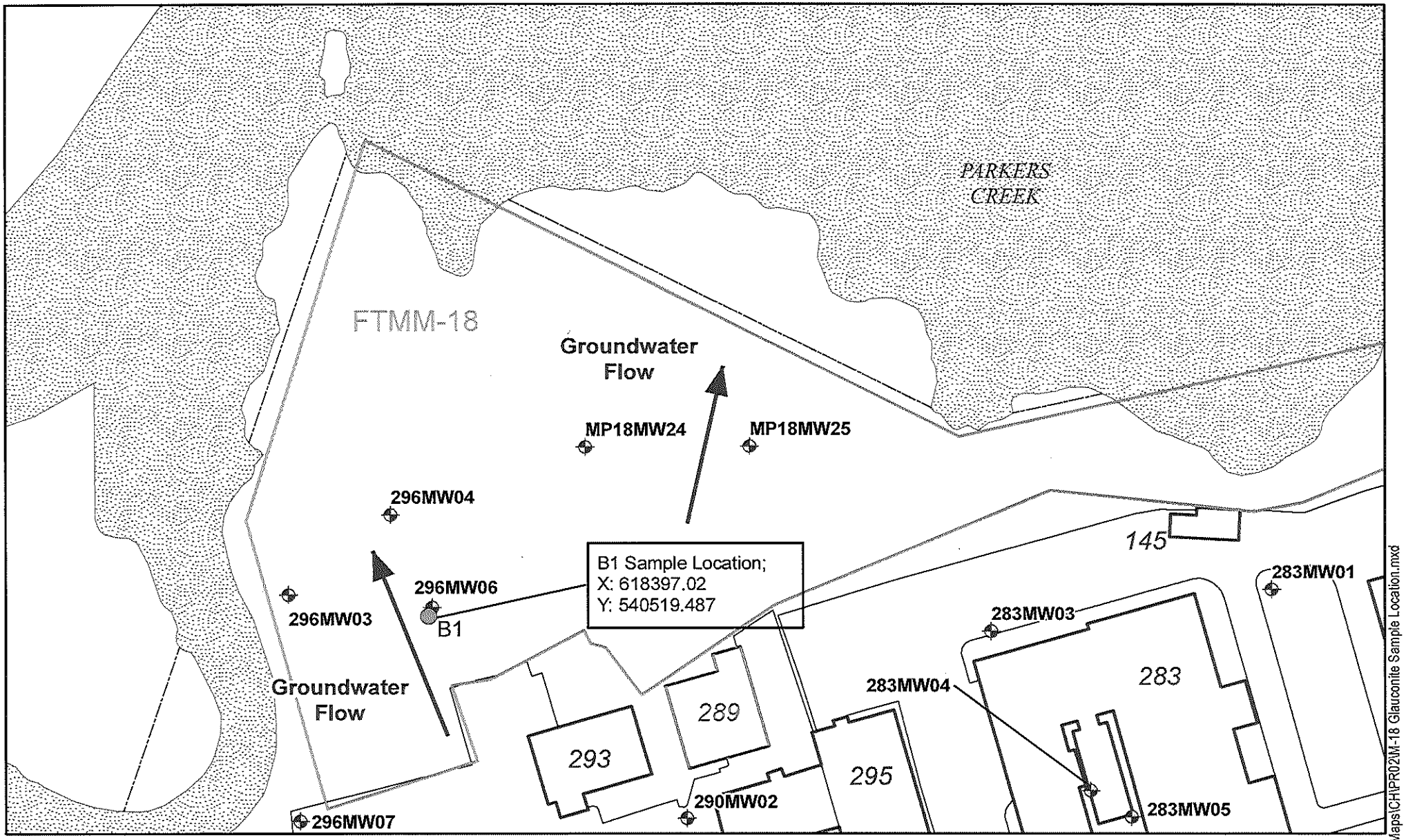
0 50 100 200 Feet

NAD 83, NJ State Plane Feet

Legend

- Sample Location
- Monitoring Well - Abandoned
- Monitoring Well - Active
- Roadway & Parking
- Existing Structure
- Demolished Structure
- Post Boundary

November 16, 2010 H:\IGISIGIS Maps\CHPR02\Site 108 GPS.mxd



Glauconite Sample Location
FTMM-18 Landfill, Main Post
Fort Monmouth, New Jersey

Map Created by:
Fort Monmouth Installation GIO, Environmental Division FOUO
Fort Monmouth, New Jersey
Date: November 16, 2010

N
W E
S

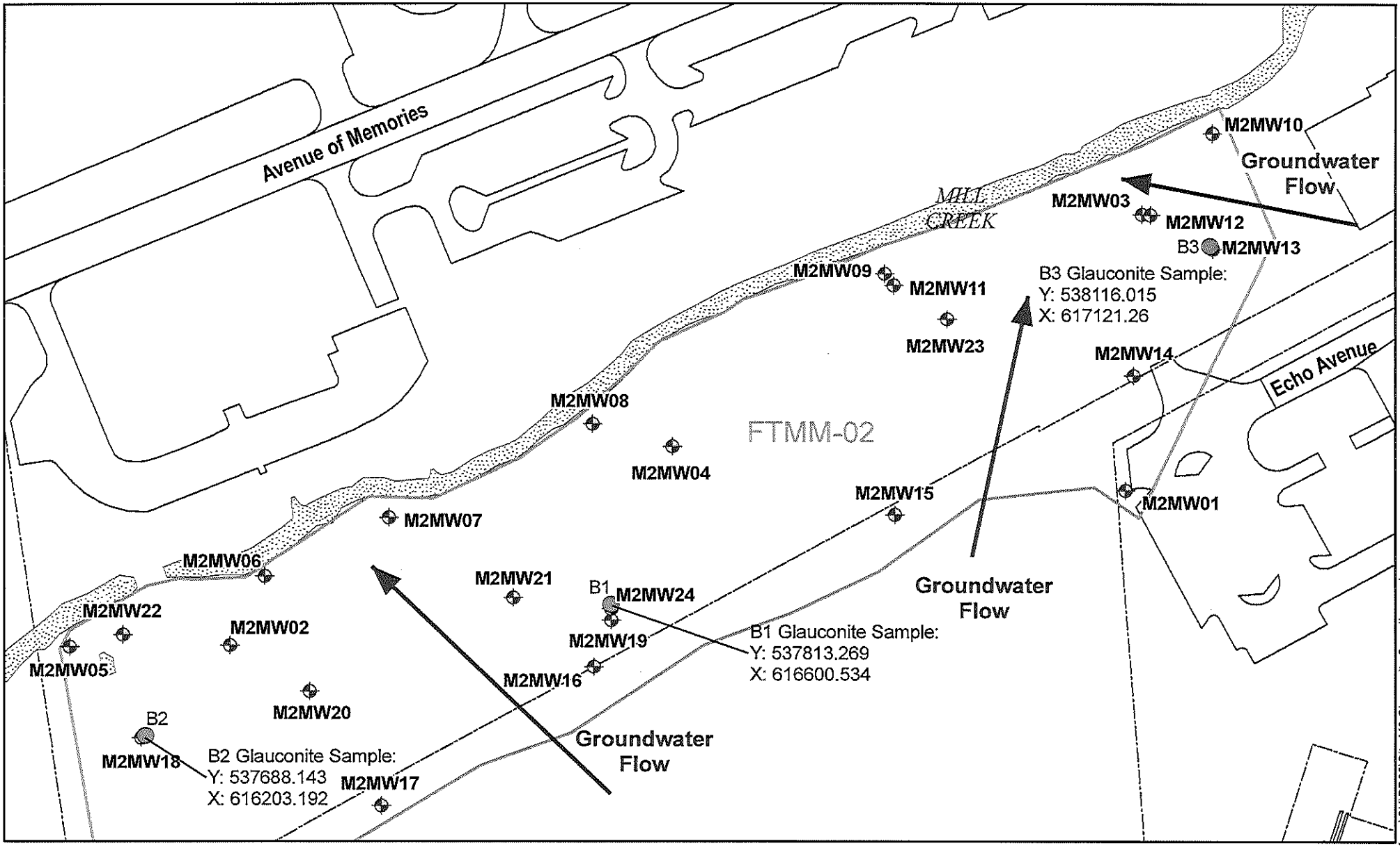
0 50 100 200 Feet

NAD 83, NJ State Plane Feet

Legend

- Sample Location
- Monitoring Well
- Existing Structure
- Demolished Structure
- Roadway & Parking
- Landfill Area
- Water Body
- Post Boundary

November 16, 2010 H:\GIS\GIS Maps\CHPR02\M-18 Glauconite Sample Location.mxd



Glauconite Sampling Locations
FTMM-02 Landfill-Main Post
Fort Monmouth, New Jersey

N
W E
S

0 62.5 125 250 Feet

NAD 83, NJ State Plane Feet

Map Created by:
Fort Monmouth Installation GIO, Environmental Division FOUO
Fort Monmouth, New Jersey
Date: November 17, 2010

Legend

- Glauconite Sample Locations
- Monitoring Well - Active
- Roadway & Parking
- Landfill Area
- Water Body
- Post Boundaries

All features in the legend may not appear in the map.

November 17, 2010 H:\GIS\GIS Maps\CH\PR02\Site M2 Glauconite Sampling.mxd

Attachment 4

Low-Flow Sampling Standard Operating Procedure

CATEGORY: Sample Handling
TITLE: Low Flow Monitor Well Sampling

1 PURPOSE:

1.1 To document current procedures for low flow monitoring, well purging and sampling. The procedure applies to monitoring wells that have an inner casing with a diameter of 2.0 inches or greater, and maximum screened intervals of ten feet unless multiple intervals are sampled. This procedure is appropriate for the collection of ground water samples that will be analyzed for volatile and semi-volatile organic compounds, pesticides, PCBs, metals, and microbiological contaminants in association with all EPA programs.

2 RESPONSIBILITY:

2.1 Designated field samplers who have been properly trained and instructed in low flow methods and in the NJDEP field sampling procedures and protocols.

3 SAMPLE COLLECTION, PRESERVATION AND HANDLING:

3.1 For sample collection, preservation and handling please refer to SOP No. SAM-0200.

4 REFERENCES:

4.1 Field Sampling Procedures Manual, August 2005. New Jersey Department of Environmental Protection.

4.2 USEPA Region II Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling, www.epa.gov/Region2/desa/hsw/lowflow.txt.

4.3 "Low Flow (Minimal Drawdown) Ground Water Sampling Procedures" by Robert W. Puls and Michael J. Barcelona. EPA Ground Water Issue. EPA/540/S-59/504.

4.4 "Low Flow/Low Volume Purging and Sampling" Standard Operating Procedure, City of San Diego, Environmental Services Department, Refuse Disposal Division, February 25, 2004.

4.5 Laboratory SOPs: SAM-0200, SAM-0202 and OQC-0302.

5 SUMMARY:

5.1 The purpose of the low flow purging and sampling is to collect ground water samples from monitoring wells that are representative of ambient ground water conditions in

Prepared By:	Walter Funk	Date:	10/13/10
Technical Supervisor:	Dean Tarde	Date:	10/13/10
QA/QC Supervisor:	Dean Tarde	Date:	10/13/10

the aquifer. This is accomplished by setting the intake velocity of the sampling pump to a flow rate that limits drawdown inside the well.

5.2 Low flow purging and sampling has three primary benefits.
- 5.2.1 First, it minimizes the disturbance of sediment in the bottom of the well, thereby producing a sample with low turbidity (low concentration of suspended particles).
- 5.2.2 Second, this procedure minimizes aeration of the ground water during sample collection, which improves the sample quality for volatile organic analysis.
- 5.2.3 Third, the amount of ground water purged from a well is usually reduced as compared to conventional ground water purging and sampling methods.

5.3 Since the method allows for the collection of ground water samples with low turbidity, it was originally used for collecting samples for inorganic analysis. The method typically allows the collection of samples for total metals analysis and eliminates the need to filter the samples for dissolved metals analysis.

5.4 The method also minimizes aeration of the samples. It can be used to collect samples for analysis of volatile and semi-volatile organic compounds, provided that the appropriate pumps are used in sample collection.

5.5 Advantages of low flow purging and sampling are:
- 5.5.1 Groundwater samples tend to be more representative of actual aquifer conditions with respect to mobile contaminants and turbidity.
- 5.5.2 It causes minimal disturbance of the formation adjacent to the screened aquifer.
- 5.5.3 It is generally less prone to sampling variability compared to other ground water sampling techniques (bailers).
- 5.5.4 Smaller purge volumes and associated disposal expense.
- 5.5.5 Increased sample consistency from dedicated systems and reproducibility of data due to reduced operator variability.

5.6 Disadvantages of low flow purging and sampling are:
- 5.6.1 Misconceptions regarding reduced purging and sampling time.
- 5.6.2 Sampling from non-dedicated systems requires greater set-up time.
- 5.6.3 .Sampling from dedicated systems requires higher initial capital expenses.
- 5.6.4 Increased technical complexity.
- 5.6.5 Increased training needs for sampling personnel.
- 5.6.6 Not a first round sampling option.
- 5.6.7 Not recommended for wells with long screen intervals unless multiple samples are collected.

6 DEFINITIONS:

6.1 LFPS = Low Flow Purging and Sampling.

6.2 PPE = Personal Protective Equipment.

6.3 NIST = National Institute of Standards and Technology.

7 SAFETY:

7.1 For safety, please refer to CTSC Fort Monmouth, NJ Health and Safety Plan (HASP).
7.2 Preparation: It should be noted that before going out into the field, certain preparations should be made. This includes the selection of PPE, safety plans, proper bottle acquisition for the analytes being tested, site entry, map information and equipment.
7.3 Avoid skin contact and ingestion of purge water.
7.4 Avoid breathing constituents venting from the well.

8 EQUIPMENT AND MATERIALS:

8.1 YSI 600XL Sonde (or equivalent) with temperature, pH, Specific conductivity and DO probes or other probes as needed.
8.2 YSI 6820 Sonde (or equivalent) if oxidation reduction potential (ORP) is needed.
8.3 YSI 650 MDS Data Logger (or equivalent) with appropriate cables.
8.4 HNU photo ionization detector (PID).
8.5 HACH turbidity meter (or equivalent).
8.6 Peristaltic well pumps.
8.7 Pump heads and power cables.
8.8 Water level meter, accurate to 0.01 foot.
8.9 Oil/water interface probe.
8.10 Submersible well pumps.
8.11 Various batteries.
8.12 Buckets.
8.13 Polyethylene sheeting.
8.14 Miscellaneous tools, i.e. screwdriver and well wrench.
8.15 Miscellaneous equipment supplies and tools.
8.16 Deionized water sprayer.
8.17 Paper towels and scrub brushes.
8.18 Graduated cylinder.
8.19 Gas generator and fuel supply if needed.
8.20 Silicone thick wall (lab grade) tubing ¼ inch diameter.
8.21 Polyethylene (food grade) tubing ¼ inch diameter. Sufficient tubing must be available so that each well has dedicated tubing.
8.22 Stop watch.
8.23 Sample bottles, preservation supplies, sample labels and chain of custody forms.
8.24 Coolers (for sample transport).
8.25 Approved Quality Assurance Project Plan.
8.26 Well keys and map of well locations.
8.27 Field notebook, ground water sampling logs and calculator.

9 STANDARDS/REAGENTS:

9.1 Buffer solutions, calibration gases, decontamination materials and acid for preservation.

9.1.1 Buffer solutions:

9.1.1.1 7.00 standard buffer solution.

9.1.1.2 10.00 standard buffer solution.

9.1.1.3 4.00 standard buffer solution.

9.1.2 Oxidation Reduction Calibration solution.

9.1.3 Appropriate NTU Turbidity solutions for calibration.

9.1.4 Distilled/deionized water.

9.1.5 Alconox.

9.1.6 10 % Nitric acid rinse (trace metal or higher grade HNO_3 diluted with distilled/deionized ASTM Type II water).

9.1.7 Acetone, pesticide grade.

9.1.8 Pure nitrogen for blow out.

9.1.9 Acids/materials used in preserving samples:

9.1.9.1 Nitric acid 69.0-70.0%.

9.1.9.2 Sulfuric acid 50% (w/w) solution.

9.1.9.3 Hydrochloric acid (trace metal grade).

9.1.10 Ice for keeping samples at less than 4 degrees Celsius.

10 QUALITY CONTROL:

10.1 Quality control samples must be collected to verify that sample collection and handling procedures were performed adequately and that they have not compromised the quality of the ground water samples.

10.2 Sample containers: Before sample collection begins, consideration must be given as to what type of container will be used to transport and store samples. The laboratory provides containers based upon requested methodologies. Selection is based on the matrix, potential contaminants, analytical methods and the laboratories internal QA/QC requirements. They should be selected upon review of the following:

10.2.1 Reactivity of the container material with the sample. Glass is recommended for hazardous material samples since it is chemically inert to most substances. Plastic may be used when analytes of interest or sample characteristics dictate the use of instead.

10.2.2 Volume of the container. The analytical method and the matrix of the sample dictate the volume of sample needed. The laboratory will supply bottles that allow for sufficient volumes of sample to be collected.

10.2.3 Color of container. Whenever possible, amber glass is used to prevent photo degradation. If not available, samples should be kept protected from light. One exception is the 40 mL clear glass VOA vials used for volatile organics.

10.2.4 Container closures. All containers utilized have a leak proof seal and are constructed out of material that is inert with respect to sampled materials. The closure may also be separated by a closure liner that is inert to the sample material.

10.2.5 Decontamination of containers and chain of custody. Sample containers are laboratory cleaned or bought precleaned from the vendor. Bottles being shipped are accompanied by a chain of custody in a cooler with a custody seal. Custody must accompany the containers to the field, during collection, back to the laboratory and during analysis. This helps to assure that no tampering or contamination occurs from outside sources.

10.2.6 Storage and transport. Care is taken to avoid contamination. Clean transport and storage environments are observed. Sample or bottle storage is never near solvents, gasoline, or other equipment that is a potential source of contamination. The samples are secured in coolers for transport with chain of custody forms inside the coolers or in the hands of authorized personnel.

10.2.6.1 . Additionally, a temperature blank is included in each cooler to measure the temperature of the samples on ice in the coolers (ideally a constant </= 4 degrees Celsius).

10.2.7 Tubing decontamination. Food grade polyethylene tubing is used and discarded after each use. Avoid pump and tubing contact with ground surfaces. All tubing is rinsed and wiped with distilled/deionized water to remove any possible residual materials on it before entering the well.

10.2.8 Pump decontamination. Since a peristaltic pump never contacts the water, it only needs to be kept in clean, running order. Silicone tubing used in the pump head needs to be replaced each time the pump is used. For a submersible pump, the following daily decontamination and in between well decontamination procedures should be followed:

10.2.8.1 Daily decontamination:

10.2.8.1.1 Pre-rinse: Operate the pump in a deep basin containing 8-10 gallons of potable water for 5 minutes and flush the other equipment with potable water for 5 minutes.

10.2.8.1.2 Wash: Operate the pump in another deep basin containing 8-10 gallons of a non-phosphate detergent solution such as Alconox for 5 minutes and flush the other equipment with fresh detergent solution for 5 minutes.

10.2.8.1.3 Rinse: Operate the pump in a deep basin of potable water for another 5 minutes and flush the other equipment for 5 minutes with potable water.

10.2.8.1.4 Disassemble pump (refer to the pump directions).

10.2.8.1.5 Wash the parts of the pump: Place the disassembled parts of the pump into a basin containing another 8-10 gallons of non-phosphate detergent. Scrub all parts with a test tube brush.

10.2.8.1.6 Rinse the pump parts with potable water.

10.2.8.1.7 Rinse the following parts with distilled/deionized water: Inlet, screen, shaft, suction interconnector, motor lead assembly, and the stator housing.

10.2.8.1.8 Place the impeller assembly in a large glass beaker and rinse with 1% nitric acid.

10.2.8.1.9 Rinse the impeller assembly with potable water.

10.2.8.1.10 Rinse the impeller assembly with isopropanol.

10.2.8.1.11 Finally, rinse the impeller assembly with distilled/deionized water.

10.2.8.2 Between well decontamination:

10.2.8.2.1 Pre-rinse: Operate the pump in a deep basin containing 8-10 gallons of potable water for 5 minutes and flush the other equipment with potable water for 5 minutes.

10.2.8.2.2 Wash: Operate the pump in another deep basin containing 8-10 gallons of a non-phosphate detergent solution such as Alconox for 5 minutes and flush the other equipment with fresh detergent solution for 5 minutes.

10.2.8.2.3 Rinse: Operate the pump in a deep basin of potable water for another 5 minutes and flush the other equipment for 5 minutes with potable water.

10.2.8.2.4 Final rinse: Operate the pump in a deep basin of distilled/deionized water to pump out 1-2 gallons of this water.

10.3 Disposal of development, purge, pump test, and decon waters: To determine whether wastewaters are contaminated, field instrument readings and previous analytical data are used for characterization. Water that is not considered contaminated can be re-applied directly to the ground surface and permitted to percolate back into the groundwater system. Care should be taken to avoid nuisance situations where discharge may cause undue concern. When water is considered contaminated, the water generated can be reapplied back only if the following conditions are met: Ground water is not permitted to migrate off site. No potential for contaminating a previously uncontaminated aquifer. Discharge will not cause an increase to ground surface soil contamination. If these conditions cannot be met, then water is collected and secured in a single locale. It may be re-applied to the ground surface if the analytical results indicate the above requirements have been met. If not, arrangements

are made for proper disposal. Please refer to the NJDEP Field Sampling Procedures Manual, Chapter 2A, pages 24-25.

10.4 QA/QC samples: These samples are intended to provide control over the collection of measurements and subsequent validation, review and interpretation of analytical data. A trip blank is used for volatile organics and its purpose is to measure possible cross contamination of samples in transit and at the site. It is **never** opened and travels to the site or sites with **empty** sample bottles and back **with** the samples. The trip blank may also indicate poor cleaning. Likewise, a field blank is used to determine a control on the equipment handling, preparation, storage and shipment. It travels with the samples and is a representative o shipment effects on sample quality. By being opened in the field, transferred over a cleaned sampling device, the field blank is indicative of ambient and equipment conditions that may affect the quality of associated samples. It also serves as an additional check on the possible sources of contamination. Blank water is demonstrated analyte free and is from the same common source and physical locale in the laboratory.

10.4.1 QA/QC blank requirements:

10.4.1.1 Field blanks: They are preserved and analyzed for all of the same parameters as the samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. These blanks should be prepared during the middle to end of a sampling event by filling sample containers with water from like containers poured over the decontaminated equipment. Field blanks must be taken once a day during sampling.

10.4.1.2 Equipment blanks: They are preserved and analyzed for all of the same parameters as the samples collected that day. They may be required in order to detect cross contamination from ambient air during a potable sampling if known sources are within proximity or monitoring equipment indicates their presence as background. These blanks should be prepared at the beginning of the sampling event by filling sample containers with water from like containers poured over the decontaminated equipment. Equipment blanks are not necessary if the equipment is dedicated to the well.

10.4.1.3 Trip blanks: They consist of a set of bottles each filled at the lab with analyte free water. They accompany the bottles both to and from each site. They are never opened in the field. They are also returned in the same bottles they were sent out in. At a minimum, a trip blank must be analyzed for volatile organics. Inclusion of additional parameters is at the discretion of the NJDEP. Trip blanks and the samples they

accompany are not held on site for more than 2 calendar days. A trip blank is included in each sample shipment or trip to the field, not to exceed 2 consecutive field days.

10.4.2 Additional QA/QC samples:

10.4.2.1 Duplicate samples: The collection of a duplicate provides for evaluation of the laboratory performance by comparing the analytical data of two samples from the same location. They are included 1 for every 20 samples (5% or 1 a day per site) and submitted as blind samples. They are obtained by alternately filling sample bottles from the same source/device for each parameter. Samples collected for volatile organics are sampled from the same bailer and the first set of bottles filled.

10.4.2.2 Matrix spike/matrix spike duplicate or MS/MSD samples: The laboratory is supplied with triple volume in order to perform the MS/MSD samples. This does not include trip or field blanks. They should occur once in every case of field samples, every 20 field samples or each 14 day calendar period in which a site is being worked at and samples collected.

10.5 Sample preservation: Sample bottles are preserved by the laboratory according to the analytical requirements. Refer to SOP SAM-0200, Sample Containers, Preservation and Holding Times and also the NJDEP Field Sampling Procedures Manual.

11 CALIBRATION:

11.1 All instruments used for field readings are calibrated as follows:

11.1.1 The use of YSI Sondes must start out with a calibration using pH buffer solution standards and specific conductivity solutions to check and calibrate accuracy before each day of use.

11.1.2 HNUs are calibrated with a known calibration gas before each day of use.

11.1.3 Dissolved oxygen meters are checked against a Winkler method test weekly.

11.1.4 Turbidity meters are checked against standards regularly with each use.

11.1.5 Cooler thermometers are calibrated against a NIST traceable thermometer annually.

11.1.6 All calibrations for a given days use are recorded in the logbook provided for each instrument.

11.1.7 Refer to the equipment directions for calibration instructions.

12 PROCEDURE: The following describes the purging and sampling procedures for the low flow method for the collection of ground water samples. It provides steps for dedicated and non-dedicated systems.

12.1 Pre-Sampling Activities (Dedicated and Non-dedicated systems):

12.1.1 Start with the well known or believed to have the least contaminated ground water and proceed systematically to the well with the most contaminated ground water.

12.1.2 Check and record the condition of the monitoring well for damage or evidence of tampering. Lay out polyethylene sheeting and place monitoring, purging and sampling equipment on the sheeting.

12.1.3 Unlock the well head and remove the well cap. Record the location, time, and date in the field logbook.

12.1.4 Monitor for volatile organics with a PID at the rim of the casing and record the reading in the field logbook.

12.1.5 Free product check (Light non-Aqueous Phase liquids and Dense Non-Aqueous Phase Liquids):

12.1.5.1 An ORS meter is used to determine interfaces and the presence or absence of product is also determined. If product is detected, the thickness of the product is measured and recorded.

12.1.5.2 The thickness of DNAPLs and LNAPLs must be performed prior to purging the well. The layers of LNAPLs and DNAPLs are sampled and analyzed for chemical and physical parameters. The LNAPLs are sampled by using a bottom filling bailer, lowered through the LNAPL layer but not significantly down into the next phase. LAPLs have a low solubility in water and tend to float on the water surface. The LNAPL sample should be analyzed for chemical composition (volatile and semi-volatile organics) and physical parameters (specific gravity, water solubility and vapor pressure of the liquid). DNAPLs are sampled by using a dual check valve bailer or bladder pump. DNAPLs include chlorinated solvents and other chemicals that have specific gravities greater than water. The DNAPL sample should be analyzed for chemical composition by fingerprinting (TCE or coal tar) and physical composition (specific gravity, water solubility and equilibrium vapor pressure of the liquid).

12.1.6 Measure the depth to water (nearest 0.01 feet) relative to the reference measuring point on the well casing and record it in the field logbook. This measurement should be taken a second time for confirmation.

12.1.7 Check the well or field information for the total depth of the monitoring well. Use the depth to water and the total depth of the monitoring well to calculate the volume of the water in the well or the volume of one casing. Record the information in the field logbook.

12.2 Purging and Sampling Activities:

12.2.1 Non-dedicated system: Slowly lower the pump and tubing down the well until the location of the pump intake is set at a pre-determined location within the screen interval. Record pump location in the field logbook.

12.2.2 Dedicated system: Pump has already been installed. Refer to the well information and record the depth of the pump intake in the field logbook.

12.2.3 Non-dedicated and dedicated systems: Measure the water level (nearest 0.01 feet) and record it in the logbook, leave the water level indicator probe in the well.

12.2.4 Non-dedicated and dedicated systems: Connect the discharge line from the pump to the flow cell. A "T" connection is needed prior to the flow cell to allow for the collection of water for the turbidity measurements. The discharge line from the flow-through cell must be directed to a container to contain the purge water during the purging and sampling of the well.

12.2.5 Non-dedicated and dedicated systems: Start pumping the well at a low flow rate (0.2-0.5 L/min) and slowly increase the speed. The water level should be monitored at approximately every 5 minutes. Maintain a steady flow rate while maintaining a drawdown of less than 0.33 feet. If drawdown is greater than 0.33 feet, lower the flow rate. This flow rate may be difficult to maintain and may require several adjustments.

12.2.6 Non-dedicated and dedicated systems: Measure the discharge rate of the pump with a graduated cylinder and a stop watch. Also, measure the water level and record both the flow rate and water level in the logbook. Continue this monitoring every five minutes during purging.

12.2.7 Non-dedicated and dedicated systems: During the purging, a minimum of one tubing volume must be purged prior to recording the water quality indicator parameters. Then monitor the water quality indicator parameters every five minutes. The water quality indicator parameters are turbidity, dissolved oxygen, specific conductance (conductivity), pH, redox potential and temperature. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows:

12.2.7.1 Parameter, pH, stabilization criteria, ± 0.1 pH units.

12.2.7.2 Parameter, Conductivity, stabilization criteria, ± 3 % S/cm.

12.2.7.3 Parameter, redox potential, ± 10 millivolts.

12.2.7.4 Parameter, turbidity, stabilization criteria, ± 10 % NTUs.

12.2.7.5 Parameter, dissolved oxygen, stabilization criteria, ± 0.3 mg/L.

12.2.8 If the water level is approaching the top of the screen and the well cannot be maintained at 0.33 feet, reduce the flow rate or turn the pump off (for 15 minutes) and allow for recovery. Under no circumstances should the well be pumped dry. Begin pumping at a lower flow rate, if the water draws-down to the top of the screened interval again turn the pump off and allow for recovery.

If two tubing volumes have been removed during purging then sampling can proceed next time the pump is turned on. This information should be noted in the field logbook with a recommendation for a different purging and sampling procedure.

12.2.9 Non-dedicated and dedicated systems: Maintain the same pumping rate or reduce it slightly for sampling (0.2 to 0.5 liters per minute) in order to minimize disturbance of the water column. Samples should be collected directly from the discharge port of the pump tubing prior to passing through the flow-through cell. Disconnect the pump's tubing from the flow-through cell so that the samples are collected for dissolved gases or volatile organic analyses, the tubing needs to be completely full of ground water to prevent the ground water from being aerated as the ground water flows through the tubing. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container. When sampling the volatile organic containers, a meniscus must be formed over the mouth of the vial to eliminate the formation of air bubbles and head space prior to capping. The samples are collected in the following order:

12.2.9.1 Volatile organics.
12.2.9.2 Purgeable organic carbons.
12.2.9.3 Purgeable organic halogens.
12.2.9.4 Total organic halogens.
12.2.9.5 Total organic carbon.
12.2.9.6 Base neutrals/acid extractables.
12.2.9.7 TPHC/oil and grease.
12.2.9.8 PCB's/pesticides.
12.2.9.9 Total metals.
12.2.9.10 Dissolved metals.
12.2.9.11 Phenols, cyanide.
12.2.9.12 Sulfate and chloride.
12.2.9.13 Turbidity.
12.2.9.14 Nitrate and ammonia.
12.2.9.15 Preserved inorganics.
12.2.9.16 Radionuclides.
12.2.9.17 Non-preserved inorganics.
12.2.9.18 Bacteria.

12.2.10 Non-dedicated systems: Remove the pump from the well. Decontaminate the pump and properly dispose of the tubing.

12.2.11 Dedicated system: Disconnect the tubing that extends from the plate at the wellhead (or cap) and discard after use.

12.2.12 Non-dedicated system: Before locking the well, measure and record the well depth (to 0.1 feet). Measure the depth a second time to confirm the initial reading. The measurements should agree to within 0.01 feet or remeasure.

12.2.13 Non-dedicated and dedicated systems: Close and lock the well.

12.2.14 Decontamination procedures for the water level meter and field parameter sensors:

12.2.14.1 The water level meter will be hand washed with Alconox and a scrubber. They will then be rinsed with distilled/deionized water.

12.2.14.2 The field parameter sensors will be rinsed with distilled/deionized water between sampling locations. After the sampling event, the sensors must be cleaned and maintained per the manufacturer's requirements.

12.2.15 Decontamination procedure for the pump:

12.2.15.1 The outside of the pump, tubing, support cable and electrical wires must be pressure sprayed with soapy water, tap water and distilled/deionized water. Spray until water is flowing off tubing after each rinse. Use a scrubber to help remove visible dirt and contaminants.

12.2.15.2 Place the sampling pump in a bucket with distilled/deionized water. It must be completely submerged in the water. Add a small amount of Alconox to the water.

12.2.16 To prevent cross-contamination, the sampling should proceed from the least to the most contaminated wells.

12.2.17 Several activities need to be completed and documented once ground water sampling has been completed.

12.2.17.1 Ensure that all of the field equipment has been decontaminated and returned to their proper storage locations.

12.2.17.2 All paperwork should be processed this includes chain of custody and field notes.

13 CALCULATIONS:

13.1 The following are calculations performed in the field:

13.1.1 Linear feet of water: This is calculated by knowing the total depth of the well and subtracting the depth to water measured by a depth meter. These two numbers should be measured to within 0.01 feet. Through this calculation, the linear feet of water is determined (total well depth – depth to water = linear feet of water).

13.1.2 Volume to be purged and volume not to be exceeded: Utilizing the linear feet of water and then multiplying it by the volume per foot for the appropriate casing will equal the amount of water in the casing. The amount of water in the casing

multiplied by 3 equals the total minimum volume to be purged. It should be noted that the amount purged should not exceed 5 times the amount of standing water in the well.

13.1.2.1 Capacity of Common Casing Diameters:

Casing Diameter (ft)	Gallons/linear foot
2 inch (0.1667)	0.1632
4 inch (0.3333)	0.6528
6 inch (0.5000)	1.4688
8 inch (0.6667)	2.6112
10 inch(0.8333)	4.0800
12 inch(1.0000)	5.8752

13.1.3 Purge rate: Multiply the flow rate (ml/min) by 0.0002642 to get gallons per minute.

14 POLLUTION PREVENTION:

14.1 For pollution prevention, please refer to SOP No. SAM-0222.

15 WASTE MANAGEMENT:

15.1 For sample disposal, please refer to SOP No. SAM-0220.

16 TABLES AND DIAGRAMS:

Table 1

MONITORING WELL SAMPLING DATA

LOCATION:
MW # :
NJDEP ID # :
NJDEP CERT# :
SAMPLING CONTRACTOR:
SAMPLER:
DATE:
WEATHER:
TIDE:
WELL CONDITION:
LNAPLs:
ELEV. OF INNER CASING SURVEY MARE: ft
INNER CASING DIA: inch
DEPTH TO WATER: ft
Before Purge Start: ft Previous Day: ft After Sampling: ft
DEPTH OF WELL: ft
DEPTH TO TOP OF SCREEN: ft
DEPTH of PUMP/TUBE INTAKE: ft
HEIGHT OF WATER: ft
( ) X 0.163 or 0.65 X 3 =
GALLONS OF H_2O TO BE PURGED: Gal

Hnu Calibration:
Sonde Calibration:
pH: 7.00/10.00/4.00 Buffers
Sp Cond/Cond: 26.5u ohms/cm Sol (KCl)
DO: % Humidity 760mm (Bar Press)
Temp:
Turb: Stab Cal set for 2100P
ORP: 235 MV Zobell Sol
HACH Meter Lot:

DNAPLs:

TUBING: Food Grade ¼ " Polyethylene

PURGE METHOD: (FLOW at >100 to <500 gpm): 2" REDIFLO 2 GRUNDPHOS SUBMERSIBLE PUMP
Purged atmL/Min or Gal/Min (mL to Gal = mL X 0.0002642 = Gal
PURGED RATE: gpm Start at at mL/min to mL/min at until end
Hnu READING: ppm (well)
Hnu READING: ppm (well cap)

PURGE START TIME:
pH: su ORP mv Temperature: °F Turbidity: NTU
Dissolved O_2: mg/L Specific Conductivity: us/cm

PURGE END TIME:
pH: su ORP mv Temperature: °F Turbidity: NTU
Dissolved O_2: mg/L Specific Conductivity: us/cm

DEPTH TO H_2O AFTER PURGE AND SAMPLING: ft
SAMPLING METHOD: (Through pump and tubing, flow cell disconnected)

SAMPLE START TIME:
pH: su ORP mv Temperature: °F Turbidity: NTU
Dissolved O_2: mg/L Specific Conductivity: us/cm

SAMPLE END TIME:
ANALYTES:
COMMENTS:

Table 2

Low Flow Well Sampling Data

Date: Well ID: NJDEP # :

Initial Purge Start: Initial Depth to Water:

Time	Temp °C	pH (su)	Cond (us/cm)	DO (mg/L)	ORP (mv)	Turbidity (NTU)	Depth to Water (ft)	Flow Rate (ml/min)

Sample Start Time:

Attachment 5

Laboratory Analytical Reports – Soil

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Site 108

Site/108

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
108MW04 (6.5-7.0')	1046401	Soil	27-Oct-10 09:45	10/27/10
108MW04 (7.0-8.0')	1046302	Soil	27-Oct-10 10:00	10/27/10

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
TAL METALS, %SOLIDS

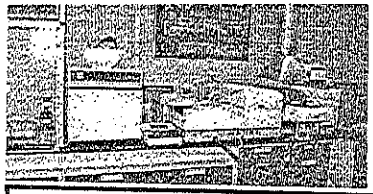
ACCUTEST LABORATORIES
TOC

Dean Tardiff/Date: 12/1/10
Laboratory Manager

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

CHAIN OF CUSTODY

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Telephone: (732) 532-4359; Fax (732) 532-6263; email: Dean.Tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Telephone: (732) 532-2692
( ) DERA ( ) OMA ( ) Other: _____

Project No: 11-16772
Location: Near 108MW04

Sampler's Name / Company: John Montgomery

Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	ABN+25	Pest/PCBs	TAL Metals	% Solids	Total organic carbon	Comments: Remarks/Preservation Method
10493 01	108MW04 (6.5-7.0')	10/27/2010	0945	Soil	1				X	X	X	
02	108MW04 (7.0-8.0')	10/27/2010	1000	Soil	1				X	X	X	
03												
04												
05												
06												
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												

Analysis Parameters

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	
	10/27/10 1045				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	

Report Type: ( ) Full; (X) Reduced; ( ) Standard; ( ) Screen / non-certified; ( ) EDD
Turnaround time: (X) Standard 3 wks; ( ) Rush _____wks; ( ) ASAP Verbal ____hrs.

Comments:

print legibly

200000

SAMPLE RECEIPT FORM

Date Received: 10-27-10 Work Order ID#: 1041103

Site/Proj. Name: Bldg 108 Cooler Temp (°C): N/A

Received By: S. Siengsa Sign: S. Siengsa
(Print name)

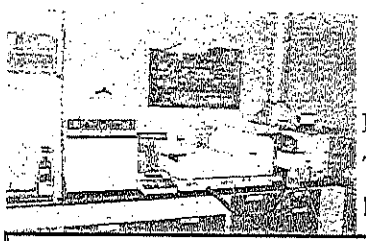
Check the appropriate box

1. Did the samples come in a cooler?	yes	no	n/a
2. Were samples rec'd in good condition?	yes	no	
3. Was the chain of custody filled out correctly and legibly?	yes	no	
4. Was the chain of custody signed in the appropriate place?	yes	no	
5. Did the labels agree with the chain of custody?	yes	no	
6. Were the correct containers/preservatives used?	yes	no	
7. Was a sufficient amount of sample supplied?	yes	no	
8. Were air bubbles present in VOA vials?	yes	no	n/a
9. Were samples received on ice?	yes	no	
10. Were analyze-immediately tests perform within 15 minutes	yes	no	n/a

Fill out the following table for each sample bottle

Lims ID	pH	Preservative	Sample ID	pH	Preservative

Comments: _____



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Dean Tardiff
Phone #: (732)532-6352
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Bldg. 482

Samplers Name / Company:

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TOC								Comments: Remarks / Preservation Method
1046301	108MW04 (6.5-7.0)	10/27/2010	9:45	Soil	X	X								
1046302	108MW04 (7.0-8.0)	10/27/2010	10:00	Soil	X	X								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	11-010 1335	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]		[signature]			

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, ( )Rush Wk., _(_)ASAP Verbal ____Hrs.

Comments: PO C09-20650

000004

print legibly

NCSent

CONFORMANCE/ NON-CONFORMANCE SUMMARY

METALS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Project: 10463
Method: 6010B

		Indicate Yes, No, N/A
1.	Initial and Continuing Calibration Verifications Meet Criteria CCV-2 TL = 88.75 %.	✓
2.	ICP Interference Check Sample Results Meet Criteria	✓
3.	Serial Dilutions Meet Criteria 1046301	
4.	Laboratory Control Samples Meet Criteria Al = 130%. Fe = 162 %.	No.
5.	Preparation, Method and Calibration Blank Contamination If yes, list compounds and concentrations in each blank	✓
6.	Spike Sample Recoveries Meet Criteria 1046301	✓
7.	Duplicates Meet Criteria 1046301 Al = 23.5 %. Ca = 25.8 %. K = 63.7 %. Mg = 46.3 %	No.
8.	Analysis Holding Time Met If not met, list number of days exceeded for each sample	✓

Additional Comments Low chk Be = 167%. K = 135 %.

Analyst: [signature] Date: 11-23-10.

Administrative Review: [signature] Date: 12/1/10

FLAA/GFAA ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Lab ID: 10463
Method: ~~3112B~~ 7471B

Indicate Yes, No, N/A

1. Initial Calibration has a correlation coefficient of 0.995 or higher ✓

2. Initial and Continuing Calibration Verifications Meet Criteria ✓

3. Laboratory Control Samples Meet Criteria ✓

4. Preparation, Method and Calibration Blank Contamination ✓
If yes, list compounds and concentrations in each blank

5. Spike Sample Recoveries Meet Criteria ✓
1046301

6. Duplicates Meet Criteria ✓
1046301

7. Analysis Holding Time Met ✓
If not met, list number of days exceeded for each sample

8. Over range samples are diluted within the calibration. ✓
List samples that exceed high standard and are flagged with an "E" (estimate).

Additional Comments

Laboratory Manager: [signature] Date: 12/1/10

[signature] 11-23-10.

TAL METALS

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 10463
Sample Received: NA
Sample Matrix: Aqueous
Date Prepared: 11/12/10

Site: 108MW04

Field ID: Method Blank

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result (mg/L)	R.L. (mg/L)	MDL (mg/L)
Aluminum	11/16/10	ND	0.500	0.235
Antimony	11/16/10	ND	0.010	0.0047
Arsenic	11/16/10	ND	0.010	0.0078
Barium	11/16/10	ND	0.005	0.0017
Beryllium	11/16/10	ND	0.0005	0.00004
Cadmium	11/16/10	ND	0.002	0.0004
Calcium	11/16/10	ND	1.00	0.261
Chromium	11/16/10	ND	0.005	0.0012
Cobalt	11/16/10	ND	0.002	0.0004
Copper	11/16/10	ND	0.05	0.026
Iron	11/16/10	ND	1.00	0.349
Lead	11/16/10	ND	0.050	0.017
Magnesium	11/16/10	ND	1.00	0.113
Manganese	11/16/10	ND	0.005	0.0022
Mercury	11/10/10	ND	0.0005	0.0001
Nickel	11/16/10	ND	0.005	0.0013
Potassium	11/16/10	ND	1.00	0.331
Selenium	11/16/10	ND	0.050	0.018
Silver	11/16/10	ND	0.005	0.0008
Sodium	11/16/10	ND	5.00	1.27
Thallium	11/16/10	ND	0.010	0.0059
Vanadium	11/16/10	ND	0.005	0.0006
Zinc	11/16/10	ND	0.050	0.018

ND = Not Detected, NLE = No Limit Established,
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1046301
Sample Received: 10/27/10
Sample Matrix: Soil

Site: 108MW04

Field ID: 108MW04 (6.5-7.0')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/16/10	2540	78000	117.39	55.173
Antimony	11/16/10	ND	31	2.35	1.103
Arsenic	11/16/10	2.95	19	2.35	1.831
Barium	11/16/10	5.30	16000	1.17	0.399
Beryllium	11/16/10	0.292	16	0.12	0.009
Cadmium	11/16/10	0.609	78	0.47	0.094
Calcium	11/16/10	656	NLE	234.78	61.277
Chromium	11/16/10	17.7	NLE	1.17	0.282
Cobalt	11/16/10	0.766	1600	0.47	0.094
Copper	11/16/10	6.14	3100	11.74	6.104
Iron	11/16/10	6660	NLE	234.78	81.938
Lead	11/16/10	15.7	400	11.74	3.991
Magnesium	11/16/10	611	NLE	234.78	26.530
Manganese	11/16/10	9.49	11000	1.17	0.517
Mercury	11/10/10	0.021	23	0.11	0.021
Nickel	11/16/10	1.95	1600	1.17	0.305
Potassium	11/16/10	1200	NLE	234.78	77.712
Selenium	11/16/10	ND	390	11.74	4.226
Silver	11/16/10	0.664	390	1.17	0.188
Sodium	11/16/10	ND	NLE	1173.89	298.169
Thallium	11/16/10	ND	5	2.35	1.385
Vanadium	11/16/10	11.3	78	1.17	0.141
Zinc	11/16/10	12.9	23000	11.74	4.226

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D June 2, 2008
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1046302
Sample Received: 10/27/10
Sample Matrix: Soil

Site: 108MW04

Field ID: Field ID: 108MW04 (7.0-8.0')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/16/10	8110	78000	106.27	49.945
Antimony	11/16/10	1.38	31	2.13	0.999
Arsenic	11/16/10	15.1	19	2.13	1.658
Barium	11/16/10	16.5	16000	1.06	0.361
Beryllium	11/16/10	0.800	16	0.11	0.009
Cadmium	11/16/10	1.83	78	0.43	0.085
Calcium	11/16/10	1780	NLE	212.53	55.471
Chromium	11/16/10	65.0	NLE	1.06	0.255
Cobalt	11/16/10	1.66	1600	0.43	0.085
Copper	11/16/10	ND	3100	10.63	5.526
Iron	11/16/10	23500	NLE	212.53	74.174
Lead	11/16/10	16.5	400	10.63	3.613
Magnesium	11/16/10	2010	NLE	212.53	24.016
Manganese	11/16/10	23.0	11000	1.06	0.468
Mercury	11/10/10	0.025	23	0.120	0.023
Nickel	11/16/10	4.33	1600	1.06	0.276
Potassium	11/16/10	4030	NLE	212.53	70.348
Selenium	11/16/10	ND	390	10.63	3.826
Silver	11/16/10	1.85	390	1.06	0.170
Sodium	11/16/10	ND	NLE	1062.66	269.917
Thallium	11/16/10	ND	5	2.13	1.254
Vanadium	11/16/10	36.4	78	1.06	0.128
Zinc	11/16/10	28.6	23000	10.63	3.826

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D June 2, 2008
R.L. = Reporting limit, MDL = Method Detection Limit.
Estimated results between MDL & R.L.

WET CHEMISTRY

Accutest Laboratories

Report of Analysis

3.1
35

Client Sample ID:	1046301 108MW04 (6.5-7.0)		
Lab Sample ID:	JA61228-1	Date Sampled:	10/27/10
Matrix:	SO - Soil	Date Received:	11/10/10
		Percent Solids:	85.4
Project:	Building 482		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	85.4		%	1	11/18/10	JS	SM18 2540G
Total Organic Carbon [a]	558	120	mg/kg	1	11/12/10 15:17	SJG	LLOYD KAHN 1988

(a) Analyzed outside of hold time

RL = Reporting Limit

000013

Accutest Laboratories

Report of Analysis

Client Sample ID:	1046302 108MW04 (7.0-8.0)		
Lab Sample ID:	JA61228-2	**Date Sampled:**	10/27/10
Matrix:	SO - Soil	**Date Received:**	11/10/10
		Percent Solids:	89.9
Project:	Building 482		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	89.9		%	1	11/18/10	JS	SM18 2540G
Total Organic Carbon [a]	365	110	mg/kg	1	11/12/10 15:26	SJG	LLOYD KAHN 1988

(a) Analyzed outside of hold time

RL = Reporting Limit

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Site M2

Site/M2

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M2-MW13 (16.0-20.0')	1049201	Soil	16-Nov-10 14:00	11/16/10
M2-MW13 (8.0-12.0')	1049202	Soil	16-Nov-10 14:15	11/16/10

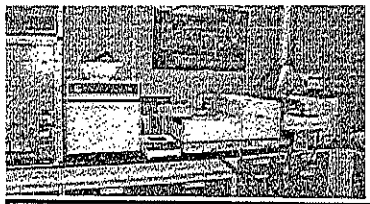
ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
TAL METALS, %SOLIDS

ACCUTEST LABORATORIES
TOC

Dean Tardiff/Date: 12/10/10
Laboratory Manager

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Telephone: (732) 532-4359; Fax (732) 532-6263; email: Dean.Tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Telephone: (732) 532-2692
( ) DERA ( ) OMA ( ) Other: _____

Project No:
Location: M-2

Sampler's Name / Company: John Montgomery

Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	ABN+25	Pest/PCBs	TAL Metals (1)	% Solids	Total Organic Carbon	Remarks/Preservation Method
10492 01	M2-MW13 (16-20')	11/16/10	1400	Soil	2				X		X	
02	M2-MW13 (8-12')	11/16/10	1415	Soil	2				X		X	

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	
Montgomery	11/16/10 1500				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	

Report Type: ( ) Full; (X) Reduced; ( ) Standard; ( ) Screen / non-certified; ( ) EDD
Turnaround time: (X) Standard 3 wks; ( ) Rush _____ wks; ( ) ASAP Verbal _____ hrs.

Comments:

print legibly

200102

SAMPLE RECEIPT FORM

Date Received: 11-16-10 Work Order ID#: 10492

Site/Proj. Name: MW Cooler Temp (°C): N/A

Received By: J. Hernandez Sign:
(Print name)

Check the appropriate box

1. Did the samples come in a cooler?	yes	no	n/a
2. Were samples rec'd in good condition?	yes	no	
3. Was the chain of custody filled out correctly and legibly?	yes	no	
4. Was the chain of custody signed in the appropriate place?	yes	no	
5. Did the labels agree with the chain of custody?	yes	no	
6. Were the correct containers/preservatives used?	yes	no	
7. Was a sufficient amount of sample supplied?	yes	no	
8. Were air bubbles present in VOA vials?	yes	no	n/a
9. Were samples received on ice?	yes	no	
10. Were analyze-immediately tests perform within 15 minutes	yes	no	n/a

Fill out the following table for each sample bottle

Lims ID	pH	Preservative	Sample ID	pH	Preservative

Comments: _____

TAL
METALS

(SOILS)

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 10492
Sample Received: NA
Sample Matrix: Aqueous
Date Prepared: 11/24/10

Site: M2

Field ID: Method Blank

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result (mg/L)	R.L. (mg/L)	MDL (mg/L)
Aluminum	11/30/01	0.590	0.500	0.235
Antimony	11/30/01	ND	0.010	0.0047
Arsenic	11/30/01	ND	0.010	0.0078
Barium	11/30/01	0.004	0.005	0.0017
Beryllium	11/30/01	ND	0.0005	0.00004
Cadmium	11/30/01	ND	0.002	0.0004
Calcium	11/30/01	0.380	1.00	0.261
Chromium	11/30/01	ND	0.005	0.0012
Cobalt	11/30/01	ND	0.002	0.0004
Copper	11/30/01	ND	0.05	0.026
Iron	11/30/01	ND	1.00	0.349
Lead	11/30/01	ND	0.050	0.017
Magnesium	11/30/01	ND	1.00	0.113
Manganese	11/30/01	ND	0.005	0.0022
Mercury	12/23/10	ND	0.0005	0.0001
Nickel	11/30/01	0.002	0.005	0.0013
Potassium	11/30/01	0.550	1.00	0.331
Selenium	11/30/01	ND	0.050	0.018
Silver	11/30/01	ND	0.005	0.0008
Sodium	11/30/01	ND	5.00	1.27
Thallium	11/30/01	ND	0.010	0.0059
Vanadium	11/30/01	ND	0.005	0.0006
Zinc	11/30/01	0.022	0.050	0.018

ND = Not Detected, NLE = No Limit Established,
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1049201
Sample Received: 11/16/10
Sample Matrix: Soil

Site: M2

Field ID: M2MW13 (16.0-20.0')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/30/01	11500	78000	108.46	50.974
Antimony	11/30/01	0.895	31	2.17	1.019
Arsenic	11/30/01	6.60	19	2.17	1.692
Barium	11/30/01	17.3	16000	1.08	0.369
Beryllium	11/30/01	2.09	16	0.11	0.009
Cadmium	11/30/01	3.63	78	0.43	0.087
Calcium	11/30/01	5130	NLE	216.91	56.614
Chromium	11/30/01	134	NLE	1.08	0.260
Cobalt	11/30/01	2.29	1600	0.43	0.087
Copper	11/30/01	ND	3100	10.85	5.640
Iron	11/30/01	53900	NLE	216.91	75.702
Lead	11/30/01	9.77	400	10.85	3.688
Magnesium	11/30/01	7250	NLE	216.91	24.511
Manganese	11/30/01	13.2	11000	1.08	0.477
Mercury	12/23/10	ND	23	0.11	0.023
Nickel	11/30/01	9.54	1600	1.08	0.282
Potassium	11/30/01	21600	NLE	216.91	71.798
Selenium	11/30/01	ND	390	10.85	3.904
Silver	11/30/01	14.0	390	1.08	0.174
Sodium	11/30/01	ND	NLE	1084.56	275.479
Thallium	11/30/01	ND	5	2.17	1.280
Vanadium	11/30/01	25.4	78	1.08	0.130
Zinc	11/30/01	67.4	23000	10.85	3.904

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D June 2, 2008
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1049202
Sample Received: 11/16/10
Sample Matrix: Soil

Site: M2

Field ID: Field ID: M2MW13 (8.0-12.0')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/30/01	9550	78000	192.48	90.466
Antimony	11/30/01	2.36	31	3.85	1.809
Arsenic	11/30/01	7.40	19	3.85	3.003
Barium	11/30/01	70.4	16000	1.92	0.654
Beryllium	11/30/01	1.66	16	0.19	0.015
Cadmium	11/30/01	2.33	78	0.77	0.154
Calcium	11/30/01	1490	NLE	384.96	100.475
Chromium	11/30/01	106	NLE	1.92	0.462
Cobalt	11/30/01	5.76	1600	0.77	0.154
Copper	11/30/01	ND	3100	19.25	10.009
Iron	11/30/01	25800	NLE	384.96	134.351
Lead	11/30/01	8.94	400	19.25	6.544
Magnesium	11/30/01	2970	NLE	384.96	43.500
Manganese	11/30/01	26.7	11000	1.92	0.847
Mercury	12/23/10	0.088	23	0.20	0.040
Nickel	11/30/01	15.0	1600	1.92	0.500
Potassium	11/30/01	4870	NLE	384.96	127.422
Selenium	11/30/01	ND	390	19.25	6.929
Silver	11/30/01	5:91	390	1.92	0.308
Sodium	11/30/01	ND	NLE	1924.80	488.899
Thallium	11/30/01	ND	5	3.85	2.271
Vanadium	11/30/01	44.8	78	1.92	0.231
Zinc	11/30/01	63.0	23000	19.25	6.929

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D June 2, 2008
R.L. = Reporting limit, MDL = Method Detection Limit.
Estimated results between MDL & R.L.

WET CHEMISTRY

Report of Analysis

Client Sample ID:	1049201 M2-MW13 (16-20')		
Lab Sample ID:	JA62105-1	Date Sampled:	11/16/10
Matrix:	SO - Soil	Date Received:	11/19/10
		Percent Solids:	79.0
Project:	M2		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	79		%	1	12/02/10	DK	SM18 2540G
Total Organic Carbon	762	130	mg/kg	1	11/22/10 15:36	SJG	LLOYD KAHN 1988

RL = Reporting Limit

Report of Analysis

Client Sample ID:	1049202 M2-MW13 (8-12')		
Lab Sample ID:	JA62105-2	Date Sampled:	11/16/10
Matrix:	SO - Soil	Date Received:	11/19/10
		Percent Solids:	42.2
Project:	M2		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	42.2		%	1	12/02/10	DD	SM18 2540G
Total Organic Carbon	87700	240	mg/kg	1	11/22/10 15:06	SJG	LLOYD KAHN 1988

RL = Reporting Limit

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Site 296

Site/296

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
296MW06 (3.5-4.0')	1047001	Soil	02-Nov-10 14:45	11/02/10
296MW06 (12.0-12.5')	1047002	Soil	02-Nov-10 15:00	11/02/10

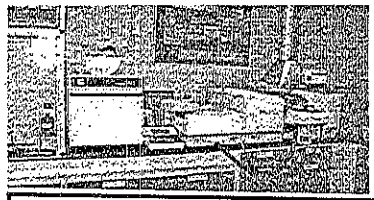
ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
TAL METALS, %SOLIDS

ACCUTEST LABORATORIES
TOC

Dean Tardiff/Date: 11/23/10
Laboratory Manager

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Telephone: (732) 532-4359; Fax (732) 532-6263; email: Dean.Tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Telephone: (732) 532-2692
( ) DERA ( ) OMA ( ) Other: _____

Project No: 10470
Location: Near 296MW06

Sampler's Name / Company: John Montgomery

Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	ABN+25	Pest/PCBs	TAL Metals	% Solids	Total organic carbon	Remarks/Preservation Method
10470 01	296MW06 (3.5-4')	11/2/2010	1445	Soil	1				X	X	X	
02	296MW06 (12-12.5')	11/2/2010	1500	Soil	1				X	X	X	

Analysis Parameters

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:
John Montgomery	11/2/10 1530			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:

Report Type: ( ) Full; (X) Reduced; ( ) Standard; ( ) Screen / non-certified; ( ) EDD
Turnaround time: (X) Standard 3 wks; ( ) Rush _____wks; ( ) ASAP Verbal ____hrs.

Comments:

200000

print legibly

SAMPLE RECEIPT FORM

Date Received: 11-2-10 Work Order ID#: 10470

Site/Proj. Name: Site 296 Cooler Temp (°C): ICE

Received By: J. Vergara Sign: J. Vergara
(Print name)

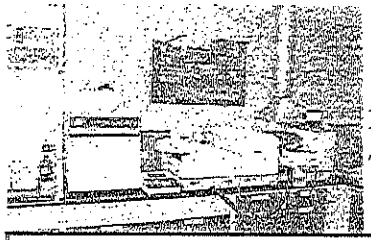
Check the appropriate box

1. Did the samples come in a cooler? yes no n/a
2. Were samples rec'd in good condition? yes no
3. Was the chain of custody filled out correctly and legibly? yes no
4. Was the chain of custody signed in the appropriate place? yes no
5. Did the labels agree with the chain of custody? yes no
6. Were the correct containers/preservatives used? yes no
7. Was a sufficient amount of sample supplied? yes no
8. Were air bubbles present in VOA vials? yes no n/a
9. Were samples received on ice? yes no
10. Were analyze-immediately tests perform within 15 minutes yes no n/a

Fill out the following table for each sample bottle

Lims ID	pH	Preservative	Sample ID	pH	Preservative

Comments:



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Dean Tardiff
Phone #: (732)532-6352
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Site 296

Samplers Name / Company:

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TOC								Comments: Remarks / Preservation Method
1047001	296MW06 (3.5-4.0')	11/2/2010	14:45	Soil	1	X								
1047002	296MW06 (12.0-12.5')	11/2/2010	15:00	Soil	1	X								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	11-10-10 1335	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush Wk., ( )ASAP Verbal ____Hrs.

Comments: PO C09-20650

000004

print legibly

Page ____ of ____

No Seal

COC xls11/3/2010

CONFORMANCE/ NON-CONFORMANCE SUMMARY

FLAA/GFAA ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Lab ID: 10470
Method: ~~3112B~~ 7471B

Indicate Yes, No, N/A

1. Initial Calibration has a correlation coefficient of 0.995 or higher ✓

2. Initial and Continuing Calibration Verifications Meet Criteria ✓

3. Laboratory Control Samples Meet Criteria ✓

4. Preparation, Method and Calibration Blank Contamination ✓
If yes, list compounds and concentrations in each blank

5. Spike Sample Recoveries Meet Criteria ✓
1046301

6. Duplicates Meet Criteria ✓
1046301

7. Analysis Holding Time Met ✓
If not met, list number of days exceeded for each sample

8. Over range samples are diluted within the calibration. ✓
List samples that exceed high standard and are flagged with an "E" (estimate).

Additional Comments

Laboratory Manager: [signature] Date: 11/23/10

[signature] 11-23-10.

METALS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Project: 10470
Method: 6010B

		Indicate Yes, No, N/A
1.	Initial and Continuing Calibration Verifications Meet Criteria CCV-2 TL = 88.75%.	✓
2.	ICP Interference Check Sample Results Meet Criteria	✓
3.	Serial Dilutions Meet Criteria 1046301	
4.	Laboratory Control Samples Meet Criteria Al = 130%. Fe = 162%.	No.
5.	Preparation, Method and Calibration Blank Contamination If yes, list compounds and concentrations in each blank	✓
6.	Spike Sample Recoveries Meet Criteria 1046301	✓
7.	Duplicates Meet Criteria 1046301 Al = 23.5%. Ca = 25.8%. K = 63.7%. Mg = 46.3%.	No.
8.	Analysis Holding Time Met If not met, list number of days exceeded for each sample	✓

Additional Comments Low chk Be = 167%. K = 135%.

Analyst: Akanksha Sandhu Date: 11-23-10.

Administrative Review: [signature] Date: 11/23/10

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 10470 **Site:** 296

	Date	Hold Time
Date Sampled	11/02/10	NA
Receipt/Refrigeration	11/02/10	NA

Analyses

1. TAL Metals	11/01/10	6 Months
2. Arsenic	11/16/10	6 Months
3. Thallium	11/16/10	6 Months
4. Selenium	11/16/10	6 Months
5. Mercury	10/16/10	28 Days
6. TOC	11/12/10	28 Days

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 10470
Sample Received: NA
Sample Matrix: Aqueous
Date Prepared: 11/12/10

Site: 296MW06

Field ID: Method Blank

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result (mg/L)	R.L. (mg/L)	MDL (mg/L)
Aluminum	11/16/10	ND	0.500	0.235
Antimony	11/16/10	ND	0.010	0.0047
Arsenic	11/16/10	ND	0.010	0.0078
Barium	11/16/10	ND	0.005	0.0017
Beryllium	11/16/10	ND	0.0005	0.00004
Cadmium	11/16/10	ND	0.002	0.0004
Calcium	11/16/10	ND	1.00	0.261
Chromium	11/16/10	ND	0.005	0.0012
Cobalt	11/16/10	ND	0.002	0.0004
Copper	11/16/10	ND	0.05	0.026
Iron	11/16/10	ND	1.00	0.349
Lead	11/16/10	ND	0.050	0.017
Magnesium	11/16/10	ND	1.00	0.113
Manganese	11/16/10	ND	0.005	0.0022
Mercury	11/10/10	ND	0.0005	0.0001
Nickel	11/16/10	ND	0.005	0.0013
Potassium	11/16/10	ND	1.00	0.331
Selenium	11/16/10	ND	0.050	0.018
Silver	11/16/10	ND	0.005	0.0008
Sodium	11/16/10	ND	5.00	1.27
Thallium	11/16/10	ND	0.010	0.0059
Vanadium	11/16/10	ND	0.005	0.0006
Zinc	11/16/10	ND	0.050	0.018

ND = Not Detected, NLE = No Limit Established,
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1047001
Sample Received: 11/02/10
Sample Matrix: Soil

Site: 296MW06

Field ID: 296MW06 (3.5-4')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/16/10	3560	78000	95.5	45.0
Antimony	11/16/10	3.00	31	1.91	0.898
Arsenic	11/16/10	5.02	19	1.91	1.49
Barium	11/16/10	3.67	16000	0.96	0.325
Beryllium	11/16/10	0.475	16	0.10	0.008
Cadmium	11/16/10	1.11	78	0.38	0.076
Calcium	11/16/10	573	NLE	191	50.0
Chromium	11/16/10	73.2	NLE	0.96	0.229
Cobalt	11/16/10	0.573	1600	0.38	0.076
Copper	11/16/10	ND	3100	9.55	4.97
Iron	11/16/10	14100	NLE	191	66.7
Lead	11/16/10	11.3	400	9.55	3.25
Magnesium	11/16/10	1160	NLE	191	21.6
Manganese	11/16/10	3.45	11000	0.96	0.420
Mercury	11/10/10	0.032	23	0.11	0.021
Nickel	11/16/10	1.92	1600	0.96	0.248
Potassium	11/16/10	3210	NLE	191	63.2
Selenium	11/16/10	ND	390	9.55	3.44
Silver	11/16/10	0.873	390	0.96	0.153
Sodium	11/16/10	ND	NLE	955	243
Thallium	11/16/10	ND	5	1.91	1.13
Vanadium	11/16/10	65.2	78	0.96	0.115
Zinc	11/16/10	13.4	23000	9.55	3.44

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D
R.L. = Reporting limit, MDL = Method Detection Limit
Estimated results between MDL & R.L.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1047002
Sample Received: 11/02/10
Sample Matrix: Soil

Site: 296MW06

Field ID: Field ID: 296MW06 (12 -12.5')

Method of Digestion: E.P.A SW-846, Method 3051A
Method of Analysis: EPA SW-846 Method 6010B, 7471A

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result (mg/kg)	Soil Cleanup Criteria (mg/kg)*	R.L. (mg/kg)	MDL (mg/kg)
Aluminum	11/16/10	4860	78000	107	50.4
Antimony	11/16/10	2.26	31	2.14	1.01
Arsenic	11/16/10	5.77	19	2.14	1.67
Barium	11/16/10	27.3	16000	1.07	0.365
Beryllium	11/16/10	0.768	16	0.11	0.009
Cadmium	11/16/10	1.65	78	0.43	0.086
Calcium	11/16/10	1030	NLE	214	56.0
Chromium	11/16/10	68.8	NLE	1.07	0.257
Cobalt	11/16/10	1.46	1600	0.43	0.086
Copper	11/16/10	3.31	3100	10.72	5.58
Iron	11/16/10	19600	NLE	214	75.0
Lead	11/16/10	11.7	400	10.72	3.65
Magnesium	11/16/10	2060	NLE	214	24.2
Manganese	11/16/10	17.3	11000	1.09	0.478
Mercury	11/10/10	0.043	23	0.11	0.021
Nickel	11/16/10	4.59	1600	1.07	0.279
Potassium	11/16/10	3950	NLE	214	71.0
Selenium	11/16/10	ND	390	10.72	3.86
Silver	11/16/10	1.71	390	1.07	0.172
Sodium	11/16/10	ND	NLE	1072	272
Thallium	11/16/10	ND	5	2.14	1.27
Vanadium	11/16/10	39.2	78	1.07	0.129
Zinc	11/16/10	27.2	23000	10.7	3.86

ND = Not Detected, NLE = No Limit Established, NA = Standard Not Available
* Residential Direct Contact Soil Remediation Standard as per N.J.A.C. 7:26D June 2, 2008
R.L. = Reporting limit, MDL = Method Detection Limit.
Estimated results between MDL & R.L.

WET CHEMISTRY

Accutest Laboratories

Report of Analysis

Client Sample ID:	1047001 296MW06 (3.5-4.0')		
Lab Sample ID:	JA61227-1	**Date Sampled:**	11/02/10
Matrix:	SO - Soil	**Date Received:**	11/10/10
		Percent Solids:	83.4
Project:	Site 296		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	83.4		%	1	11/18/10	DK	ASTM 4643-00
Total Organic Carbon	500	120	mg/kg	1	11/12/10 15:52	SJG	LLOYD KAHN 1988

RL = Reporting Limit

000014

Accutest Laboratories

Report of Analysis

Client Sample ID:	1047002 296MW06 (12.0-12.5')		
Lab Sample ID:	JA61227-2	**Date Sampled:**	11/02/10
Matrix:	SO - Soil	**Date Received:**	11/10/10
		Percent Solids:	81.8
Project:	Site 296		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	81.8		%	1	11/18/10	JS	SM18 2540G
Total Organic Carbon	1010	120	mg/kg	1	11/12/10 16:00	SJG	LLOYD KAHN 1988

RL = Reporting Limit

Attachment 6

Laboratory Analytical Reports – Groundwater

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Post Injections

Bldg./108

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
108MW04 (6.75')	1053501	Aqueous	08-Dec-10	12/08/10
108MW04 (7.5')	1053502	Aqueous	08-Dec-10	12/08/10

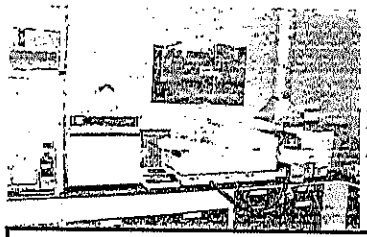
ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL TESTING LAB
TAL METALS

ACCUTEST LABORATORIES
TAL METALS

Dean Tardiff/Date: 3/1/11
Laboratory Manager

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joe Fallon
Phone #: 732-532-6223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: 108

Samplers Name / Company: Peter Hentschel / TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: Metals								Comments: Remarks / Preservation Method
10535 .01	108MW04 (6.75')	12/8/10	15:05	AQ	1	X								
↓ .02	108MW04 (7.5')	12/8/10	15:09	AQ	1	X								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	12/8/10 15:30	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]		[signature]			

Report Type: ( )Full, (X)Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush Wk., ( )ASAP Verbal ____Hrs.

Comments: Low Flow

print legibly

COC .xls10/23/2010

200002

SAMPLE RECEIPT FORM

Date Received: 12-8-10 Work Order ID#: 10535

Site/Proj. Name: Site 108 Cooler Temp (°C): 4.0a

Received By: J. Vergara Sign: J. Vergara
(Print name)

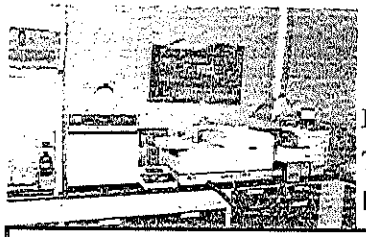
Check the appropriate box

1. Did the samples come in a cooler? yes no n/a
2. Were samples rec'd in good condition? yes no
3. Was the chain of custody filled out correctly and legibly? yes no
4. Was the chain of custody signed in the appropriate place? yes no
5. Did the labels agree with the chain of custody? yes no
6. Were the correct containers/preservatives used? yes no
7. Was a sufficient amount of sample supplied? yes no
8. Were air bubbles present in VOA vials? yes no n/a
9. Were samples received on ice? yes no
10. Were analyze-immediately tests perform within 15 minutes yes no n/a

Fill out the following table for each sample bottle

Lims ID	pH	Preservative	Sample ID	pH	Preservative
10535/1-2	<2	HNO3			

Comments:



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Dean Tardiff
Phone #: (732)532-6352
( )DERA ( )OMA ( )Other:_____

Project No:
Location: 108/LTM 4th QTR 10

Samplers Name / Company:

Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: MTAL								Comments: Remarks / Preservation Method
1053501	108MW04/6.75'	12/8/2010	15:05	AQ	1	X								
1053502	108MW04/7.5'	12/8/2010	15:09	AQ	1	X								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	2-5-11 1245	[signature] 12-2-10 15:11			
[signature]					
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 2 wks, (_)Rush Wk., _(_)ASAP Verbal ____Hrs.

Comments: **PO C09-20650/NO MERCURY NEEDED.**

print legibly

108 10535,TAL METALS.xls2/14/2011

108MW04 LTM LOW FLOW CHART

DATE SAMPLED: 12/08/10

TIME (24hr mil)	DTW (ft)	FLOW (ml)	pH (su)	TEMP (°c)	DO (mg/L)	SC (us/cm)	ORP (mv)	TURB (ntu)
14:20	4.19	380	7.2	15.5	3.2	28	1	45.6
14:25	4.51	380	7.3	14.9	3.2	28	37	56.7
14:30	4.70	380	7.3	15.0	3.2	28	53	87.4
14:35	4.95	380	7.3	14.9	3.3	28	55	22.9
14:40	5.2	380	7.3	15.0	3.3	28	63	29.7
14:45	5.42	380	7.3	14.8	3.3	28	61	57.2
14:50	5.56	380	7.4	14.8	3.3	28	70	50.9
14:55	5.60	380	7.3	14.9	3.3	28	73	15.0
15:00	5.62	380	7.3	14.9	3.4	28	69	15.8
Sampled @ 15:05								
15:12	5.65	40.3	7.3	15.0	3.3	28	66	15.7

US ARMY FORT MONMOUTH MONITOR WELL SAMPLING

LOCATION: 108
MW #: 04
NJDEP ID # 29-33762
NJDEP CERT. # 13461
SAMPLING CONTRACTOR: TECOM-VINNELL SERVICES
SAMPLER: PETE HENTSCHEL
DATE: 12/08/10
WEATHER: Sunny and cold.
TIDE: N/A

Sampling Conducted in Accordance with TVS SOP SAM-0205

Initial Readings:

Elevation of Casing Survey Mark:	4.09 ft
Depth of Well:	ft
Height of water in well:	ft
PID/FID Reading:	1.8 ppm
Gallons of Water to be Purged:	Gal.
Formula: ht.of water x (0.163 for 2" well or 0.65 for 4" well) x 3 =	
Purge Method: Peristaltic Pump/Other (Specify)	
Purge Rate: Not to Exceed Well Draw Down of 0.5'	Gal/Min.

Purge Data:

Start Time of Purging:
End Time of Purging:

	Initial Value	Pre-Sample	Post-Sample
pH:	su	su	su
Temperature:	(°C)	(°C)	(°C)
Specific Conductivity:	us/cm	us/cm	us/cm
ORP:	mv	mv	mv
DO:	mg/L	mg/L	mg/L
Depth to Water Post Purge:	ft		
Depth to Water Post Sampling:	ft		
Sampling Start Time:			
Sampling End Time:			

Comments:

000005

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 10535 **Site:** 108

	Date	Hold Time
Date Sampled	12/08/10	NA
Receipt/Refrigeration	12/08/10	NA

Analyses

1. TAL Metals	12/10/10	6 Months
2. Arsenic	12/13/10	6 Months
3. Thallium	12/15/10	6 Months
4. Selenium	12/14/10	6 Months
5. Mercury	12/14/10	28 Days
6. TAL Metals (Accutest)	02/22/11	6 Months

CONFORMANCE/ NON-CONFORMANCE SUMMARY

METALS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Project: 10535
Method: 3120B

		Indicate Yes, No, N/A
1.	Initial and Continuing Calibration Verifications Meet Criteria	✓
2.	ICP Interference Check Sample Results Meet Criteria ICSA - data reprocessed for Cd, Pb, Ag ICSAB - OK.	✓
3.	Serial Dilutions Meet Criteria 1053203 K= 52% - Nontarget Element	NO
4.	Laboratory Control Samples Meet Criteria BS120910-1	✓
5.	Preparation, Method and Calibration Blank Contamination If yes, list compounds and concentrations in each blank MB120910-1	✓
6.	Spike Sample Recoveries Meet Criteria 1053203	✓
7.	Duplicates Meet Criteria 1053203	✓
8.	Analysis Holding Time Met If not met, list number of days exceeded for each sample	

Additional Comments

Analyst: [signature] Date: 1-5-11
Administrative Review: [signature] Date: 3/1/11

FLAA/GFAA ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Lab ID: 10535
Method: 3112B

Indicate Yes, No, N/A

1. Initial Calibration has a correlation coefficient of 0.995 or higher ✓

2. Initial and Continuing Calibration Verifications Meet Criteria ✓

3. Laboratory Control Samples Meet Criteria ✓

4. Preparation, Method and Calibration Blank Contamination ✓
If yes, list compounds and concentrations in each blank

5. Spike Sample Recoveries Meet Criteria ✓
1053205

6. Duplicates Meet Criteria ✓
1053205

7. Analysis Holding Time Met ✓
If not met, list number of days exceeded for each sample

8. Over range samples are diluted within the calibration. N/A
List samples that exceed high standard and are flagged with an "E" (estimate).

Additional Comments

Laboratory Manager: [signature] Date: 3/1/11

[signature] 1/5/11

FLAA/GFAA ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Lab ID: 10535
Method: ~~3112B~~ 3113B/279.2

		Indicate Yes, No, N/A
1.	Initial Calibration has a correlation coefficient of 0.995 or higher	✓
2.	Initial and Continuing Calibration Verifications Meet Criteria	✓
3.	Laboratory Control Samples Meet Criteria	✓
4.	Preparation, Method and Calibration Blank Contamination If yes, list compounds and concentrations in each blank	✓
5.	Spike Sample Recoveries Meet Criteria 1053204 TL = 62.7 %	No
6.	Duplicates Meet Criteria 1053204	✓
7.	Analysis Holding Time Met If not met, list number of days exceeded for each sample	✓
8.	Over range samples are diluted within the calibration. List samples that exceed high standard and are flagged with an "E" (estimate).	✓

Additional Comments MS-MSD recovery for TL indicates Suspect matrix interference.

Laboratory Manager: [signature] Date: 5/1/11

[signature] 1/5/11

ACCUTEST LABORATORIES

2

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Fort Monmouth Environmental Testing Lab. **Job No** JA68238

Site: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, F **Report Date** 2/28/2011 4:57:04 PM

On 02/15/2011, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 4.8 C. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA68238 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010B

Matrix: AQ **Batch ID:** MP56902

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA68227-2MS, JA68227-2MSD, JA68227-2SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Zinc are outside control limits for sample MP56902-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP56902-SD1 for Nickel: Serial dilution indicates possible matrix interference.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

TAL METALS

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 10535
Sample Received: 12/08/10
Sample Matrix: Aqueous

Site: 108

Field ID#: Method Blank

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B
EPA Method 279.2

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	12/10/10	ND	200	100	13.0
Antimony	12/10/10	ND	6	10.00	4.70
Arsenic	12/13/10	ND	3	5.00	0.62
Barium	12/10/10	ND	6000	5.00	0.20
Beryllium	12/10/10	ND	1	0.500	0.40
Cadmium	12/10/10	ND	4	2.00	0.40
Calcium	12/10/10	ND	NLE	1000	93.0
Chromium	12/10/10	ND	70	5.00	0.60
Cobalt	12/10/10	ND	NLE	2.00	0.30
Copper	12/10/10	ND	1300	5.00	0.80
Iron	12/10/10	ND	300	500	132
Lead	12/10/10	ND	5	5.00	2.10
Magnesium	12/10/10	ND	NLE	1000	42.0
Manganese	12/10/10	ND	50	5.00	0.50
Mercury	12/14/10	ND	2	0.500	0.254
Nickel	12/10/10	ND	100	5.00	0.70
Potassium	12/10/10	338	NLE	1000	80.0
Selenium	12/14/10	1.49	40	20.0	1.36
Silver	12/10/10	ND	40	5.00	0.60
Sodium	12/10/10	ND	50000	5000	772
Thallium	12/15/10	0.92	2	5.00	0.53
Vanadium	12/10/10	ND	NLE	5.00	0.50
Zinc	12/10/10	ND	2000	50.00	2.50

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit
* Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C
R.L. = Reporting limit, Estimated results between MDL and R.L.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1053501
Sample Received: 12/08/10
Sample Matrix: Aqueous

Site: M-108

Field ID#: MW04 (6.75')

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B
EPA Method 279.2

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	12/10/10	1160	200	100	13.0
Antimony	12/10/10	ND	6	10.00	4.70
Arsenic	12/13/10	4.94	3	5.00	0.62
Barium	12/10/10	28.8	6000	5.00	0.20
Beryllium	12/10/10	ND	1	0.500	0.40
Cadmium	12/10/10	1.09	4	2.00	0.40
Calcium	12/10/10	45700	NLE	1000	93.0
Chromium	12/10/10	7.82	70	5.00	0.60
Cobalt	12/10/10	ND	NLE	2.00	0.30
Copper	12/10/10	16.8	1300	5.00	0.80
Iron	12/10/10	2930	300	500	132
Lead	12/10/10	8.76	5	5.00	2.10
Magnesium	12/10/10	2940	NLE	1000	42.0
Manganese	12/10/10	14.6	50	5.00	0.50
Mercury	12/14/10	ND	2	0.500	0.254
Nickel	12/10/10	4.04	100	5.00	0.70
Potassium	12/10/10	5530	NLE	1000	80.0
Selenium	12/14/10	2.35	40	20.0	1.36
Silver	12/10/10	ND	40	5.00	0.60
Sodium	12/10/10	7600	50000	5000	772
Thallium	12/15/10	ND	2	5.00	0.53
Vanadium	12/10/10	5.13	NLE	5.00	0.50
Zinc	12/10/10	49.6	2000	50.00	2.50

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit
* Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C
R.L. = Reporting limit, Estimated results between MDL and R.L.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 1053502
Sample Received: 12/08/10
Sample Matrix: Aqueous

Site: M-108

Field ID#: MW04 (7.5')

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B
EPA Method 279.2

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	12/10/10	3630	200	100	13.0
Antimony	12/10/10	5.48	6	10.00	4.70
Arsenic	12/13/10	8.77	3	5.00	0.62
Barium	12/10/10	39.4	6000	5.00	0.20
Beryllium	12/10/10	ND	1	0.500	0.40
Cadmium	12/10/10	1.35	4	2.00	0.40
Calcium	12/10/10	47200	NLE	1000	93.0
Chromium	12/10/10	23.0	70	5.00	0.60
Cobalt	12/10/10	1.14	NLE	2.00	0.30
Copper	12/10/10	48.6	1300	5.00	0.80
Iron	12/10/10	8180	300	500	132
Lead	12/10/10	26.0	5	5.00	2.10
Magnesium	12/10/10	3810	NLE	1000	42.0
Manganese	12/10/10	39.5	50	5.00	0.50
Mercury	12/14/10	ND	2	0.500	0.254
Nickel	12/10/10	7.64	100	5.00	0.70
Potassium	12/10/10	6270	NLE	1000	80.0
Selenium	12/14/10	1.80	40	20.0	1.36
Silver	12/10/10	ND	40	5.00	0.60
Sodium	12/10/10	7190	50000	5000	772
Thallium	12/15/10	ND	2	5.00	0.53
Vanadium	12/10/10	13.0	NLE	5.00	0.50
Zinc	12/10/10	118	2000	50.00	2.50

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit
* Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C
R.L. = Reporting limit, Estimated results between MDL and R.L.

TAL METALS

(ACCUTEST)

Report of Analysis

Client Sample ID:	1053501 108MW04/6.75'		
Lab Sample ID:	JA68238-1	Date Sampled:	12/08/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	1230	200	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Antimony	< 6.0	6.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Arsenic	3.3	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Barium	< 200	200	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Beryllium	< 1.0	1.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Cadmium	< 3.0	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Calcium	38700	5000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Chromium	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Cobalt	< 50	50	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Copper	18.7	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Iron	2770	100	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Lead	8.2	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Magnesium	< 5000	5000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Manganese	15.0	15	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Nickel	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Potassium	< 10000	10000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Selenium	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Silver	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Sodium	< 10000	10000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Thallium	< 2.0	2.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Vanadium	< 50	50	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Zinc	54.2	20	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA25856
(2) Prep QC Batch: MP56902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	1053502 108MW04/7.5'		
Lab Sample ID:	JA68238-2	Date Sampled:	12/08/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	3080	200	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Antimony	< 6.0	6.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Arsenic	5.7	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Barium	< 200	200	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Beryllium	< 1.0	1.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Cadmium	< 3.0	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Calcium	38800	5000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Chromium	18.6	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Cobalt	< 50	50	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Copper	43.3	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Iron	7220	100	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Lead	21.3	3.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Magnesium	< 5000	5000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Manganese	37.1	15	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Nickel	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Potassium	< 10000	10000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Selenium	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Silver	< 10	10	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Sodium	< 10000	10000	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Thallium	< 2.0	2.0	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Vanadium	< 50	50	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]
Zinc	111	20	ug/l	1	02/21/11	02/22/11	ND	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA25856
(2) Prep QC Batch: MP56902

RL = Reporting Limit

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Glauconitic Study

M-2/Building 296

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M2MW13 (10')	1053801	AQ	09-Dec-10 10:31	12/09/10
M2MW13 (18')	1053802	AQ	09-Dec-10 10:36	12/09/10
296MW06 (3.7')	1053803	AQ	09-Dec-10 11:41	12/09/10
296MW06 (12.25')	1053804	AQ	09-Dec-10 11:46	12/09/10

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
TAL Metals

ACCUTEST LABORATORIES
TAL Metals

Dean Tardiff/Date: 3/4/11
Laboratory Manager

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3113B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	279.3
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	6010B
Antimony	6010B
Arsenic	6010B
Barium	6010B
Beryllium	6010B
Cadmium	6010B
Calcium	6010B
Chromium	6010B
Cobalt	6010B
Copper	6010B
Iron	6010B
Lead	6010B
Magnesium	6010B
Manganese	6010B
Mercury	7470A
Nickel	6010B
Potassium	6010B
Selenium	6010B
Silver	6010B
Sodium	6010B
Thallium	6010B
Vanadium	6010B
Zinc	6010B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

Table of Contents

Section	Pages
Sampling	1-7
Conformance/Non-Conformance Summary	8-9A
Laboratory Chronicle	10-11
Metals	12
Analytical Results Summary	13-17
Metals (Accutest)	18
Accutest Sample Results Summary	19-22
Accutest Reduced Package	23-55
Mercury Results	55A-55B
Laboratory Deliverables Checklist	56
Laboratory Authentication Statement	57



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Dean Tardiff
Phone #: (732)532-6352
( )DERA ( )OMA ( )Other:_____

Project No:
Location: M2,296/LTM 4th QTR 10

Samplers Name / Company:

Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: METAL								Comments: Remarks / Preservation Method
1053801	M2MW13/10'	12/9/2010	10:31	AQ	1	X								
1053802	M2MW13/18'	12/9/2010	10:36	AQ	1	X								
1053803	296MW06/3.7'	12/9/2010	11:41	AQ	1	X								
1053804	296MW06/12.25'	12/9/2010	11:46	AQ	1	X								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	2-5-11 1245	[signature] 2-15-11			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 2 wks, ( )Rush Wk., _( )ASAP Verbal ___Hrs.

Comments: PO C09-20650/NO MERCURY NEEDED.

print legibly

M2,296 10538,TAL METALS.xls2/14/2011

00100334

ACCUTEST
LABORATORIES

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Fort Monmouth Environmental Testing Lab.	**Job No**	JA68258
Site:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, F	**Report Date**	3/1/2011 9:53:53 AM

On 02/15/2011, 4 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories at a temperature of 4.8 C. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA68258 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals By Method SW846 6010B

Matrix: AQ **Batch ID:** MP56904

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA68257-2MS, JA68257-2MSD, JA68257-2SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Chromium, Copper, Lead, Nickel, Vanadium, Zinc are outside control limits for sample MP56904-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Laboratory Chronicle

Lab ID: 10538 **Site:** M-2/296

	Date	Hold Time
Date Sampled	12/09/10	NA
Receipt/Refrigeration	12/09/10	NA

Analyses

1. TAL Metals	12/13/10	6 Months
2. TAL Metals (Accutest)	02/22/11	6 Months
3. Arsenic	12/16/10	6 Months
4. Thallium	12/15/10	6 Months
5. Selenium	12/17/10	6 Months
6. Mercury	12/16/10	28 Days

TAL METALS

(ACCUTEST)

Report of Analysis

Client Sample ID:	1053801 M2MW13/10'		
Lab Sample ID:	JA68258-1	Date Sampled:	12/09/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	<200	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Antimony	<6.0	6.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Arsenic	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Barium	<200	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Beryllium	<1.0	1.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cadmium	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Calcium	34300	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Chromium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cobalt	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Copper	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Iron	39800	100	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Lead	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Magnesium	6710	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Manganese	177	15	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Nickel	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Potassium	<10000	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Selenium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Silver	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Sodium	56100	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Thallium	<2.0	2.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Vanadium	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Zinc	37.3	20	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA25860
(2) Prep QC Batch: MP56904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	1053802 M2MW13/18'		
Lab Sample ID:	JA68258-2	Date Sampled:	12/09/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	<200	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Antimony	<6.0	6.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Arsenic	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Barium	<200	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Beryllium	<1.0	1.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cadmium	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Calcium	34600	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Chromium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cobalt	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Copper	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Iron	41400	100	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Lead	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Magnesium	6940	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Manganese	183	15	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Nickel	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Potassium	<10000	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Selenium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Silver	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Sodium	57900	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Thallium	<2.0	2.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Vanadium	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Zinc	21.7	20	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA25860
(2) Prep QC Batch: MP56904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	1053803 296MW06/3.7'		
Lab Sample ID:	JA68258-3	Date Sampled:	12/09/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	452	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Antimony	<6.0	6.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Arsenic	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Barium	329	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Beryllium	<1.0	1.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Cadmium	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Calcium	358000	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Chromium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Cobalt	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Copper	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Iron	96500	100	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Lead	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Magnesium	146000	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Manganese	2760	15	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Nickel	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Potassium	19800	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Selenium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Silver	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Sodium	665000	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Thallium	<2.0	2.0	ug/l	1	02/21/11	02/23/11	VC	SW846 6010B [2]	SW846 3010A [3]
Vanadium	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]
Zinc	<20	20	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA25860
(2) Instrument QC Batch: MA25866
(3) Prep QC Batch: MP56904

RL = Reporting Limit

Report of Analysis

Client Sample ID:	1053804 296MW06/12.25'		
Lab Sample ID:	JA68258-4	Date Sampled:	12/09/10
Matrix:	AQ - Ground Water	Date Received:	02/15/11
		Percent Solids:	n/a
Project:	Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	326	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Antimony	<6.0	6.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Arsenic	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Barium	262	200	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Beryllium	<1.0	1.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cadmium	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Calcium	311000	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Chromium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Cobalt	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Copper	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Iron	78100	100	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Lead	<3.0	3.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Magnesium	126000	5000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Manganese	2420	15	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Nickel	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Potassium	17300	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Selenium	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Silver	<10	10	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Sodium	576000	10000	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Thallium	<2.0	2.0	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Vanadium	<50	50	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]
Zinc	<20	20	ug/l	1	02/21/11	02/22/11	GT	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA25860
(2) Prep QC Batch: MP56904

RL = Reporting Limit

TAL METALS REDUCED PACKAGE

(ACCUTEST)

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SBLFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	11:26 ICB1 raw	final	11:43 CCB2 raw	final	12:07 CCB3 raw	final	13:16 CCB4 raw	final
Aluminum	200	2.5	-4.4	<200	-3.8	<200	13.8	<200	-3.7	<200
Antimony	6.0	1.2	-0.30	<6.0	-0.30	<6.0	0.0	<6.0	-0.10	<6.0
Arsenic	3.0	1.2	0.50	<3.0	0.10	<3.0	0.40	<3.0	0.40	<3.0
Barium	200	.2	0.10	<200	0.10	<200	-0.30	<200	-0.20	<200
Beryllium	1.0	.2	0.10	<1.0	0.20	<1.0	-0.20	<1.0	-0.20	<1.0
Boron	100	.8								
Cadmium	3.0	.2	0.0	<3.0	0.10	<3.0	0.0	<3.0	-0.10	<3.0
Calcium	5000	11	-0.40	<5000	3.2	<5000	13.0	<5000	7.4	<5000
Chromium	10	.3	-0.10	<10	-0.10	<10	-0.20	<10	-0.20	<10
Cobalt	50	.3	0.0	<50	0.0	<50	0.0	<50	-0.10	<50
Copper	10	.3	0.10	<10	0.0	<10	0.10	<10	-0.10	<10
Iron	100	2	-0.50	<100	1.5	<100	2.6	<100	-2.8	<100
Lead	3.0	.9	0.40	<3.0	0.0	<3.0	0.20	<3.0	0.0	<3.0
Magnesium	5000	13	-6.7	<5000	-14	<5000	9.1	<5000	-11	<5000
Manganese	15	.2	0.0	<15	0.0	<15	-0.20	<15	-0.10	<15
Molybdenum	20	.7								
Nickel	10	.3	-0.10	<10	-0.10	<10	-0.30	<10	-0.20	<10
Palladium	50	1.1								
Potassium	10000	15	-8.8	<10000	15.9	<10000	3.7	<10000	24.2	<10000
Selenium	10	1.6	-0.10	<10	-0.40	<10	0.30	<10	-0.40	<10
Silicon	200	5.2								
Silver	10	.3	-0.10	<10	0.0	<10	0.0	<10	-0.10	<10
Sodium	10000	7.9	2.9	<10000	4.0	<10000	3.2	<10000	109	<10000
Strontium	10	.1								
Thallium	2.0	1.3	0.60	<2.0	0.90	<2.0	0.90	<2.0	0.30	<2.0
Tin	10	.3								
Titanium	10	.3								
Tungsten	50	11								
Vanadium	50	.2	0.0	<50	0.10	<50	-0.10	<50	-0.20	<50
Zinc	20	2.8	-0.40	<20	-0.30	<20	-0.40	<20	-0.40	<20
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

5.1.2

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	14:31 CCB5 raw	final	15:40 CCB6 raw	final	16:24 CCB7 raw	final	16:50 CCB8 raw	final
Aluminum	200	2.5	-3.9	<200	-10	<200	-8.5	<200	15.9	<200
Antimony	6.0	1.2	-0.50	<6.0	-0.10	<6.0	-0.20	<6.0	-0.20	<6.0
Arsenic	3.0	1.2	0.50	<3.0	0.10	<3.0	0.50	<3.0	0.40	<3.0
Barium	200	.2	-0.30	<200	-0.20	<200	-0.40	<200	-0.20	<200
Beryllium	1.0	.2	-0.20	<1.0	-0.20	<1.0	-0.40	<1.0	-0.20	<1.0
Boron	100	.8								
Cadmium	3.0	.2	-0.10	<3.0	-0.10	<3.0	-0.10	<3.0	0.10	<3.0
Calcium	5000	11	-2.4	<5000	-1.2	<5000	-4.3	<5000	17.1	<5000
Chromium	10	.3	-0.30	<10	0.10	<10	-0.20	<10	0.10	<10
Cobalt	50	.3	0.0	<50	-0.10	<50	0.0	<50	-0.10	<50
Copper	10	.3	-0.30	<10	-0.40	<10	-0.40	<10	-0.30	<10
Iron	100	2	-5.7	<100	-4.6	<100	-7.7	<100	4.2	<100
Lead	3.0	.9	-0.40	<3.0	0.60	<3.0	0.20	<3.0	0.0	<3.0
Magnesium	5000	13	-19	<5000	-14	<5000	-19	<5000	9.5	<5000
Manganese	15	.2	-0.20	<15	-0.10	<15	-0.30	<15	-0.10	<15
Molybdenum	20	.7								
Nickel	10	.3	-0.10	<10	-0.20	<10	-0.30	<10	-0.20	<10
Palladium	50	1.1								
Potassium	10000	15	10.0	<10000	19.6	<10000	-11	<10000	-2.5	<10000
Selenium	10	1.6	-0.20	<10	0.20	<10	0.20	<10	0.60	<10
Silicon	200	5.2								
Silver	10	.3	-0.20	<10	-0.10	<10	-0.20	<10	0.0	<10
Sodium	10000	7.9	34.8	<10000	49.0	<10000	14.8	<10000	17.7	<10000
Strontium	10	.1								
Thallium	2.0	1.3	0.50	<2.0	0.60	<2.0	-0.10	<2.0	1.0	<2.0
Tin	10	.3								
Titanium	10	.3								
Tungsten	50	11								
Vanadium	50	.2	0.0	<50	-0.10	<50	-0.10	<50	0.10	<50
Zinc	20	2.8	-0.40	<20	-0.60	<20	-0.50	<20	-0.40	<20
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	18:05 CCB9 raw	final	19:21 CCB10 raw	final	20:30 CCB11 raw	final	21:44 CCB12 raw	final
Aluminum	200	2.5	4.4	<200	3.3	<200	5.5	<200	17.3	<200
Antimony	6.0	1.2	0.10	<6.0	0.10	<6.0	0.70	<6.0	-0.20	<6.0
Arsenic	3.0	1.2	-0.10	<3.0	0.50	<3.0	0.70	<3.0	0.30	<3.0
Barium	200	.2	0.10	<200	0.20	<200	0.40	<200	0.20	<200
Beryllium	1.0	.2	0.0	<1.0	0.10	<1.0	0.20	<1.0	0.10	<1.0
Boron	100	.8								
Cadmium	3.0	.2	0.0	<3.0	0.10	<3.0	-0.10	<3.0	0.0	<3.0
Calcium	5000	11	9.9	<5000	22.3	<5000	16.6	<5000	6.2	<5000
Chromium	10	.3	-0.20	<10	0.0	<10	0.0	<10	0.0	<10
Cobalt	50	.3	-0.10	<50	0.20	<50	-0.10	<50	-0.10	<50
Copper	10	.3	-0.50	<10	-0.10	<10	-0.20	<10	0.10	<10
Iron	100	2	4.3	<100	12.7	<100*(a)	10.4	<100*(a)	29.2	<100*(b)
Lead	3.0	.9	-0.30	<3.0	-0.50	<3.0	0.10	<3.0	0.20	<3.0
Magnesium	5000	13	-4.2	<5000	4.9	<5000	-0.90	<5000	2.0	<5000
Manganese	15	.2	0.0	<15	0.20	<15	0.10	<15	0.10	<15
Molybdenum	20	.7								
Nickel	10	.3	-0.20	<10	0.0	<10	0.0	<10	-0.20	<10
Palladium	50	1.1								
Potassium	10000	15	12.4	<10000	3.5	<10000	28.0	<10000	22.5	<10000
Selenium	10	1.6	-0.20	<10	-0.10	<10	0.0	<10	0.10	<10
Silicon	200	5.2								
Silver	10	.3	-0.20	<10	-0.10	<10	-0.10	<10	-0.10	<10
Sodium	10000	7.9	58.4	<10000	54.5	<10000	306	<10000	42.4	<10000
Strontium	10	.1								
Thallium	2.0	1.3	0.10	<2.0	0.50	<2.0	0.80	<2.0	0.90	<2.0
Tin	10	.3								
Titanium	10	.3								
Tungsten	50	11								
Vanadium	50	.2	0.0	<50	0.10	<50	0.10	<50	0.0	<50
Zinc	20	2.8	-0.60	<20	-0.30	<20	-0.40	<20	-0.40	<20
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested
(a) <1/10 of the action limit for this element.
(b) All reported results <RL or >100x CCB value.

5.1.2

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	22:59 CCB13 raw	final	00:07 CCB14 raw	final	00:33 CCB15 raw	final
Aluminum	200	2.5	-2.7	<200	8.4	<200	81.9	<200*(b)
Antimony	6.0	1.2	0.0	<6.0	0.60	<500	0.10	<500
Arsenic	3.0	1.2	0.40	<3.0	0.60	<500	0.60	<500
Barium	200	.2	-0.20	<200	0.60	<1000	0.60	<1000
Beryllium	1.0	.2	-0.20	<1.0	0.70	<5.0	0.70	<5.0
Boron	100	.8						
Cadmium	3.0	.2	-0.10	<3.0	0.10	<5.0	0.20	<5.0
Calcium	5000	11	-2.8	<5000	14.0	<5000	86.3	<5000
Chromium	10	.3	-0.20	<10	0.40	<10	0.60	<10
Cobalt	50	.3	-0.10	<50	0.20	<50	0.20	<50
Copper	10	.3	-0.20	<10	0.40	<25	0.30	<25
Iron	100	2	-1.6	<100	14.5	<100*(a)	44.4	<100*(b)
Lead	3.0	.9	0.60	<3.0	-0.30	<500	0.10	<500
Magnesium	5000	13	-15	<5000	2.5	<5000	88.3	<5000
Manganese	15	.2	-0.20	<15	0.40	<15	0.60	<15
Molybdenum	20	.7						
Nickel	10	.3	-0.40	<10	0.10	<40	0.0	<40
Palladium	50	1.1						
Potassium	10000	15	-0.80	<10000	26.4	<10000	16.1	<10000
Selenium	10	1.6	0.70	<10	0.10	<500	0.10	<500
Silicon	200	5.2						
Silver	10	.3	-0.10	<10	0.10	<10	0.10	<10
Sodium	10000	7.9	12.5	<10000	23.5	<10000	26.0	<10000
Strontium	10	.1						
Thallium	2.0	1.3	0.50	<2.0	0.50	<500	1.0	<500
Tin	10	.3						
Titanium	10	.3						
Tungsten	50	11						
Vanadium	50	.2	-0.20	<50	0.40	<50	0.50	<50
Zinc	20	2.8	-0.50	<20	-0.30	<20	-0.30	<20
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested
(a) <1/10 of the action limit for this element.
(b) All reported results <RL or >100x CCB value.

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time:		11:32	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	40000	39100	97.8
Antimony	2000	1990	99.5
Arsenic	2000	1990	99.5
Barium	2000	2000	100.0
Beryllium	2000	2020	101.0
Boron			
Cadmium	2000	1990	99.5
Calcium	40000	39900	99.8
Chromium	2000	2010	100.5
Cobalt	2000	2030	101.5
Copper	2000	1950	97.5
Iron	40000	40300	100.8
Lead	2000	1990	99.5
Magnesium	40000	39400	98.5
Manganese	2000	2050	102.5
Molybdenum			
Nickel	2000	2000	100.0
Palladium			
Potassium	40000	39000	97.5
Selenium	2000	1990	99.5
Silicon			
Silver	250	240	96.0
Sodium	40000	39400	98.5
Strontium			
Thallium	2000	2020	101.0
Tin			
Titanium			
Tungsten			
Vanadium	2000	1970	98.5
Zinc	2000	2030	101.5
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

5.1.3

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time:		11:17			12:01			13:10	
Sample ID:	ICV	ICV1		CCV	CCV2		CCV	CCV3	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	5000	4880	97.6	40000	39400	98.5	40000	39700	99.3
Antimony	1000	1010	101.0	2000	1990	99.5	2000	2000	100.0
Arsenic	1000	1010	101.0	2000	2000	100.0	2000	2000	100.0
Barium	1000	992	99.2	2000	2010	100.5	2000	2020	101.0
Beryllium	1000	1020	102.0	2000	2030	101.5	2000	2050	102.5
Boron									
Cadmium	1000	1000	100.0	2000	2000	100.0	2000	2010	100.5
Calcium	5000	4900	98.0	40000	40000	100.0	40000	40600	101.5
Chromium	1000	1030	103.0	2000	2040	102.0	2000	2050	102.5
Cobalt	1000	1050	105.0	2000	2040	102.0	2000	2050	102.5
Copper	1000	1000	100.0	2000	2000	100.0	2000	1970	98.5
Iron	5000	5110	102.2	40000	40300	100.8	40000	40700	101.8
Lead	1000	1000	100.0	2000	2000	100.0	2000	2010	100.5
Magnesium	5000	4780	95.6	40000	39500	98.8	40000	40200	100.5
Manganese	1000	1070	107.0*(a	2000	2090	104.5	2000	2100	105.0
Molybdenum									
Nickel	1000	1000	100.0	2000	2010	100.5	2000	2010	100.5
Palladium									
Potassium	10000	10200	102.0	40000	39200	98.0	40000	39600	99.0
Selenium	1000	990	99.0	2000	2000	100.0	2000	2000	100.0
Silicon									
Silver	500	505	101.0	250	245	98.0	250	242	96.8
Sodium	10000	9760	97.6	40000	39500	98.8	40000	39600	99.0
Strontium									
Thallium	1000	1020	102.0	2000	2030	101.5	2000	2030	101.5
Tin									
Titanium									
Tungsten									
Vanadium	1000	1020	102.0	2000	2010	100.5	2000	2010	100.5
Zinc	1000	1050	105.0	2000	2040	102.0	2000	2060	103.0
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested
(a) Within 90 to 110 percent limits required for SW846 6010. No EPA 200.7 samples reported for this element in the area bracketed by this QC.

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time:		14:25			15:34			16:18	
Sample ID:	CCV	CCV4		CCV	CCV5		CCV	CCV6	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	40000	39600	99.0	40000	39500	98.8	40000	40400	101.0
Antimony	2000	2010	100.5	2000	2000	100.0	2000	1990	99.5
Arsenic	2000	2020	101.0	2000	2020	101.0	2000	2000	100.0
Barium	2000	2020	101.0	2000	2020	101.0	2000	2040	102.0
Beryllium	2000	2070	103.5	2000	2070	103.5	2000	2090	104.5
Boron									
Cadmium	2000	2030	101.5	2000	2030	101.5	2000	2020	101.0
Calcium	40000	41000	102.5	40000	41100	102.8	40000	41600	104.0
Chromium	2000	2040	102.0	2000	2070	103.5	2000	2070	103.5
Cobalt	2000	2070	103.5	2000	2070	103.5	2000	2050	102.5
Copper	2000	1980	99.0	2000	1980	99.0	2000	1990	99.5
Iron	40000	40900	102.3	40000	40900	102.3	40000	41200	103.0
Lead	2000	2020	101.0	2000	2030	101.5	2000	2020	101.0
Magnesium	40000	40400	101.0	40000	40400	101.0	40000	41000	102.5
Manganese	2000	2110	105.5	2000	2130	106.5	2000	2130	106.5
Molybdenum									
Nickel	2000	2020	101.0	2000	2030	101.5	2000	2020	101.0
Palladium									
Potassium	40000	39600	99.0	40000	39500	98.8	40000	40200	100.5
Selenium	2000	2020	101.0	2000	2010	100.5	2000	2000	100.0
Silicon									
Silver	250	243	97.2	250	245	98.0	250	245	98.0
Sodium	40000	39700	99.3	40000	39700	99.3	40000	39900	99.8
Strontium									
Thallium	2000	2040	102.0	2000	2050	102.5	2000	2040	102.0
Tin									
Titanium									
Tungsten									
Vanadium	2000	2010	100.5	2000	2020	101.0	2000	2030	101.5
Zinc	2000	2090	104.5	2000	2100	105.0	2000	2090	104.5
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

5.1.4 (6)

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time:		16:44			17:59			19:15	
Sample ID:	CCV	CCV7		CCV	CCV8		CCV	CCV9	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	40000	39500	98.8	40000	40100	100.3	40000	40200	100.5
Antimony	2000	2000	100.0	2000	1990	99.5	2000	2010	100.5
Arsenic	2000	2020	101.0	2000	2010	100.5	2000	2020	101.0
Barium	2000	2020	101.0	2000	2030	101.5	2000	2040	102.0
Beryllium	2000	2070	103.5	2000	2080	104.0	2000	2080	104.0
Boron									
Cadmium	2000	2030	101.5	2000	2030	101.5	2000	2040	102.0
Calcium	40000	41200	103.0	40000	41600	104.0	40000	41400	103.5
Chromium	2000	2080	104.0	2000	2090	104.5	2000	2090	104.5
Cobalt	2000	2070	103.5	2000	2070	103.5	2000	2070	103.5
Copper	2000	2000	100.0	2000	2000	100.0	2000	2000	100.0
Iron	40000	41000	102.5	40000	41400	103.5	40000	41300	103.3
Lead	2000	2030	101.5	2000	2050	102.5	2000	2060	103.0
Magnesium	40000	40600	101.5	40000	41000	102.5	40000	40800	102.0
Manganese	2000	2130	106.5	2000	2130	106.5	2000	2130	106.5
Molybdenum									
Nickel	2000	2030	101.5	2000	2060	103.0	2000	2070	103.5
Palladium									
Potassium	40000	39400	98.5	40000	40000	100.0	40000	40000	100.0
Selenium	2000	2010	100.5	2000	2000	100.0	2000	2010	100.5
Silicon									
Silver	250	248	99.2	250	248	99.2	250	248	99.2
Sodium	40000	39700	99.3	40000	40000	100.0	40000	40100	100.3
Strontium									
Thallium	2000	2050	102.5	2000	2060	103.0	2000	2080	104.0
Tin									
Titanium									
Tungsten									
Vanadium	2000	2030	101.5	2000	2040	102.0	2000	2040	102.0
Zinc	2000	2100	105.0	2000	2100	105.0	2000	2110	105.5
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

5.1.4
5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	CCV True	20:24 CCV10 Results	% Rec	CCV True	21:38 CCV11 Results	% Rec	CCV True	22:53 CCV12 Results	% Rec
Aluminum	40000	40400	101.0	40000	40400	101.0	40000	40900	102.3
Antimony	2000	2010	100.5	2000	2020	101.0	2000	2020	101.0
Arsenic	2000	2020	101.0	2000	2030	101.5	2000	2020	101.0
Barium	2000	2060	103.0	2000	2060	103.0	2000	2070	103.5
Beryllium	2000	2090	104.5	2000	2090	104.5	2000	2100	105.0
Boron									
Cadmium	2000	2040	102.0	2000	2050	102.5	2000	2040	102.0
Calcium	40000	41500	103.8	40000	41600	104.0	40000	41900	104.8
Chromium	2000	2110	105.5	2000	2120	106.0	2000	2120	106.0
Cobalt	2000	2080	104.0	2000	2080	104.0	2000	2080	104.0
Copper	2000	2030	101.5	2000	2040	102.0	2000	2020	101.0
Iron	40000	41500	103.8	40000	41800	104.5	40000	42000	105.0
Lead	2000	2070	103.5	2000	2080	104.0	2000	2090	104.5
Magnesium	40000	41000	102.5	40000	41200	103.0	40000	41600	104.0
Manganese	2000	2150	107.5	2000	2140	107.0	2000	2140	107.0
Molybdenum									
Nickel	2000	2080	104.0	2000	2100	105.0	2000	2110	105.5
Palladium									
Potassium	40000	40300	100.8	40000	40300	100.8	40000	40700	101.8
Selenium	2000	2010	100.5	2000	2020	101.0	2000	2020	101.0
Silicon									
Silver	250	252	100.8	250	252	100.8	250	252	100.8
Sodium	40000	40500	101.3	40000	40800	102.0	40000	40800	102.0
Strontium									
Thallium	2000	2090	104.5	2000	2100	105.0	2000	2110	105.5
Tin									
Titanium									
Tungsten									
Vanadium	2000	2070	103.5	2000	2070	103.5	2000	2080	104.0
Zinc	2000	2110.	105.5	2000	2110	105.5	2000	2110	105.5
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

5.1.4

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	CCV True	00:01 CCV13 Results	% Rec	CCV True	00:27 CCV14 Results	% Rec
Aluminum	40000	40800	102.0	40000	41600	104.0
Antimony	2000	2030	101.5	2000	2020	101.0
Arsenic	2000	2040	102.0	2000	2040	102.0
Barium	2000	2070	103.5	2000	2080	104.0
Beryllium	2000	2120	106.0	2000	2150	107.5
Boron						
Cadmium	2000	2060	103.0	2000	2060	103.0
Calcium	40000	42300	105.8	40000	43200	108.0
Chromium	2000	2150	107.5	2000	2140	107.0
Cobalt	2000	2100	105.0	2000	2100	105.0
Copper	2000	2030	101.5	2000	2010	100.5
Iron	40000	42400	106.0	40000	43000	107.5
Lead	2000	2110	105.5	2000	2120	106.0
Magnesium	40000	42000	105.0	40000	42900	107.3
Manganese	2000	2170	108.5	2000	2160	108.0
Molybdenum						
Nickel	2000	2130	106.5	2000	2140	107.0
Palladium						
Potassium	40000	40700	101.8	40000	41100	102.8
Selenium	2000	2030	101.5	2000	2030	101.5
Silicon						
Silver	250	253	101.2	250	251	100.4
Sodium	40000	41000	102.5	40000	41200	103.0
Strontium						
Thallium	2000	2130	106.5	2000	2140	107.0
Tin						
Titanium						
Tungsten						
Vanadium	2000	2100	105.0	2000	2080	104.0
Zinc	2000	2130	106.5	2000	2140	107.0
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

5.1.4

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 50 to 150 % Recovery Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	11:04 CRI1 Results	% Rec	11:10 CRID1 Results	% Rec
Aluminum	200		100	200	100.0	95.4	95.4
Antimony	6.0		3.0	6.2	103.3	3.1	103.3
Arsenic	8.0	3.0	3.0	8.6	107.5	3.4	113.3
Barium	200		4.0	202	101.0	3.9	97.5
Beryllium	2.0	1.0	1.0	1.9	95.0	0.80	80.0
Boron	100		10				
Cadmium	3.0		1.0	3.0	100.0	1.0	100.0
Calcium	5000		1000	5080	101.6	1040	104.0
Chromium	10		2.0	10.0	100.0	2.1	105.0
Cobalt	50		3.0	52.4	104.8	2.8	93.3
Copper	10		2.0	9.3	93.0	1.9	95.0
Iron	100			117	117.0		
Lead	3.0		2.5	3.5	116.7	2.4	96.0
Magnesium	5000		100	4840	96.8	79.0	79.0
Manganese	15		3.0	16.5	110.0	3.3	110.0
Molybdenum	20						
Nickel	10		4.0	10.3	103.0	4.3	107.5
Palladium	50						
Potassium	10000		2000	9800	98.0	1980	99.0
Selenium	10		5.0	9.8	98.0	4.8	96.0
Silicon	200						
Silver	5.0		1.0	4.9	98.0	0.90	90.0
Sodium	10000		1000	9760	97.6	1010	101.0
Strontium	10						
Thallium	10	2.0	2.0	10.9	109.0	1.3	65.0
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0	51.0	102.0	1.9	95.0
Zinc	20		10	21.9	109.5	10.6	106.0
Zirconium	10	10	5.0				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 80 to 120 % Recovery Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	ICSA True	ICSAB True	11:48 ICSA1 Results	% Rec	11:55 ICSAB1 Results	% Rec	16:31 ICSA2 Results	% Rec	16:37 ICSAB2 Results	% Rec
Aluminum	500000	500000	493000	98.6	505000	101.0	504000	100.8	518000	103.6
Antimony		1000	2.3		1050	105.0	3.4		1060	106.0
Arsenic		1000	2.6		1020	102.0	2.3		1040	104.0
Barium		500	-4.5		515	103.0	-4.5		525	105.0
Beryllium		500	-0.30		492	98.4	-0.30		507	101.4
Boron			-1.2		9.3		-1.2		8.6	
Cadmium		1000	0.10		1050	105.0	0.10		1070	107.0
Calcium	400000	400000	378000	94.5	377000	94.3	387000	96.8	394000	98.5
Chromium		500	0.50		497	99.4	0.60		512	102.4
Cobalt		500	1.0		468	93.6	1.1		478	95.6
Copper		500	0.10		533	106.6	0.0		539	107.8
Iron	200000	200000	177000	88.5	182000	91.0	180000	90.0	187000	93.5
Lead		1000	0.10		993	99.3	-1.0		1020	102.0
Magnesium	500000	500000	515000	103.0	515000	103.0	527000	105.4	536000	107.2
Manganese		500	-1.7		493	98.6	-1.7		511	102.2
Molybdenum		500	2.4		513	102.6	2.8		524	104.8
Nickel		1000	1.4		984	98.4	1.3		1010	101.0
Palladium		500	-7.1		543	108.6	-3.5		553	110.6
Potassium			-35		-31		-37		-54	
Selenium		1000	0.60		998	99.8	-0.80		1010	101.0
Silicon			-11		-6.2		-9.5		-6.3	
Silver		1000	1.4		1070	107.0	1.1		1090	109.0
Sodium			425		444		459		483	
Strontium			0.20		0.30		0.10		0.10	
Thallium		1000	-0.10		1020	102.0	-1.7		1030	103.0
Tin			-6.7		-7.3		-7.1		-7.5	
Titanium			3.5		3.5		3.4		3.5	
Tungsten		500	21.6		484	96.8	18.8		486	97.2
Vanadium		500	-1.8		483	96.6	-1.4		494	98.8
Zinc		1000	-3.5		904	90.4	-3.8		938	93.8
Zirconium		500	2.2		509	101.8	2.6		519	103.8

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JA68258
Account: PTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SA022211M2.ICP Date Analyzed: 02/22/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 80 to 120 % Recovery Run ID: MA25860 Units: ug/l

Time: / Sample ID: / Metal	ICSA True	ICSAB True	00:14 ICSA3 Results	% Rec	00:20 ICSAB3 Results	% Rec
Aluminum	500000	500000	507000	101.4	529000	105.8
Antimony		1000	4.0		1080	108.0
Arsenic		1000	3.3		1050	105.0
Barium		500	-4.4		531	106.2
Beryllium		500	-0.20		516	103.2
Boron			-1.9		7.8	
Cadmium		1000	0.0		1090	109.0
Calcium	400000	400000	393000	98.3	403000	100.8
Chromium		500	0.80		527	105.4
Cobalt		500	1.0		483	96.6
Copper		500	-0.20		544	108.8
Iron	200000	200000	183000	91.5	192000	96.0
Lead		1000	-0.10		1060	106.0
Magnesium	500000	500000	537000	107.4	552000	110.4
Manganese		500	-1.5		519	103.8
Molybdenum		500	2.9		529	105.8
Nickel		1000	1.3		1050	105.0
Palladium		500	-11		556	111.2
Potassium			-46		-36	
Selenium		1000	2.0		1020	102.0
Silicon			-9.4		-5.2	
Silver		1000	1.7		1110	111.0
Sodium			448		475	
Strontium			0.20		0.10	
Thallium		1000	-0.50		1070	107.0
Tin			-7.5		-8.0	
Titanium			3.6		3.9	
Tungsten		500				
Vanadium		500	-2.1		508	101.6
Zinc		1000	-3.3		950	95.0
Zirconium		500				

(*) Outside of QC limits
(anr) Analyte not requested

5.1.6

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25866 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	10:35 ICB1 raw	final	10:57 CCB2 raw	final	12:07 CCB3 raw	final	13:18 CCB4 raw	final
Aluminum	200	7.9	anr							
Antimony	6.0	.6	anr							
Arsenic	3.0	.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Boron	100	.5								
Cadmium	3.0	.1	anr							
Calcium	5000	19	anr							
Chromium	10	.4	anr							
Cobalt	50	.2	anr							
Copper	10	.7	anr							
Iron	100	2.1	anr							
Lead	3.0	.9	anr							
Magnesium	5000	14	anr							
Manganese	15	.1	anr							
Molybdenum	20	5.8								
Nickel	10	.2	anr							
Palladium	50	1.4								
Potassium	10000	16	anr							
Selenium	10	1	anr							
Silicon	200	2.7								
Silver	10	.3	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Thallium	2.0	1	0.0	<2.0	0.70	<2.0	0.20	<2.0	0.30	<2.0
Tin	10	.5	anr							
Titanium	10	.3								
Tungsten	50	4.8								
Vanadium	50	.4	anr							
Zinc	20	.7	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: result < RL Run ID: MA25866 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	14:30 CCB5 raw	final	15:42 CCB6 raw	final	16:45 CCB7 raw	final	17:09 CCB8 raw	final
Aluminum	200	7.9	anr							
Antimony	6.0	.6	anr							
Arsenic	3.0	.5	anr							
Barium	200	.2	anr							
Beryllium	1.0	.1	anr							
Boron	100	.5								
Cadmium	3.0	.1	anr							
Calcium	5000	19	anr							
Chromium	10	.4	anr							
Cobalt	50	.2	anr							
Copper	10	.7	anr							
Iron	100	2.1	anr							
Lead	3.0	.9	anr							
Magnesium	5000	14	anr							
Manganese	15	.1	anr							
Molybdenum	20	5.8								
Nickel	10	.2	anr							
Palladium	50	1.4								
Potassium	10000	16	anr							
Selenium	10	1	anr							
Silicon	200	2.7								
Silver	10	.3	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Thallium	2.0	1	0.60	<2.0	0.20	<2.0	0.40	<2.0	0.30	<2.0
Tin	10	.5	anr							
Titanium	10	.3								
Tungsten	50	4.8								
Vanadium	50	.4	anr							
Zinc	20	.7	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

5.2.2
5

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25866 Units: ug/l

Time:		10:47	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Thallium	2000	2070	103.5
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

5.2.3
5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25866 Units: ug/l

Time:		10:28			12:01			13:12		
Sample ID:	ICV	ICV1		CCV	CCV2		CCV	CCV3		
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec	
Aluminum	anr									
Antimony	anr									
Arsenic	anr									
Barium	anr									
Beryllium	anr									
Boron										
Cadmium	anr									
Calcium	anr									
Chromium	anr									
Cobalt	anr									
Copper	anr									
Iron	anr									
Lead	anr									
Magnesium	anr									
Manganese	anr									
Molybdenum										
Nickel	anr									
Palladium										
Potassium	anr									
Selenium	anr									
Silicon										
Silver	anr									
Sodium	anr									
Strontium										
Thallium	1000	1020	102.0	2000	2080	104.0	2000	2060	103.0	
Tin	anr									
Titanium										
Tungsten										
Vanadium	anr									
Zinc	anr									
Zirconium										

(*) Outside of QC limits
(anr) Analyte not requested

5.2.4

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25866 Units: ug/l

Time:		14:24			15:36			16:40		
Sample ID:	CCV	CCV4		CCV	CCV5		CCV	CCV6		
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec	
Aluminum	anr									
Antimony	anr									
Arsenic	anr									
Barium	anr									
Beryllium	anr									
Boron										
Cadmium	anr									
Calcium	anr									
Chromium	anr									
Cobalt	anr									
Copper	anr									
Iron	anr									
Lead	anr									
Magnesium	anr									
Manganese	anr									
Molybdenum										
Nickel	anr									
Palladium										
Potassium	anr									
Selenium	anr									
Silicon										
Silver	anr									
Sodium	anr									
Strontium										
Thallium	2000	2060	103.0	2000	2050	102.5	2000	2050	102.5	
Tin	anr									
Titanium										
Tungsten										
Vanadium	anr									
Zinc	anr									
Zirconium										

(*) Outside of QC limits
(anr) Analyte not requested

5.2.4 5

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SBLFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 95 to 105 % Recovery Run ID: MA25866 Units: ug/l

Time:		17:03	
Sample ID:	CCV	CCV7	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Thallium	2000	2050	102.5
Tin	anr		
Titanium			
Tungsten			
Vanadium	anr		
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

5.2.4 5

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 50 to 150 % Recovery Run ID: MA25866 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	09:50 CRI1 Results	% Rec	09:56 CRID1 Results	% Rec	14:36 CRI2 Results	% Rec
Aluminum	200		100	anr					
Antimony	6.0		3.0	anr					
Arsenic	8.0	3.0	3.0	anr					
Barium	200		4.0	anr					
Beryllium	2.0	1.0	1.0	anr					
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000		1000	anr					
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100			anr					
Lead	3.0		2.5	anr					
Magnesium	5000		100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Palladium	50								
Potassium	10000		2000	anr					
Selenium	10		5.0	anr					
Silicon	200								
Silver	5.0		1.0	anr					
Sodium	10000		1000	anr					
Strontium	10								
Thallium	10	2.0	2.0	9.1	91.0	1.5	75.0	8.7	87.0
Tin	10			anr					
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					
Zinc	20		10	anr					
Zirconium	10	10	5.0						

(*) Outside of QC limits
(anr) Analyte not requested

5.2.5

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 50 to 150 % Recovery Run ID: MA25866 Units: ug/l

Time: Sample ID: Metal	CRI True	CRIA True	CRID True	14:42 CRI3 Results	% Rec
Aluminum	200		100		
Antimony	6.0		3.0		
Arsenic	8.0	3.0	3.0		
Barium	200		4.0		
Beryllium	2.0	1.0	1.0		
Boron	100		10		
Cadmium	3.0		1.0		
Calcium	5000		1000		
Chromium	10		2.0		
Cobalt	50		3.0		
Copper	10		2.0		
Iron	100				
Lead	3.0		2.5		
Magnesium	5000		100		
Manganese	15		3.0		
Molybdenum	20				
Nickel	10		4.0		
Palladium	50				
Potassium	10000		2000		
Selenium	10		5.0		
Silicon	200				
Silver	5.0		1.0		
Sodium	10000		1000		
Strontium	10				
Thallium	10	2.0	2.0		
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		
Zinc	20		10		
Zirconium	10	10	5.0	anr	

(*) Outside of QC limits
(anr) Analyte not requested

5.2.5 G

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

File ID: SB022311M1.ICP Date Analyzed: 02/23/11 Methods: EPA 200.7, SW846 6010B
QC Limits: 80 to 120 % Recovery Run ID: MA25866 Units: ug/l

Time: / Sample ID: / Metal	ICSA True	ICSAB True	11:01 ICSA1 Results	% Rec	11:07 ICSAB1 Results	% Rec	16:51 ICSA2 Results	% Rec	16:57 ICSAB2 Results	% Rec
Aluminum	500000	500000	509000	101.8	517000	103.4	520000	104.0	531000	106.2
Antimony		1000	-3.3		1070	107.0	-1.8		1060	106.0
Arsenic		1000	1.1		1050	105.0	-1.1		1030	103.0
Barium		500	-5.6		530	106.0	-5.2		516	103.2
Beryllium		500	0.10		495	99.0	0.10		508	101.6
Boron			-5.7		-6.5		-6.4		-6.5	
Cadmium		1000	1.8		1060	106.0	1.4		1050	105.0
Calcium	400000	400000	382000	95.5	378000	94.5	390000	97.5	391000	97.8
Chromium		500	2.4		509	101.8	2.7		506	101.2
Cobalt		500	4.4		482	96.4	3.5		482	96.4
Copper		500	0.50		556	111.2	0.20		515	103.0
Iron	200000	200000	181000	90.5	185000	92.5	183000	91.5	188000	94.0
Lead		1000	0.20		997	99.7	0.50		1010	101.0
Magnesium	500000	500000	502000	100.4	504000	100.8	521000	104.2	525000	105.0
Manganese		500	5.1		518	103.6	4.4		505	101.0
Molybdenum		500	8.1		535	107.0	7.4		533	106.6
Nickel		1000	5.4		1020	102.0	5.8		1010	101.0
Palladium		500	-59		478	95.6	-29		508	101.6
Potassium			-55		-81		-82		-94	
Selenium		1000	-0.50		1020	102.0	-1.1		1010	101.0
Silicon			-21		-13		-21		-13	
Silver		1000	0.50		1120	112.0	-1.0		1060	106.0
Sodium			29.5		38.3		119		97.9	
Strontium			-4.6		-4.5		-4.5		-4.6	
Thallium		1000	-3.0		1040	104.0	-1.1		1040	104.0
Tin			-6.4		-6.3		-6.0		-6.0	
Titanium			6.1		5.5		5.6		5.2	
Tungsten		500	8.6		496	99.2	-16		488	97.6
Vanadium		500	-0.90		505	101.0	-0.50		489	97.8
Zinc		1000	-2.4		939	93.9	-2.1		918	91.8
Zirconium		500	-6.6		503	100.6	-7.4		478	95.6

(*) Outside of QC limits
(anr) Analyte not requested

5.2.6

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/21/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	2.5	7.2	-0.10	<200
Antimony	6.0	1.2	1.3	0.30	<6.0
Arsenic	3.0	1.2	.92	0.10	<3.0
Barium	200	.2	.44	-0.20	<200
Beryllium	1.0	.2	.24	-0.40	<1.0
Boron	100	.8	2		
Cadmium	3.0	.2	.17	0.0	<3.0
Calcium	5000	11	9	22.3	<5000
Chromium	10	.3	.9	0.90	<10
Cobalt	50	.3	.3	-0.10	<50
Copper	10	.3	.85	2.6	<10
Iron	100	2	7.7	18.8	<100
Lead	3.0	.9	.94	0.10	<3.0
Magnesium	5000	13	17	-9.5	<5000
Manganese	15	.2	.18	0.20	<15
Molybdenum	20	.7	1.7		
Nickel	10	.3	.41	0.90	<10
Palladium	50	1.1	.77		
Potassium	10000	15	16	73.7	<10000
Selenium	10	1.6	1.5	0.80	<10
Silicon	200	5.2	9		
Silver	10	.3	.72	0.0	<10
Sodium	10000	7.9	14	198	<10000
Strontium	10	.1	.3		
Thallium	2.0	1.3	.17	-0.80	<2.0
Tin	10	.3	1.1		
Titanium	10	.3	.88		
Tungsten	50	11	6.5		
Vanadium	50	.2	.43	-0.20	<50
Zinc	20	2.8	1.7	2.1	<20
Zirconium	10	.5	4.5		

Associated samples MP56904: JA68258-1, JA68258-2, JA68258-3, JA68258-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

5.3.1 GT

OC1047

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/21/11

Metal	JA68257-2 Original	MS	Spikelot MPIRW1	% Rec	QC Limits
Aluminum	761	2800	2000	102.0	75-125
Antimony	0.0	454	500	90.8	75-125
Arsenic	2.7	1850	2000	92.4	75-125
Barium	33.7	1820	2000	89.3	75-125
Beryllium	0.0	45.8	50	91.6	75-125
Boron					
Cadmium	0.0	44.0	50	88.0	75-125
Calcium	33600	56900	25000	93.2	75-125
Chromium	3.1	184	200	90.5	75-125
Cobalt	0.0	463	500	92.6	75-125
Copper	6.7	221	250	85.7	75-125
Iron	5750	6780	1000	103.0	75-125
Lead	1.1	439	500	87.6	75-125
Magnesium	7460	29900	25000	89.8	75-125
Manganese	41.4	510	500	93.7	75-125
Molybdenum					
Nickel	4.7	451	500	89.3	75-125
Palladium					
Potassium	4830	27600	25000	91.1	75-125
Selenium	0.0	1800	2000	90.0	75-125
Silicon					
Silver	0.0	46.6	50	93.2	75-125
Sodium	79600	103000	25000	93.6	75-125
Strontium					
Thallium	0.0	1730	2000	86.5	75-125
Tin					
Titanium					
Tungsten					
Vanadium	2.0	448	500	89.2	75-125
Zinc	42.1	486	500	88.8	75-125
Zirconium					

Associated samples MP56904: JA68258-1, JA68258-2, JA68258-3, JA68258-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

5.3.2

001048

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

5.3.2

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/21/11

Metal	JA68257-2 Original	MSD	Spikelot MPIRW1	% Rec	MSD RPD	QC Limit
Aluminum	761	2770	2000	100.5	1.1	20
Antimony	0.0	457	500	91.4	0.7	20
Arsenic	2.7	1860	2000	92.9	0.5	20
Barium	33.7	1830	2000	89.8	0.5	20
Beryllium	0.0	45.7	50	91.4	0.2	20
Boron						
Cadmium	0.0	44.3	50	88.6	0.7	20
Calcium	33600	57600	25000	96.0	1.2	20
Chromium	3.1	184	200	90.5	0.0	20
Cobalt	0.0	464	500	92.8	0.2	20
Copper	6.7	222	250	86.1	0.5	20
Iron	5750	6870	1000	112.0	1.3	20
Lead	1.1	440	500	87.8	0.2	20
Magnesium	7460	30100	25000	90.6	0.7	20
Manganese	41.4	509	500	93.5	0.2	20
Molybdenum						
Nickel	4.7	453	500	89.7	0.4	20
Palladium						
Potassium	4830	28000	25000	92.7	1.4	20
Selenium	0.0	1810	2000	90.5	0.6	20
Silicon						
Silver	0.0	46.8	50	93.6	0.4	20
Sodium	79600	106000	25000	105.6	2.9	20
Strontium						
Thallium	0.0	1730	2000	86.5	0.0	20
Tin						
Titanium						
Tungsten						
Vanadium	2.0	448	500	89.2	0.0	20
Zinc	42.1	489	500	89.4	0.6	20
Zirconium						

Associated samples MP56904: JA68258-1, JA68258-2, JA68258-3, JA68258-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

5.3.2 5

001051

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/21/11

Metal	LCS Result	Spikelot MPLCW3	% Rec	QC Limits
Aluminum	4820	5000	96.4	80-120
Antimony	496	500	99.2	80-120
Arsenic	499	500	99.8	80-120
Barium	485	500	97.0	80-120
Beryllium	512	500	102.4	80-120
Boron				
Cadmium	500	500	100.0	80-120
Calcium	5470	5500	99.5	80-120
Chromium	513	500	102.6	80-120
Cobalt	526	500	105.2	80-120
Copper	473	500	94.6	80-120
Iron	5610	5500	102.0	80-120
Lead	483	500	96.6	80-120
Magnesium	5200	5500	94.5	80-120
Manganese	534	500	106.8	80-120
Molybdenum				
Nickel	491	500	98.2	80-120
Palladium				
Potassium	9680	10000	96.8	80-120
Selenium	491	500	98.2	80-120
Silicon				
Silver	191	200	95.5	80-120
Sodium	9800	10000	98.0	80-120
Strontium				
Thallium	480	500	96.0	80-120
Tin				
Titanium				
Tungsten				
Vanadium	507	500	101.4	80-120
Zinc	520	500	104.0	80-120
Zirconium				

Associated samples MP56904: JA68258-1, JA68258-2, JA68258-3, JA68258-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

5.3.3

ACCUTEST LABORATORIES

00053

SERIAL DILUTION RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/21/11

Metal	JA68257-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum	761	734	3.5	0-10
Antimony	0.00	0.00	NC	0-10
Arsenic	2.70	0.00	100.0(a)	0-10
Barium	33.7	33.0	2.1	0-10
Beryllium	0.00	0.00	NC	0-10
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium	33600	33700	0.3	0-10
Chromium	3.10	2.00	35.5 (a)	0-10
Cobalt	0.00	0.00	NC	0-10
Copper	6.70	11.6	73.1 (a)	0-10
Iron	5750	5730	0.3	0-10
Lead	1.10	0.00	100.0(a)	0-10
Magnesium	7460	7430	0.3	0-10
Manganese	41.4	40.9	1.2	0-10
Molybdenum				
Nickel	4.70	4.10	12.8 (a)	0-10
Palladium				
Potassium	4830	4700	2.9	0-10
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	79600	78300	1.6	0-10
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Tungsten				
Vanadium	2.00	0.00	100.0(a)	0-10
Zinc	42.1	48.2	14.5 (a)	0-10
Zirconium				

Associated samples MP56904: JA68258-1, JA68258-2, JA68258-3, JA68258-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: JA68258
Account: FTMONNJM - Fort Monmouth Environmental Testing Lab.
Project: Fort Monmouth Env Testing Lab, Building 173, SELFM-PW-EV, Fort Monmouth, NJ

QC Batch ID: MP56904
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

5.3.4

MERCURY RESULTS

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 10538
Sample Received: 12/09/10
Sample Matrix: Aqueous

Site: M2/Bldg. 296

Method of Analysis: Std. Methods 18th, Method 3112B

TAL-METALS RESULTS SUMMARY Mercury (ug/L)

Work Order #	Sample Location	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
1053801	M2MW13 (10')	12/16/10	ND	2	0.500	0.254
1053802	M2MW13 (18')	12/16/10	ND	2	0.500	0.254
1053803	296MW06 (3.7')	12/16/10	ND	2	0.500	0.254
1053804	296MW06 (12.25')	12/16/10	ND	2	0.500	0.254
	Method Blank	12/16/10	ND	2	0.500	0.254

ND = Not Detected MDL = Method Detection Limit
* Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C
R.L. = Reporting limit, Estimated results between MDL and R.L.

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables Checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete data packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1.	Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted.	✓
2.	Table of Contents submitted.	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.	✓
4.	Document paginated and legible.	✓
5.	Chain of Custody submitted.	✓
6.	Samples submitted to lab within 48 hours of sample collection.	✓
7.	Methodology Summary submitted.	✓
8.	Laboratory Chronicle and Holding Time Check submitted.	✓
9.	Results submitted on a dry weight basis.	✓
10.	Method Detection Limits submitted.	✓
11.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.	✓

Laboratory Manager or Environmental Consultant's Signature [signature]
Date: 3/4/11

Laboratory Certification # 13461

*Refer to NJAC 7:26E -- Appendix A, Section IV – Reduced Data Deliverables – Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Dean Tardiff
Laboratory Manager

1/6/11
3/4/11

FINAL

Fort Monmouth Main Post and Charles Wood Area

Baseline Ecological Evaluation Report

U. S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works



May 2011

Prepared By:

Shaw Environmental, Inc.

2113 Emmorton Park Road
Edgewood, Maryland 21040

U.S. Army Corps of Engineers, Baltimore District
Contract Number W912DR-05-D-0026
Task Order No. 40

TABLE OF CONTENTS

Section	*Page*
EXECUTIVE SUMMARY	**ES-1**
1.0 INTRODUCTION	**1-1**
1.1 PURPOSE AND OBJECTIVES	1-2
1.2 REPORT ORGANIZATION	1-2
2.0 FORT MONMOUTH BACKGROUND AND GENERAL ENVIRONMENTAL SETTING	**2-1**
2.1 LOCATION AND DESCRIPTION	2-1
2.1.1 MAIN POST	2-1
2.1.2 CHARLES WOOD AREA	2-1
2.2 HISTORICAL LAND USE	2-1
2.2.1 MAIN POST	2-2
2.2.2 CHARLES WOOD AREA	2-2
2.3 FACILITY HISTORY	2-2
2.4 ENVIRONMENTAL SETTING	2-3
2.4.1 CLIMATE	2-3
2.4.2 TOPOGRAPHY	2-3
2.4.3 SURFACE WATER DRAINAGE AND WETLANDS	2-3
2.4.4 REGIONAL AND LOCAL GEOLOGY	2-5
2.4.5 SOILS	2-6
2.4.6 HYDROGEOLOGY	2-7
2.4.7 NATURAL BACKGROUND CONSTITUENTS	2-7
2.4.8 ECOLOGY	2-7
2.4.9 SURROUNDING LAND USE	2-9
2.4.9.1 Adjacent Properties	2-9
2.4.9.2 Standard Environmental Record Sources	2-12
2.5 SITE DESCRIPTION AND ENVIRONMENTAL SETTING	2-14
2.5.1 MAIN POST	2-15
2.5.1.1 Landfill 2 (FTMM-2)	2-15
2.5.1.2 Landfill 3 (FTMM-3)	2-17
2.5.1.3 Landfill 4 (FTMM-4)	2-18
2.5.1.4 Landfill 5 (FTMM-5)	2-18
2.5.1.5 Landfill 8 (FTMM-8)	2-19
2.5.1.6 Landfill 12 (FTMM-12)	2-21
2.5.1.7 Landfill 14 (FTMM-14)	2-22
2.5.1.8 Water Tank (FTMM-15)	2-23
2.5.1.9 Pesticide Storage, Building 498 (FTMM-16)	2-24
2.5.1.10 Former Training Area/Landfill (FTMM-18)	2-24
2.5.1.11 Pre-1941 Former Sanitary Sewage Treatment Plant (FTMM-20)	2-26
2.5.1.12 Building 1122, Unknown Discharge (FTMM-59)	2-26
2.5.1.13 Building 283, Leaking UST, Gasoline (FTMM-61)	2-28
2.5.1.14 Building 1150 (Parcel 39)	2-29
2.5.1.15 Buildings 283, 288, 291, 292, 293, 295 (ECP Parcel 49)	2-30
2.5.1.16 Building 1075 (ECP Parcel 61)	2-32
2.5.1.17 Building 900 (ECP Parcel 69)	2-34
2.5.2 CHARLES WOOD AREA	2-35
2.5.2.1 Landfill, Site CW-3A (FTMM-25)	2-35
2.5.2.2 Former Pesticide Storage Area, Site CW-6 (FTMM-28)	2-37
2.5.2.3 Building 2700 (ECP Parcel 15)	2-38
2.5.2.4 Buildings 2507 and 2704 (ECP Parcel 27)	2-40
2.5.2.5 Building 2525 (Parcel 28)	2-41

3.0 DATA EVALUATION 3-1

3.1 REVIEW OF AVAILABLE SITE DATA 3-1
3.2 BEE SITE INVESTIGATION METHODOLOGIES 3-2
3.2.1 SURFACE SOIL SAMPLING 3-2
3.2.2 SURFACE WATER SAMPLING 3-3
3.2.3 SEDIMENT SAMPLING 3-4
3.2.4 DECONTAMINATION PROCEDURES 3-4
3.2.5 INVESTIGATION-DERIVED WASTE 3-5
3.2.6 QUALITY CONTROL 3-5
3.2.6.1 Completeness 3-5
3.2.6.2 Representativeness and Documentation Quality Review 3-6
3.2.6.3 Review of QC Samples 3-6
3.2.6.4 Work Plan Variances 3-7
3.2.6.5 Review of Tentatively Identified Compounds 3-7
3.2.6.6 Method Detection Limits 3-7
3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS 3-7
3.3.1 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SEDIMENT 3-8
3.3.2 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SURFACE WATER 3-9
3.3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SOIL 3-9
3.4 IDENTIFICATION OF COPECS 3-10
3.4.1 CONSTITUENTS IN BACKGROUND MEDIA 3-12
3.4.1.1 Main Post Background 3-13
3.4.1.1.1 Main Post Surface Water Background 3-13
3.4.1.1.2 Main Post Sediment Background 3-13
3.4.1.2 Charles Wood Area Background 3-14
3.4.1.2.1 Charles Wood Area Surface Water Background 3-14
3.4.1.2.2 Charles Wood Area Sediment Background 3-15
3.4.1.3 Charles Wood Area Downgradient Surface Water 3-15
3.4.1.4 Charles Wood Area Downgradient Sediment 3-16
3.4.2 MAIN POST 3-16
3.4.2.1 Landfill 2 (FTMM-2) 3-16
3.4.2.1.1 COPECs for Soil at Landfill 2 (FTMM-2) 3-16
3.4.2.1.2 COPECs for Groundwater at Landfill 2 3-17
3.4.2.1.3 COPECs for Surface Water at Landfill 2 (FTMM-2) 3-18
3.4.2.1.4 COPECs for Sediment at Landfill 2 (FTMM-2) 3-18
3.4.2.1.5 Summary of COPECs for Landfill 2 (FTMM-2) 3-19
3.4.2.2 Landfill 3 (FTMM-3) 3-20
3.4.2.2.1 COPECs for Soil at Landfill 3 (FTMM-3) 3-20
3.4.2.2.2 COPECs for Groundwater at Landfill 3 (FTMM-3) 3-21
3.4.2.2.3 COPECs for Surface Water at Landfill 3 (FTMM-3) 3-21
3.4.2.2.4 COPECs for Sediment at Landfill 3 (FTMM-3) 3-21
3.4.2.2.5 Summary of COPECs for Landfill 3 (FTMM-3) 3-22
3.4.2.3 Landfill 4 (FTMM-4) 3-23
3.4.2.3.1 COPECs for Soil at Landfill 4 (FTMM-4) 3-23
3.4.2.3.2 COPECs for Groundwater at Landfill 4 (FTMM-4) 3-24
3.4.2.3.3 COPECs for Surface Water at Landfill 4 (FTMM-4) 3-24
3.4.2.3.4 COPECs for Sediment at Landfill 4 (FTMM-4) 3-24
3.4.2.3.5 Summary of COPECs for Landfill 4 (FTMM-4) 3-25
3.4.2.4 Landfill 5 (FTMM-5) 3-26
3.4.2.4.1 COPECs for Soil at Landfill 5 (FTMM-5) 3-26
3.4.2.4.2 COPECs for Groundwater at Landfill 5 (FTMM-5) 3-27
3.4.2.4.3 COPECs for Surface Water at Landfill 5 (FTMM-5) 3-27
3.4.2.4.4 COPECs for Sediment at Landfill 5 (FTMM-5) 3-27
3.4.2.4.5 Summary of COPECs for Landfill 5 (FTMM-5) 3-28
3.4.2.5 Landfill 8 (FTMM-8) 3-29

3.4.2.5.1 COPECs for Soil at Landfill 8 (FTMM-8) 3-29
3.4.2.5.2 COPECs for Groundwater at Landfill 8 (FTMM-8) 3-30
3.4.2.5.3 COPECs for Surface Water at Landfill 8 (FTMM-8) 3-30
3.4.2.5.4 COPECs for Sediment at Landfill 8 (FTMM-8) 3-31
3.4.2.5.5 Summary of COPECs for Landfill 8 (FTMM-8) 3-31
3.4.2.6 Landfill 12 (FTMM-12) 3-33
3.4.2.6.1 COPECs for Soil at Landfill 12 (FTMM-12) 3-33
3.4.2.6.2 COPECs for Groundwater at Landfill 12 (FTMM-12) 3-33
3.4.2.6.3 COPECs for Surface Water at Landfill 12 (FTMM-12) 3-33
3.4.2.6.4 COPECs for Sediment at Landfill 12 (FTMM-12) 3-34
3.4.2.6.5 Summary of COPECs for Landfill 12 (FTMM-12) 3-34
3.4.2.7 Landfill 14 (FTMM-14) 3-35
3.4.2.7.1 COPECs for Soil at Landfill 14 (FTMM-14) 3-35
3.4.2.7.2 COPECs for Groundwater at Landfill 14 (FTMM-14) 3-35
3.4.2.7.3 COPECs for Surface Water at Landfill 14 (FTMM-14) 3-36
3.4.2.7.4 COPECs for Sediment at Landfill 14 (FTMM-14) 3-36
3.4.2.7.5 Summary of COPECs for Landfill 14 (FTMM-14) 3-37
3.4.2.8 Water Tank (FTMM-15) 3-38
3.4.2.8.1 COPECs for Surface Water at Site FTMM-15 3-38
3.4.2.8.2 COPECs for Sediment at Site FTMM-15 3-38
3.4.2.8.3 Summary of COPECs for Site FTMM-15 3-39
3.4.2.9 Pesticide Storage, Building 498 (FTMM-16) 3-39
3.4.2.9.1 COPECs for Surface Water at Site FTMM-16 3-40
3.4.2.9.2 COPECs for Sediment at Site FTMM-16 3-40
3.4.2.9.3 Summary of COPECs for Site M-16 3-41
3.4.2.10 Former Training Area/Landfill (FTMM-18) 3-41
3.4.2.10.1 COPECs for Soil at Site FTMM-18 3-41
3.4.2.10.2 COPECs for Groundwater at Site FTMM-18 3-42
3.4.2.10.3 COPECs for Surface Water at Site FTMM-18 3-42
3.4.2.10.4 COPECs for Sediment at Site FTMM-18 3-42
3.4.2.10.5 Summary of COPECs for Site FTMM-18 3-43
3.4.2.11 Pre-1941 Former Sanitary Sewage Treatment Plant, FTMM-20 3-44
3.4.2.11.1 COPECs for Surface Water at the Pre-1941 Former Sanitary STP FTMM-20 3-44
3.4.2.11.2 COPECs for Sediment at the Pre-1941 Former Sanitary STP FTMM-20 3-44
3.4.2.11.3 Summary of COPECs for Site FTMM-20 3-45
3.4.2.12 Building 1122, FTMM-59 (ECP Parcel 43) 3-45
3.4.2.12.1 COPECs for Groundwater at Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.2 COPECs for Surface Water at Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.3 COPECs for Sediment at Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.4 Summary of COPECs for Building 1122, FTMM-59 and Parcel 43 3-47
3.4.2.13 Building 1150 (Parcel 39) 3-48
3.4.2.13.1 COPECs for Soil at Building 1150 (ECP Parcel 39) 3-48
3.4.2.13.2 COPECs for Surface Water at Building 1150 (ECP Parcel 39) 3-48
3.4.2.13.3 COPECs for Sediment at Building 1150 (ECP Parcel 39). 3-49
3.4.2.13.4 Summary of COPECs for Building 1150 3-50
3.4.2.14 Buildings 283, 288, 291, 293, 295 (FTMM-61 and ECP Parcel 49) 3-50
3.4.2.14.1 COPECs for Surface Soil at FTMM-61 and Parcel 49 3-50
3.4.2.14.2 COPECs for Groundwater at FTMM-61 and Parcel 49 3-51
3.4.2.14.3 COPECs for Surface Water at FTMM-61 and Parcel 49 ... 3-51

3.4.2.14.4 COPECs for Sediment at FTMM-61 and Parcel 49 3-52
3.4.2.14.5 Summary of COPECs for FTMM-61 and Parcel 49 3-52
3.4.2.15 Building 1075 (ECP Parcel 61) 3-53
3.4.2.15.1 COPECs for Surface Soil at Parcel 61 3-53
3.4.2.15.2 COPECs for Surface Water at Parcel 61 3-54
3.4.2.15.3 COPECs for Sediment at Parcel 61 3-54
3.4.2.15.4 Summary of COPECs for Parcel 61 3-55
3.4.2.16 Building 900 (ECP Parcel 69) 3-55
3.4.2.16.1 COPECs for Soil at Parcel 69 3-55
3.4.2.16.2 COPECs for Groundwater at Parcel 69 3-56
3.4.2.16.3 COPECs for Surface Water at Parcel 69 3-56
3.4.2.16.4 COPECs for Sediment at Parcel 69 3-56
3.4.2.16.5 Summary of COPECs for Parcel 69 3-57
3.4.3 CHARLES WOOD AREA 3-58
3.4.3.1 Landfill, Site CW-3A, FTMM-25 3-58
3.4.3.1.1 COPECs for Soil at Landfill CW-3A 3-58
3.4.3.1.2 COPECs for Groundwater at Landfill CW-3A (FTMM-25) . 3-58
3.4.3.1.3 COPECs for Surface Water at Landfill CW-3A (FTMM-25) 3-59
3.4.3.1.4 COPECs for Sediment at Landfill CW-3A (FTMM-25) 3-59
3.4.3.1.5 Summary of COPECs for Landfill CW-3 (FTMM-25)A 3-60
3.4.3.2 Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-61
3.4.3.2.1 COPECs for Soil at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-61
3.4.3.2.2 COPECs for Groundwater at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-62
3.4.3.2.3 COPECs for Surface Water at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-62
3.4.3.2.4 COPECs for Sediment at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-62
3.4.3.2.5 Summary of COPECs for Site CW-6 (FTMM-28) 3-63
3.4.3.3 Building 2700 (ECP Parcel 15) 3-64
3.4.3.3.1 COPECs for Groundwater at Building 2700 (Parcel 15) ... 3-64
3.4.3.3.2 COPECs for Surface Water at Building 2700 (ECP Parcel 15) 3-64
3.4.3.3.3 COPECs for Sediment at Building 2700 (ECP Parcel 15). 3-65
3.4.3.3.4 Summary of COPECs for Parcel 15 3-65
3.4.3.4 Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.1 COPECs for Surface Soil at Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.2 COPECs for Surface Water at Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.3 COPECs for Sediment at Buildings 2507 and 2704 (ECP Parcel 27) 3-67
3.4.3.4.4 Summary of COPECs for Parcel 27 3-67
3.4.3.5 Building 2525 (ECP Parcel 28) 3-67
3.4.3.5.1 COPECs for Surface Soil at Building 2525 (ECP Parcel 28) 3-67
3.4.3.5.2 COPECs for Groundwater at Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.3 COPECs for Surface Water at Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.4 COPECs for Sediment at Building 2525 (ECP Parcel 28). 3-68
3.4.3.5.5 Summary of COPECs for Parcel 28 3-69

4.0 DISCUSSION 4-1

4.1 MAIN POST 4-1
4.1.1 LANDFILL 2 (FTMM-2) 4-1
4.1.2 LANDFILL 3 (FTMM-3) 4-2
4.1.3 LANDFILL 4 (FTMM-4) 4-3
4.1.4 LANDFILL 5 (FTMM-5) 4-4
4.1.5 LANDFILL 8 (FTMM-8) 4-5
4.1.6 LANDFILL 12 (FTMM-12) 4-6
4.1.7 LANDFILL 14 (FTMM-14) 4-7
4.1.8 WATER TANK (FTMM-15) 4-9
4.1.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16) 4-9
4.1.10 FORMER TRAINING AREA/LANDFILL (FTMM-18) 4-10
4.1.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20) 4-11
4.1.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43) 4-12
4.1.13 BUILDING 1150 (ECP PARCEL 39) 4-13
4.1.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49) 4-14
4.1.15 BUILDING 1075 (ECP PARCEL 61) 4-15
4.1.16 BUILDING 900 (ECP PARCEL 69) 4-16
4.2 CHARLES WOOD AREA 4-17
4.2.1 LANDFILL, SITE CW-3A (FTMM-25) 4-17
4.2.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28) 4-18
4.2.3 BUILDING 2700 (ECP PARCEL 15) 4-19
4.2.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27) 4-20
4.2.5 BUILDING 2525 (ECP PARCEL 28) 4-21

5.0 SUMMARY AND CONCLUSIONS 5-1

6.0 REFERENCES 6-1

LIST OF FIGURES

Figure

1-1 Site Location Map
1-2 Main Post Map
1-3 Charles Wood Area Map
2-1 High Tide Salinity Results
2-2 Adjacent Land Use Map
3-1 BEE Sampling Locations at Main Post
3-2 BEE Sampling Locations at Charles Wood Area
4-1 Main Post Forested Wetlands
4-2 Main Post Emergent Wetlands
4-3 Main Post Potential bald eagle Foraging Habitat
4-4 Charles Wood Area Forested Wetlands
4-5 Charles Wood Area Emergent Wetlands
5-1 Chromium Results in Sediment – Main Post
5-2 Copper Results in Sediment – Main Post
5-3 Lead Results in Sediment – Main Post
5-4 Mercury Results in Sediment – Main Post
5-5 Silver Results in Sediment – Main Post
5-6 Zinc Results in Sediment – Main Post
5-7 Chromium Results in Sediment – Charles Wood Area
5-8 Copper Results in Sediment – Charles Wood Area
5-9 Silver Results in Sediment – Charles Wood Area
5-10 Zinc Results in Sediment – Charles Wood Area

LIST OF TABLES

Table	
ES-1	Fort Monmouth Main Post and Charles Wood Area Baseline Ecological Evaluation Summary
2-1	Summary of High Tide Salinity Data
2-2	Ambient Levels of Selected Metals and Other Analytes in Soil
2-3	Properties Observed During Main Post Property Survey
2-4	Properties Observed During Charles Wood Area Property Survey
2-5	Main Post Standard Environmental Record Results
2-6	Charles Wood Area Standard Environmental Record Results
2-7	Charles Wood Area, ECP Parcel and IRP Site Summary
2-8	Main Post, ECP Parcel and IRP Site Summary
2-9	Fort Monmouth Main Post/Charles Wood Area BEE Sites
3-1	Sample and Analytical Summary Main Post
3-2	Sample and Analytical Summary Charles Wood Area
3-3	Summary of Analytes Detected in Main Post Background Surface Water Samples
3-4	Summary of Analytes Detected in Main Post Background Sediment Samples
3-5	Summary of Analytes Detected in Charles Wood Area Background Surface Water Samples
3-6	Summary of Analytes Detected in Charles Wood Area Background Sediment Samples
3-7	Summary of Analytes Detected in Charles Wood Area Downgradient Surface Water Samples
3-8	Summary of Analytes Detected in Charles Wood Area Downgradient Sediment Samples
4-1	Summary of Surface Water COPECs and Background Concentrations at Landfill 2 (FTMM-2)
4-2	Summary of Sediment COPECs and Background Concentrations at Landfill 2 (FTMM-2)
4-3	Summary of Surface Water COPECs and Background Concentrations at Landfill 3 (FTMM-3)
4-4	Summary of Sediment COPECs and Background Concentrations at Landfill 3 (FTMM-3)
4-5	Summary of Surface Water COPECs and Background Concentrations at Landfill 4 (FTMM-4)
4-6	Summary of Sediment COPECs and Background Concentrations at Landfill 4 (FTMM-4)
4-7	Summary of Surface Water COPECs and Background Concentrations at Landfill 5 (FTMM-5)
4-8	Summary of Sediment COPECs and Background Concentrations at Landfill 5 (FTMM-5)
4-9	Summary of Surface Water COPECs and Background Concentrations at Landfill 8 (FTMM-8)
4-10	Summary of Sediment COPECs and Background Concentrations at Landfill 8 (FTMM-8)
4-11	Summary of Surface Water COPECs and Background Concentrations at Landfill 12 (FTMM-12)
4-12	Summary of Sediment COPECs and Background Concentrations at Landfill 12 (FTMM-12)
4-13	Summary of Surface Water COPECs and Background Concentrations at Landfill 14 (FTMM-14)
4-14	Summary of Sediment COPECs and Background Concentrations at Landfill 14 (FTMM-14)
4-15	Summary of Surface Water COPECs and Background Concentrations at Site FTMM-15
4-16	Summary of Surface Water COPECs and Background Concentrations at Site FTMM-16

4-17 Summary of Sediment COPECs and Background Concentrations at Site FTMM-16

4-18 Summary of Surface Water COPECs and Background Concentrations at Site FTMM-18

4-19 Summary of Sediment COPECs and Background Concentrations at Site FTMM-18

4-20 Summary of Surface Water COPECs and Background Concentrations at Site FTMM-20

4-21 Summary of Sediment COPECs and Background Concentrations at Site FTMM-20

4-22 Summary of Surface Water COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

4-23 Summary of Sediment COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

4-24 Summary of Surface Water COPECs and Background Concentrations at Building 1150, Parcel 39

4-25 Summary of Sediment COPECs and Background Concentrations at Building 1150, Parcel 39

4-26 Summary of Surface Water COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

4-27 Summary of Sediment COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

4-28 Summary of Surface Water COPECs and Background Concentrations at Building 1075, Parcel 61

4-29 Summary of Sediment COPECs and Background Concentrations at Building 1075, Parcel 61

4-30 Summary of Surface Water COPECs and Background Concentrations at Building 900, Parcel 69

4-31 Summary of Sediment COPECs and Background Concentrations at Building 900, Parcel 69

4-32 Summary of Surface Water COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

4-33 Summary of Sediment COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

4-34 Summary of Surface Water COPECs and Background Concentrations at Site CW-6 (FTMM-28)

4-35 Summary of Sediment COPECs and Background Concentrations at Site CW-6 (FTMM-28)

4-36 Summary of Surface Water COPECs and Background Concentrations at Building 2700, Parcel 15

4-37 Summary of Sediment COPECs and Background Concentrations at Building 2700, Parcel 15

4-38 Summary of Surface Water COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

4-39 Summary of Sediment COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

4-40 Summary of Surface Water COPECs and Background Concentrations at Building 2525, Parcel 28

4-41 Summary of Sediment COPECs and Background Concentrations at Building 2525, Parcel 28

LIST OF APPENDICES

Appendix	
A	Remedial Investigation Data Evaluated in the BEE
B	Site Investigation Data Evaluated in the BEE
C	Groundwater Monitoring Data Evaluated in the BEE
D	BEE Investigation Data Evaluated in the BEE
E	New Jersey Department of Environmental Protection Ecological Screening Criteria
F	Laboratory Data Packages *(Included on DVD)*
G	Field Documentation, Field Measured Parameters, NOAA Tide Tables, and Sediment Sample Descriptions
H	Fort Monmouth Maximum Background Concentrations from the 1995 SI Report
I	NJDEP Correspondence
J	Fort Monmouth Surface Water Salinity Data for Main Post (2004-2009)
K	Fort Monmouth Utility Maps

LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/L	micrograms per liter
µmhos	micromhos
ACM	Asbestos-Containing Materials
AST	Above-ground Storage Tank
BEE	Baseline Ecological Evaluation
bgs	below ground surface
BRAC	Base Realignment and Closure Act of 1990
CEA	Classification Exception Area
CECOM	U.S. Army Communications and Electronics Command
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
COC	Chain-of-Custody
COPEC	Contaminant of Potential Ecological Concern
CORRACTS	Corrective Action Activity Site
CWA	Charles Wood Area
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DER	Declaration of Environmental Restriction
DPW	Directorate of Public Works
DQO	Data Quality Objective
Eco-SSL	Ecological Soil Screening Level
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
EMI	Electromagnetic Induction
ER-L	Effects Range-Low
ER-M	Effects Range-Medium
ESC	Ecological Screening Criteria
FSPM	Field Sampling Procedures Manual
ft msl	feet above mean sea level
FTMM	Fort Monmouth
gamma-BHC	gamma-Hexachlorocyclohexane
GC/MS	Gas Chromatography/Mass Spectrometry
GIS	Geographic Information System
GPS	Global Positioning System

GWQC	Groundwater Quality Criteria
IA	Installation Assessment
IDW	Investigation-Derived Waste
IRP	Installation Restoration Program
LEL	Lowest Effect Level
LUST	Leaking Underground Storage Tank
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
MP	Main Post
MTBE	Methyl *tert*-Butyl Ether
N.J.A.C.	New Jersey Administrative Code
NAD	North American Datum
ND	Non-Detect
NFA	No Further Action
NFRA	No Further Remedial Action
NFRAP	No Further Remedial Action Planned
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
ORNL	Oak Ridge National Laboratory
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PID	Photoionization Detector
PPE	Personal Protective Equipment
ppt	parts per thousand
PRG	Preliminary Remediation Goal
QC	Quality Control
R&D	Research and Development
RA	Remedial Action
RAM	Radioactive Materials
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RPD	Relative Percent Difference
SEL	Severe Effect Level
Shaw	Shaw Environmental, Inc.
SHWS	State Hazardous Waste Site

SI	Site Investigation
SOP	Standard Operating Procedure
SQG	Small Quantity Generator
SRP	Site Remediation Program
STP	Sewage Treatment Plant
SVOC	Semivolatile Organic Compound
SWQC	Surface Water Quality Criteria
TAL	Target Analyte List
TBA	*tert*-Butyl Alcohol
TCE	Trichloroethene
TCL	Target Compound List
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TRSR	Technical Requirements for Site Remediation
TSDF	Transport, Storage, and Disposal Facility
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
VSI	Visual Site Inspection
Weston	Roy F. Weston, Inc.
WP	Work Plan

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (USACE), Baltimore District, tasked Shaw Environmental, Inc. (Shaw) to perform a Baseline Ecological Evaluation (BEE) at Fort Monmouth (FTMM) to fulfill requirements as set forth in New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (TRSR) [New Jersey Administrative Code (N.J.A.C.) 7:26E-3.11]. This BEE Report has been prepared under the Baltimore Architectural and Engineering Services Contract Number W912DR-05-D-0026 (Task Order 40) and is based on the Scope of Work dated June 3, 2008; information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel; and the final Work Plan (WP) dated January 2010. A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009 to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

FTMM is an Army installation occupying approximately 1,126 acres in Monmouth County in central New Jersey, approximately 40 miles east of Trenton. FTMM is comprised of two operational areas known as the Main Post (MP) and the Charles Wood Area (CWA). The MP encompasses a 673-acre area and the CWA encompasses a 489-acre area.

The primary mission of FTMM is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command. The support provided by the Garrison is used by tenants in the performance of research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces. The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The CWA is used primarily for research and development, testing, housing, and recreation. The CWA research, development, and testing facilities occupy the southwest corner of CWA. The northwest corner formerly consisted of residential units but is currently undeveloped. Residential units currently occupy the southeastern boundary, and the golf course occupies the northeast corner. In 2005, FTMM was identified as a facility to be closed as part of the Defense Base Realignment and Closure Act of 1990 (BRAC), Public Law 101-510, as amended. As part of this process, it is necessary for the Army to identify and document the environmental liabilities associated with installations where the BRAC action will involve the disposal of property. The environmental condition of property (ECP) process is the mechanism to provide a summary of the current environmental condition of a property.

A Phase I ECP Assessment was conducted in 2006 and 2007. The final Phase I ECP Report for FTMM was completed on January 29, 2007 (Shaw, 2007). The Phase I ECP evaluated the existing environmental conditions, and characterized the property into parcels according to their environmental condition based on Department of Defense guidelines. Using the results of the Phase I ECP Report, site investigation (SI) sampling recommendations were developed for 21 specific parcels and two areas of concern where no existing data or insufficient data were present to fully evaluate the environmental condition of the property. The ECP SI was conducted in 2007 and 2008 and the final SI Report for FTMM was completed on July 21, 2008 (Shaw, 2008). Eight parcels identified through the FTMM SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property. NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008.

Within the FTMM MP and CWA are 27 active/open Installation Restoration Program (IRP) Sites. The NJDEP indicated to the Army that, pursuant to N.J.A.C. 7:26E-3.11, BEEs are required at open/active IRP sites prior to considering No Further Action (NFA) determinations. Of these 27 IRP Sites, 14 have been determined to require additional evaluation through the BEE process. In addition to these IRP Sites, it was determined that a BEE should also be conducted related to FTMM-20, which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007).

The NJDEP describes the purpose of conducting a BEE as follows (NJDEP, 2009a):

A critical part of every site investigation is the baseline ecological evaluation required in N.J.A.C 7:26E-3.11. The Technical Requirements for Site Remediation require each person conducting the remediation of a contaminated site or area of concern to conduct a baseline ecological evaluation as part of the process to ensure that the resulting remedy is protective of the environment. The Department uses the information that the person is already required to collect in the baseline ecological evaluation as the first step in determining whether or not natural resource injuries potentially exist as a result of a discharge at a site. In the baseline ecological evaluation, the person responsible for conducting the remediation must determine whether or not any natural resources may have been injured by a discharge.

The BEE is Tier I of the ecological evaluation and ecological risk assessment process as developed by the Site Remediation Program (SRP), and is defined in the TRSR and Site Remediation News (NJDEP, 1997). The BEE was developed to be an efficient and cost-effective screening process. As such, the results of a BEE will determine whether potential ecological impacts are negligible or whether more site-specific ecological evaluation is warranted.

The objective of the BEE at FTMM is to examine each of the 23 identified sites (8 ECP parcels and 15 IRP sites) and the sample results from sediment, surface water, soil, and groundwater at these sites for the co-occurrence of 1) contaminants of potential ecological concern (COPECs), 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. In order to reach this objective, a data and literature review were conducted, a field investigation, including field sampling as applicable, was performed, and data analysis and ecological hazard characterization were completed within the BEE report. An additional objective of the field sampling was to provide information regarding the general background characteristics of surface water and sediment in the FTMM area through the collection of several upgradient samples to assist risk managers in the decision-making process.

The occurrence of COPECs is typically determined through a comparison of existing site data with ecological screening levels. Additional data needs were identified prior to the BEE and environmental samples were collected in 2010 as part of the BEE. The occurrence of environmentally sensitive natural resources and of potential chemical migration pathways was determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database. Reviews of NJDEP tidal and freshwater wetland maps, U.S. Geological Survey (USGS) topographic maps, and U.S. Department of Agriculture (USDA) Soil Conservation Service soil survey maps were performed to provide an overview of the habitat expected to occur at or in the vicinity of the site. The qualitative site visit was conducted for the purpose of verifying information gathered and to identify existing ecology communities and species, environmentally sensitive natural resources, and potential contaminant pathways.

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was to review the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. Site data addressed in this BEE is comprised of data previously collected for Remedial Investigations (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact.

COPECs are defined for the purposes of this BEE as those constituents that were detected above the appropriate screening benchmarks in any of the samples from a given medium from a site. These ecological screening concentrations (ESC) are intentionally conservative values and exceedances of these concentrations are not meant to imply ecological risks. A qualitative determination of the potential for adverse effects from site constituents was made based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents, as well as site history, natural geology, and other potential sources.

The character of the land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads interspersed with residential structures, apartments and office buildings. Business and light industrial parks are found along highways, streams and railroad tracks. Surrounding properties include National Priorities List (NPL) sites, State Hazardous Waste Sites, Leaking Underground Storage Tank Sites, and Voluntary Cleanup Program sites. These, as well as general small urban development activities lend to an increase in general anthropogenic inputs in the area.

Elevated concentrations of many metals, relative to the conservatively low ESC, are naturally found within the urban coastal plain region in which FTMM is located. In particular, glauconitic soils which are prevalent at FTMM and have been reported in the creek sediments are naturally high in arsenic, beryllium, chromium, nickel and vanadium as well as other metals.

COPECs identified in soils generally represent limited potential for direct ecological exposure as they are either from subsurface (e.g., landfill near surface samples) or are not within ecological habitats (e.g., near buildings, roads, and parking areas). COPECs identified in groundwater are not representative of direct ecological exposures. COPECs in both soil and groundwater, however, may migrate to nearby surface water or sediment where ecological exposures may occur.

Many organic COPECs identified in soil or groundwater were not identified as COPECs in surface water or sediment, suggesting limited organic contaminant migration to sensitive ecological receptors. Most of these were detected infrequently in soil or groundwater or at low concentrations in relation to the ESC.

Many organic COPECs identified in surface water or sediment were not identified as COPECs in soil or groundwater, suggesting the sources are unrelated to the sites under investigation, or were at low concentrations in relation to the ESC, which are intentionally conservative values. Polycyclic aromatic hydrocarbons (PAHs), in particular, though identified as COPECs, were found in sediments and surface water at concentrations similar to background sample concentrations or at locations indicative of other sources (e.g., at the upstream extent of the site and downstream of active roads or parking areas).

In surface water, lead was most often identified as a COPEC; however, it was found at similar concentrations at most of the sites and in the background samples. Most of the sediment metals identified as COPECs were at concentrations similar to background. Some metals (chromium, copper, lead, mercury, silver, and zinc) were found at a few locations above background levels measured during the BEE investigation, but many of these are similar to those reported for ambient soil in the region (BEM Systems, Inc., 1998) or, in particular, glauconitic soils (Dooley, 2001). Though there may be a potential for some ecological risk due to elevated metals in these limited areas, it is likely that these metals are related to natural geology or other anthropogenic sources.

Though metals may be present above the background concentrations measured in limited areas during the 2010 BEE, many of these concentrations may still be related to natural or general anthropogenic sources and the differences in site concentrations from the measured background concentrations can be a function of the greater number of site samples collected compared to background samples. Regardless, these figures show that the area of metal concentrations greater than the measured background concentrations is limited in extent, with no definitive spatial distribution that would suggest the source of metals are related to sites evaluated in the BEE. Though these may represent a potential ecological risk in limited areas, it is concluded that constituents at FTMM are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at FTMM are not warranted or recommended. **Table ES-1** presents a summary of the results of this BEE.

Table ES-1
Fort Monmouth Main Post and Charles Wood Area
Baseline Ecological Evaluation Summary

ECP Parcel / IRP Site Designation	Associated Building / Feature	Acreage	Proximal Ecological Feature Evaluated	COPECs Identified Based on BEE results	Potential for Ecological Effects from COPECs	Recommendation
Main Post						
IRP Site FTMM-2	Landfill 2	8.10	Mill Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: VOCs, Pesticides, Metals Surface Water: SVOCs, Lead Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-3	Landfill 3	8.00	Lafetra Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: None Surface Water: None Sediment: SVOCs, Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-4	Landfill 4	1.40	Mill Creek	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-5	Landfill 5	3.20	Mill Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: None Surface Water: None Sediment: SVOCs, Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-8	Landfill 8	7.20	Parkers Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: Pesticides Surface Water: None Sediment: Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-12	Landfill 12	7.10	Husky Brook	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-14	Landfill 14	6.90	Husky Brook	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-15	Water Tank	0.30	Parkers Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-16	Building 498, Pesticide Storage	0.12	Oceanport Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-18	Former Training Area	4.85	Parkers Creek	Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
IRP Site FTMM-20 Pre-1941 STP	Pre-1941 Former Sanitary Sewage Treatment Plant	0.77	Parkers Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
IRP Site FTMM-59 Building 1122	Building 1122, Unknown Discharge	0.34	Mill Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: None Surface Water: SVOCs, Lead Sediment: SVOCs,Metals	low	No Additional Ecological Assessment
ECP Parcel 43	Building 1122, "Do-it-Youself" Vehicle Repair Shop	1.54				

Table ES-1
Fort Monmouth Main Post and Charles Wood Area
Baseline Ecological Evaluation Summary

ECP Parcel / IRP Site Designation	Associated Building / Feature	Acreage	Proximal Ecological Feature Evaluated	COPECs Identified Based on BEE results	Potential for Ecological Effects from COPECs	Recommendation
Main Post						
IRP Site FTMM-61 Building 283	Building 283, Leaking UST, Gasoline	0.20		Surface Soil: SVOCs, PCBs, Metals		
ECP Parcel 49	Buildings 283, 288, 291, 292, 293, 295, Former Squier Laboratory Complex	9.09	Parkers Creek	Groundwater: Zinc Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
ECP Parcel 39	Building 1150, Former Photoprocessing Activities	0.50	Mill Creek	Surface Soil: Metals Groundwater: Not Applicable/Not Evaluated Surface Water: SVOCs, Lead Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
ECP Parcel 61	Building 1075, Patterson Army Health Clinic	14.66	Husky Brook	Surface Soil: SVOCs, Metals Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 69	Building 900, Former Tactical Motor Pool	0.31	Oceanport Creek	Surface Soil: Metals Groundwater: None Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
Charles Wood Area						
IRP Site CW-6 FTMM-28	Former Pesticide Storage - Building 2044	0.67	Un-named Wetland, Wampum Brook	Surface Soil: Pesticides, SVOCs, Metals Groundwater: Metals Surface Water: PCBs, Metals Wetland Sediment: Pesticides, PCBs, SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 15	Building 2700, Meyers Center Laboratory	37.99	Shrewsbury Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Metals Surface Water: Lead Sediment: Chromium	low	No Additional Ecological Assessment
IRP Site CW-3A FTMM-25	Suspected Former Landfill, CW-3A	2.08	Shrewsbury Creek	Near Surface Soil: Pesticides, PCBs, SVOCs, Metals Groundwater: Metals Surface Water: SVOCs, Cadmium, Zinc Sediment: Pesticides, SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 27	Southwest portion of CWA that includes the former Pulse Power Center, Machine Shop, Paint and Fabrication facility, Former Motor Pool, and portions of the former Watson Laboratories	29.83	Shrewsbury Creek	Surface Soil: Metals Groundwater: Not Applicable/ Not Evaluated Surface Water: Metals Sediment: Metals	low	No Additional Ecological Assessment
ECP Parcel 28	Former Eatontown Laboratory, Battery Test Facility, Safety Calibration Laboratory Office, Former Motor Pool	37.78	Shrewsbury Creek	Surface Soil: None Groundwater: Cadmium Surface Water: Lead Sediment: Chromium	low	No Additional Ecological Assessment

BEE - Baseline Ecological Evaluation
COPEC - Constituent of
CWA - Charles Wood
ECP - Environmental
IRP - Installation
PAH - Polycyclic
PCB - Polychlorinated
SVOC - Semivolatile
UST - Underground
VOC - Volatile Organic Compound

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Baltimore District, tasked Shaw Environmental, Inc. (Shaw) to perform a Baseline Ecological Evaluation (BEE) at Fort Monmouth (FTMM) to fulfill requirements as set forth in New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (TRSR) [New Jersey Administrative Code (N.J.A.C.) 7:26E-3.11]. This BEE report has been prepared under the Baltimore Architectural and Engineering Services Contract Number W912DR-05-D-0026 (Task Order 40) and is based on the Scope of Work dated June 3, 2008, the Work Plan (WP) dated January 2010, and information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel. A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009, to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

FTMM is located in the central-eastern portion of New Jersey in Monmouth County (**Figure 1-1**). The installation includes Main Post (MP), Charles Wood Area (CWA), and the Evans Area. This WP only addresses the MP (**Figure 1-2**) and the CWA (**Figure 1-3**). The MP encompasses an area of approximately 637 acres and the CWA encompasses an area of approximately 489 acres and is located 1 mile west of the MP. The MP and CWA were selected in 2005 for closure under the Defense Base Realignment and Closure Act of 1990 (BRAC), Public Law 101-510, as amended.

The primary mission of FTMM is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command. The support provided by the Garrison is used by tenants in the performance of research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces. The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The CWA is used primarily for research and development (R&D), testing, housing, and recreation. The CWA research, development, and testing facilities occupy the southwest corner of CWA. The northwest corner formerly consisted of residential units but is currently undeveloped. Residential units currently occupy the southeastern boundary, and the golf course occupies the northeast corner. FTMM was identified as a facility to be closed as part of BRAC 2005. As part of this process, it is necessary for the Army to identify and document the environmental liabilities associated with installations where the BRAC action will involve the disposal of property. The environmental condition of property (ECP) process is the mechanism to provide a summary of the current environmental condition of a property.

A Phase I ECP Assessment was conducted in 2006 and 2007. The final Phase I ECP Report for FTMM was completed on January 29, 2007 (Shaw, 2007). The Phase I ECP evaluated the existing environmental conditions, and characterized the property into parcels according to their environmental condition based on Department of Defense guidelines. Using the results of the Phase I ECP Report, site investigation (SI) sampling recommendations were developed for 21 specific parcels and two areas of concern where no existing data or insufficient data were present to fully evaluate the environmental condition of the property. The SI was conducted in 2007 and 2008 and the final SI Report for FTMM was completed on July 21, 2008 (Shaw, 2008). Eight parcels identified through the FTMM SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property. NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008.

Within the FTMM MP and CWA are 27 active/open Installation Restoration Program (IRP) Sites. The NJDEP indicated to the Army that, pursuant to the TRSR (N.J.A.C. 7:26E-3.11; NJDEP, 2009b), BEEs are required at open/active IRP sites prior to considering No Further Action (NFA) determinations. The NJDEP determination was documented in correspondence pertaining to IRP Sites M-12 and M-14 Landfills (dated July 25, 2007), IRP Site M-18 Landfill (dated August 14, 2007), and Building 283 (dated October 24, 2007). Of the 27 IRP Sites, 14 (FTMM-2, 3, 4, 5, 8, 12, 14, 15, 16, 18, 25, 28, 59, and 61) have been determined to require additional evaluation through the BEE process. In addition to these IRP

Sites, it was determined that a BEE should also be conducted related to FTMM-20, which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007). **Section 3.0** of this WP describes each of the IRP and ECP sites that were selected for inclusion in the BEE process, summarizes the previous findings, and describes the rationale for inclusion.

1.1 PURPOSE AND OBJECTIVES

The BEE is Tier I of the ecological evaluation and ecological risk assessment process as developed by the Site Remediation Program (SRP), and is defined in the TRSR and Site Remediation News (NJDEP, 1997). The BEE was developed to be an efficient and cost-effective screening process. As such, the results of the BEE will determine whether potential ecological impacts are negligible or whether more site-specific ecological evaluation is warranted.

The objective of the BEE at FTMM is to assess whether the presence of constituents of concern in sediments, surface water, soil, and groundwater on MP and CWA have the potential for adverse effects to biological receptors. This assessment is made through the examination of information on each of the 23 identified sites (8 ECP parcels and 15 IRP sites) and the sample results from sediment, surface water, soil, and groundwater at the sites for the co-occurrence of 1) contaminants of potential ecological concern (COPECs), 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. This objective was accomplished based on the results of a data and literature review, a qualitative site visit, field sampling, data analysis and ecological hazard characterization, and an evaluation of the general background characteristics of surface water and sediment in the FTMM area.

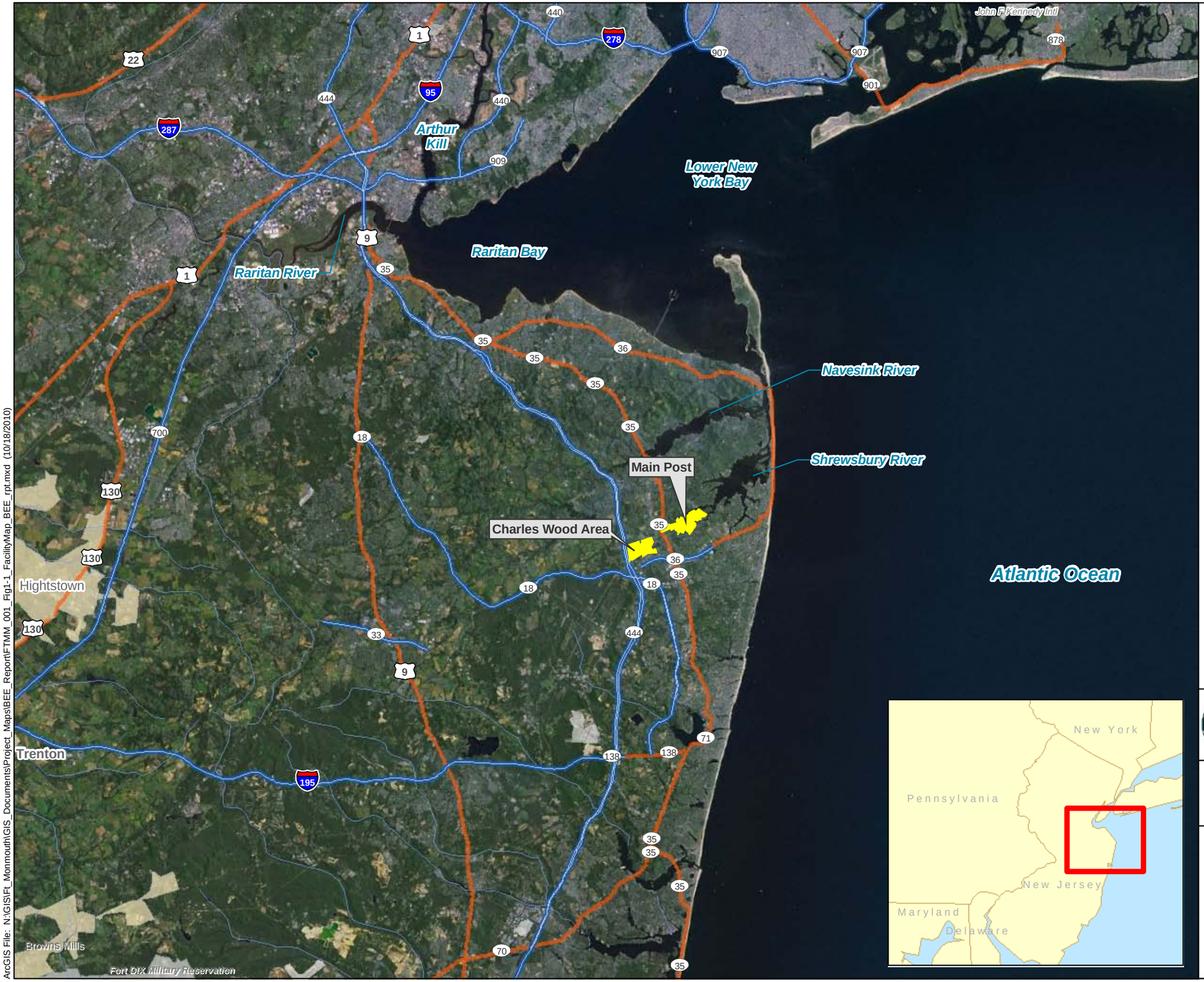
The occurrence of COPECs is determined through a comparison of existing site data with ecological screening levels. The occurrence of environmentally sensitive natural resources and of potential chemical migration pathways is determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database. NJDEP tidal and freshwater wetland maps, U.S. Geological Survey (USGS) topographic maps, and U.S. Department of Agriculture (USDA) Soil Conservation Service soil survey maps.

If it is determined through the BEE process that there are COPECs present, that there are environmentally sensitive natural resources at or near the sites, and that there are potential pathways from the contamination to the environmentally sensitive natural resources, than further ecological investigation or risk assessments may be required. The nature of these investigations or Tier II and Tier III assessments are determined based on the findings of the BEE and conducted in accordance with U.S. Environmental Protection Agency (USEPA, 1989a) and other applicable guidance.

This investigation will be used by the Army to determine if any future needs or actions are necessary in order to obtain a NFA Letter from NJDEP. The NJDEP SRP, as well as the Office of Natural Resources Restoration, will determine whether ecological injuries may have occurred and whether further investigations are required.

1.2 REPORT ORGANIZATION

Section 2.0 describes the location of the sites, provides site background information, and summarizes the environmental setting at FTMM. This section also identifies and describes the individual sites that are addressed in the BEE, including general history and previous investigation results, presence of ecologically sensitive areas, and potential contaminant migration pathways. **Section 3.0** presents the data evaluation performed to identify the COPECs at each site. **Section 4.0** presents a qualitative evaluation of potential for adverse effects at each site. **Section 5.0** presents a summary and conclusions. **Section 6.0** provides a list of references used in developing the WP. **Appendix A** through **Appendix D** contain the data evaluated in this BEE. **Appendix E** contains the applicable NJDEP Ecological Screening Criteria (ESC). **Appendix F** contains the analytical data packages for environmental samples collected as part of the BEE. **Appendix G** contains field documentation and field measured parameters. **Appendix H** contains Fort Monmouth Maximum Background Concentrations from the 1995 SI Report. **Appendix I** contains the NJDEP letter of approval, dated April 28, 2010, of the final WP. **Appendix J** contains Fort Monmouth salinity data for several locations within the Main Post for the period 2004 through 2009.



LEGEND

Ft Monmouth Installation Area

Note: Aerial photography (1-meter resolution) was obtained from ESRIArcOnline World Imagery Map Services.

N

Scale:

0 2 4 8 Miles

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 1-1

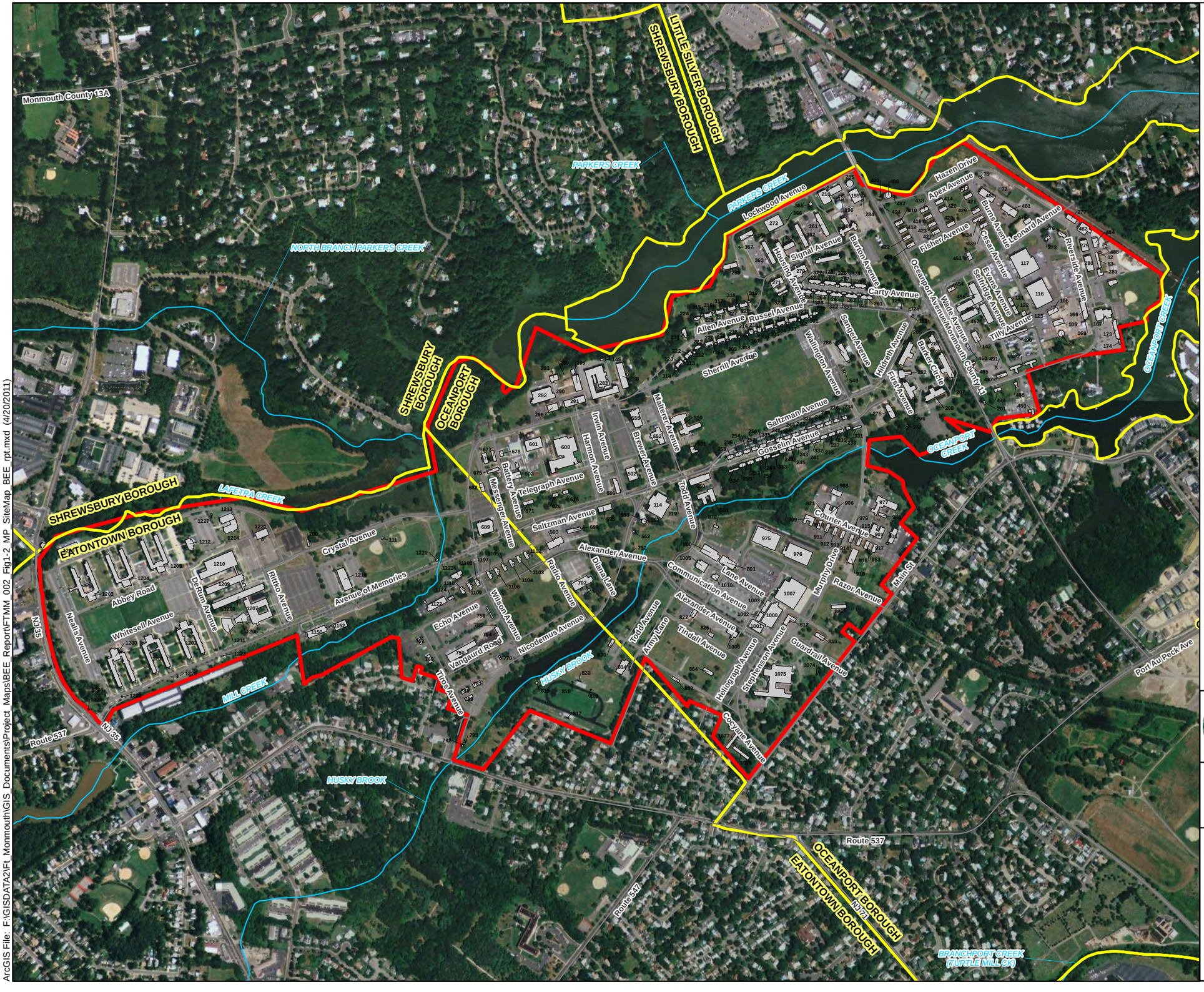
FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

FACILITY LOCATION MAP

FORT MONMOUTH
NEW JERSEY

ArcGIS File: N:\GIS\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_001_Fig1-1_FacilityMap_BEE_rpt.mxd (10/18/2010)

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_002_Fig1-2_MP_SiteMap_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Road Centerline
- Building
- Municipal Boundary
- Installation Boundary

Note: Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

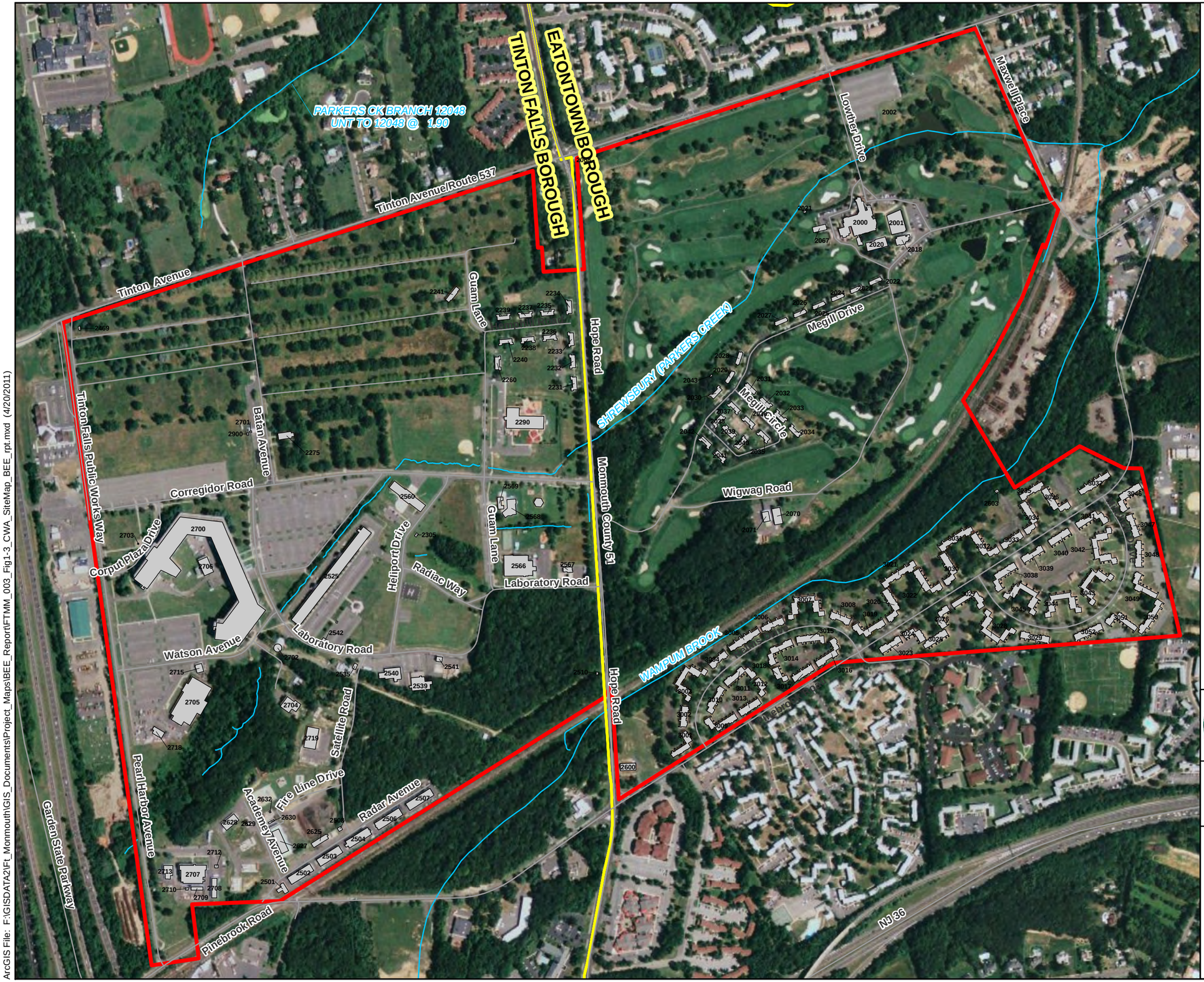
Shaw® Shaw Environmental, Inc.

FIGURE 1-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST SITE MAP

FORT MONMOUTH
NEW JERSEY



LEGEND

- Road Centerline
- Water Feature
- Building
- Municipal Boundary
- Installation Boundary

Note: Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 1-3

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA SITE MAP

FORT MONMOUTH NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_003_Fig1-3_CWA_SiteMap_BEE_rpt.mxd (4/20/2011)

2.0 FORT MONMOUTH BACKGROUND AND GENERAL ENVIRONMENTAL SETTING

The following sections summarize the site background and environmental setting of the geographical area surrounding the FTMM MP and CWA. Included is a description of the site location, site background and current conditions, and environmental setting, including regional and local geology, hydrogeology, topography, surface drainage, ecology, and land use.

2.1 LOCATION AND DESCRIPTION

FTMM is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City, 70 miles northeast of Philadelphia, and 40 miles north of Trenton. The Atlantic Ocean is approximately 3 miles to the east. FTMM falls within the boroughs of Eatontown, Oceanport, and Tinton Falls. The areas surrounding FTMM are characterized by a mixture of residential, commercial, and light industrial uses (**Section 2.4.8**). A review of the land use plans for the surrounding municipalities shows that land uses are compatible with those along the inside perimeter of FTMM. FTMM occupies approximately 1,126 acres and is currently comprised of two operational areas: the MP and the CWA. The two areas are located about 2 miles from one another.

The primary mission of FTMM is to provide command, administrative, and logistical support for the U.S. Army Communications and Electronics Command (CECOM) Headquarters. The Installation performs research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces.

2.1.1 MAIN POST

The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The MP encompasses approximately 637 acres and contains a total of 397 buildings and structures. The MP is bounded by State Highway 35 to the west, Parkers Creek to the north, the New Jersey Transit Railroad to the east, and Main Street and State Highway 71 to the south. Universal Transverse Mercator (UTM) coordinate locations [North American Datum (NAD) 83, Zone 18 (meters)] for the MP include:

- Northeast Corner: 582178.33995, 4463977.92694
- Southeast Corner: 582755.27789, 4463525.90188
- Northwest Corner: 579532.14255, 4462789.29460
- Southwest Corner: 579689.14842, 4462269.63793

2.1.2 CHARLES WOOD AREA

The CWA is used primarily for R&D, testing, housing, and recreation. The CWA R&D and testing facilities occupy the southwest corner of the subpost. Residential areas are located along the southeastern boundary and were formerly located in the northwest corner; the golf course occupies the northeast corner. The CWA, located 2 miles west of the MP, is composed of approximately 489 acres and contains a total of 241 buildings and structures. The CWA is bounded by the Garden State Parkway to the west, Tinton Avenue to the north, Maxwell Place and the New Jersey Transit Railroad to the east, and Pinebrook Road to the south. UTM coordinate locations for the CWA [NAD83, Zone 18 (meters)] include:

- Northeast Corner: 578997.83200, 4462033.09195
- Southeast Corner: 579386.98486, 4460899.58327
- Northwest Corner: 577293.44846, 4461472.84017
- Southwest Corner: 577466.30241, 4460271.56946

2.2 HISTORICAL LAND USE

Historical Army uses of the FTMM MP and CWA property are well documented in *A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey* (U.S. Army Communications-Electronics Life Cycle Management Command,

2005) and *Fort Monmouth: Landmarks and Place Names* (Kozlowski, 2004). The following sections provide a brief summary of the historical uses of the sites.

2.2.1 MAIN POST

The original FTMM Army camp, established for signal troop training in 1917, was located at Little Silver, New Jersey. Historical land use of the area included a 1-mile horse racing track, Monmouth Park, which had been established in 1870 and operated for 20 years. The track was located in the vicinity of Patterson Army Health Clinic near the intersection of Broad Street and Park Avenue. A larger Monmouth Park was reconstructed and opened on July 4, 1890. The oval track was centered on present day Greeley Field. The entire facility encompassed 640 acres (almost all of the MP area). Grandstands and a luxury hotel along Parkers Creek were part of the associated land uses. The Monmouth Park Race Track closed in 1893. Vacated buildings and structures fell into ruin and the hotel burned to the ground in 1915. The land was owned by Redacted - Privacy Act when it was evaluated for use by Camp Little Silver. The Army leased 468 acres from Mr. Redacted - Privacy Act on May 16, 1917. Prior to the Army's lease, the land had been farmed, producing a potato crop for approximately 4 years. The leased area was bounded on the north by the Shrewsbury River (currently referred to as Parkers' Creek), on the west and south by a stone road from Eatontown, and on the east by Oceanport-Little Silver Road. The condition of the land was reported as overgrown and overrun with poison ivy. The land was purchased by the government in 1919.

2.2.2 CHARLES WOOD AREA

The CWA was acquired by the Army in 1941. The CWA tract included the former Monmouth County Country Club (originally Sun Eagles Country Club), Olmstead Gardens, and areas currently occupied by the golf course and Myer Center. FTMM personnel indicated an orchard was located in the golf course area prior to Army acquisition. The Sun Eagles Country Club was constructed in the 1920s and included a clubhouse (currently Gibbs Hall), an 18-hole golf course, a polo field, and an airfield. A 7,000-troop cantonment area was immediately built on the land, including barracks, mess halls, a school building, an office building, a recreation hall, a Post Exchange, an infirmary, and a chapel.

2.3 FACILITY HISTORY

The MP of FTMM was established on June 17, 1917, as Camp Little Silver. The name of the Camp was changed after 3 months to Camp Alfred Vail. The initial mission of the Camp was to train Signal Corps operators for service in World War I. In the first 19 months of the Camp's existence, 129 semi-permanent structures were built, a tent camp established on the site of a former swamp, and a parade ground established on the site of a former marsh. A radio laboratory and an airfield were constructed in 1918. After the war, Camp Vail was designated as the site of the Signal Corps School, the only training area for Signal Corpsmen in the country. All but four World War I structures were demolished by 1924.

In 1925, the facility became a permanent post, and its name was changed to Fort Monmouth. The primary mission of FTMM continued to be Signal Corps training and electronics research. In 1934, laboratory operations were consolidated in a new facility, Squier Laboratory (Building 283). Research on radios and radar continued here until the early 1950s. During World War II, the pace of training increased tremendously at FTMM. The expanded laboratory effort was accomplished by starting new laboratories at other post facilities. Squier Laboratory continued to be the principal laboratory on the MP until 1954. In 1955 and 1956, 72 World War II wooden structures were demolished to make room for permanent structures. These new buildings were used for residential, administrative, commercial, and recreational purposes. A small number of additional administrative buildings were completed during the 1970s, 1980s, and 1990s.

Camp Charles Wood was purchased in 1941 and opened in 1942. The eastern half of the property was formerly a golf course, and the western half was residential property and farmland. During World War II, the Camp was used for training Signal Corpsmen. Antenna shelters were constructed on 26.5 acres of land and used by the Signal Corps Laboratory for R&D purposes.

A new R&D facility, the Myer Center (Building 2700), was completed in 1954. R&D activities that had formerly been conducted at Squier Laboratory and some activities from the Evans Area were

transferred to the Myer Center. To this day, laboratories within the Myer Center facility continue to develop state-of-the-art electronic and communications equipment for use by the U.S. Armed Forces. FTMM has a long history of R&D activity. The majority of this activity has been related to communications and electronic equipment. For the completion of these research activities, FTMM has operated and continues to operate a variety of laboratories. Additionally, FTMM has a significant history of training and housing troops. In support of these activities, FTMM has had a full complement of support activities including vehicle maintenance, warehousing, medical and dental services, photo processing, printing, historic solid waste handling methods (e.g., landfills), and facility infrastructure [e.g., underground storage tanks (USTs)]. Many of the former activities have resulted in environmental releases that are being addressed within the IRP and BRAC ECP processes.

2.4 ENVIRONMENTAL SETTING

The following is a description of the geological and hydrogeological setting of the area as well as the surrounding land use characteristics. The information in the following sections was taken from previous environmental reports produced by Roy F. Weston, Inc. (Weston, 1995) and Shaw (2007; 2008).

2.4.1 CLIMATE

The climate, temperature, and humidity of Monmouth County, New Jersey, is characteristic of the temperate zone of the Mid-Atlantic states. The mean annual temperature for Monmouth County is about 52 degrees Fahrenheit (°F); the summers are generally warm, with an average temperature around 70 °F and average minimum and maximum temperatures exceed 60 and 80 °F, respectively. Winters are moderate, with an average temperature around 30 °F.

Precipitation in Monmouth County averages between 40 and 50 inches per year; slightly more than half the total annual precipitation falls between April and September. Thunderstorms generally occur during the summer months, and hurricanes or tropical storms move northward along the Mid-Atlantic coast.

2.4.2 TOPOGRAPHY

The land surface at the MP is relatively flat and ranges in elevation from 4 feet above mean sea level (ft msl) in the east at Oceanport Creek to 32 ft msl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft msl in elevation. The greatest elevation is at the M-8 Landfill, located on Parkers Creek, and along Lafetra Creek, Mill Creek, and Husky Brook.

At CWA, the land surface slopes from 72 ft msl in the southwest to 20 ft msl at the eastern end of the golf course. In general, the southwestern corner of CWA is gently rolling and has the greatest relief.

2.4.3 SURFACE WATER DRAINAGE AND WETLANDS

Within the western part of the MP, surface water runoff flows either north into Lafetra Creek or south into Mill Creek, both of which originate off site to the west of the MP. Mill Creek flows along the southern boundary of MP until it turns north and joins Lafetra Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of MP. Most of Parkers, Lafetra, and Mill Creeks in the vicinity of the MP are tidally influenced.

Surface water runoff from the southern half of the MP flows into Husky Brook and Husky Brook Lake through a series of drainage ditches and outfalls. Husky Brook originates off site to the west of the MP and flows into Husky Brook Lake on site. Husky Brook exits Husky Brook Lake and flows into Oceanport Creek, which forms the southern boundary of the eastern area. Oceanport Creek and Husky Brook below Husky Brook Lake are tidally influenced.

Parkers and Oceanport Creeks, as well as the tributaries to these creeks, on the Main Post are classified by the NJDEP, for the purposes of determining surface water quality criteria, as fresh nontrout water/saline water (FW2-NT/SE1). This classification indicates that the waterbody may exhibit a saltwater/freshwater interface; the point of demarcation between freshwater and saltwater is determined through salinity measurements. These waterbodies are characterized as freshwater FW2-NT where the mean salinity at high tide is 3.5 parts per thousand (ppt) or less and as saline SE1 where the mean salinity at high tide is greater than 3.5 ppt (N.J.A.C. 7:9B *et seq*.).

Salinity measurements were collected during surface water and sediment sample collection in June 2010 for the BEE investigation. These data are provided in **Appendix G**. Though these data represent conditions at the time of sample collection and not necessarily high tide conditions, several salinity measurements were recorded at or near high tide, based on National Oceanic and Atmospheric Administration (NOAA) tidal charts for Gooseneck Point which is located east of the MP (NOAA, 2010). These data are indicated as such in **Appendix G**. Quarterly salinity data collected by Fort Monmouth between 2004 and 2009 are provided in **Appendix J**. Data known to be collected during high tide are indicated as such in **Appendix J**. A summary of the average high tide salinity for waterbodies in the MP based on the documented high tide data are summarized below in **Table 2-1** and presented in **Figure 2-1**.

Table 2-1. Summary of High Tide Salinity Data

Creek	FTMM Site	FTMM Station	Average High Tide Salinity (ppt) n=3	BEE Station	Average High Tide Salinity (ppt) n=1	Overall Site Average High Tide Salinity (ppt)
Parkers Creek						
	Downgradient of Main Post	21	21.3			21.3
	Site M-18			P49-SW3	20.36	17.5
				P49-SW2	20.13	
		27	15.7			
	Site M-8			M8-SD5	16.3	15.5
		28	14.3			
				M8-SD6	17.37	
				M8-SD7	16.54	
Lafetra Creek						
	Site M-3	5	9.7			9.7
		26	7.0			7.0
		3	4.0			4.0
	Upgradient End of Main Post	14	0.0			0.0
Mill Creek						
	Site M-4	5	9.7			9.7
	Site M-2	24	6.7			3.4
				M2-SD08	0.27	
				M2-SD09	0.27	
				M2-SD10	0.27	
				M2-SD11	0.27	
				M2-SD12	0.27	
				M2-SD13	0.27	
		15	5.3			
	Upgradient End of Main Post	13	0.0			0.0
Oceanport Creek						
	Downgradient of Main Post	22	21.0			21.0
	Site M-16			M16-SD4	21.04	21.0
	Sites M-12/M-14	9	18.3			11.2
				P61-SW1	10.45	
		19	4.3			
	Husky Brook Pond	12	0.0	M14-SW14	0.13	0.0
	Upgradient End of Main Post	11	0.0			0.0

Based on the high tide salinity measurements, the freshwater/saltwater demarcation line lies between Landfill M-3 and the upgradient end of the Main Post on Lafetra Creek, between Landfill M-4 and Landfill M-2 on Mill Creek, and between Landfills M-12 and M-14 and Husky Brook Pond on Husky Brook. Therefore, all of Parkers and Lafetra Creeks, in the vicinity of the sites addressed in this BEE as well as all of Mill Creek on the Main Post west of Landfill M-4 and Oceanport Creek and Husky Brook below Husky Brook Pond are classified as SE1 waters. Areas of these creeks upgradient of the MP are classified as FW2-NT. These freshwater and saltwater designations are consistent with those presented in the Weston SI report (Weston, 1995), which designated all their surface water and sediment sampling locations at the MP to be saltwater with the exception of Landfill M-2, based on field-observations of tidal influence.

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory indicates the presence of wetlands at the MP. Parkers and Oceanport Creeks are classified as estuarine and marine deepwater with estuarine and marine wetland areas. Husky Brook and Lafetra Creek are classified predominantly as freshwater riverine, emergent wetland, and forested/shrub wetland. Husky Brook Lake is classified as a freshwater pond.

Surface water runoff at the CWA is drained by Wampum Brook and Shrewsbury Creek. Shrewsbury Creek flows eastward through the center of the CWA and Wampum Brook flows along the southern boundary. These join east of the CWA before becoming Wampum Lake. Wampum Lake discharges into Mill Creek, which flows through the MP. All surface water streams at the CWA are classified as FW2-NT by the NJDEP for the purposes of determining surface water quality criteria, indicating they are non-trout freshwaters.

Several CWA wetland areas are identified on the USFWS National Wetland Inventory. Most of Shrewsbury Creek and Wampum Brook are classified as freshwater forested/shrub wetland, and the open water in the golf course in the eastern portion of the CWA is classified as a freshwater pond.

2.4.4 REGIONAL AND LOCAL GEOLOGY

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The MP, as well as the CWA and the Evans Area, are located in what may be referred to as the Outer Coastal Plain subprovince or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations, which typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile, were deposited on Precambrian and lower Paleozoic rocks. The sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from the Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units that are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., the Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits are typically confining units (e.g., the Merchantville, Marshalltown and Navesink formations). The individual thicknesses for these units vary greatly (that is, from several feet to several hundred feet).

Based on the regional geologic map, the Cretaceous Age Red Bank and Tinton Sands outcrop at the MP. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at a slope of 35 feet per mile. The upper member of the Red Bank Sand (Shrewsbury) is a yellowish-gray to reddish-brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica, and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium- to fine-grained sand with abundant clay, mica, and glauconite.

The Tinton Sand conformably overlies the Red Bank sand and ranges from a clayey medium- to very coarse-grained feldspathic quartz, and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish-orange or light brown to moderate brown, and from light olive to grayish-olive.

Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton Sand is often highly oxidized and iron-oxide encrusted.

Both the Tinton Sand and the Hornerstown Sand (or marl) crop out at the CWA. The Hornerstown unconformably overlies the Tinton Sand and is a dusky-green to grayish-olive or grayish-olive-green clayey glauconitic sand that may oxidize to moderate reddish-brown and dusky red. The percentage of quartz sand ranges from a few percent to 30 percent. Approximately half of this formation is composed of silt and clay.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the MP and dips to the southeast at a slope of 20 feet per mile. The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County.

2.4.5 SOILS

According to the Monmouth County Soil Survey (USDA, 2008), much of the MP is covered by urban land (developed land with disturbed soils). The majority of the area is of the Udorthents-Urban land complex with 0 to 8 percent slopes (UDauB). The following soil series and classification units are mapped in the MP Area:

AptAV – Appoquinimink-Transquaking-Mispillion complex, 0-1% slope, very frequently flooded

DoeB – Downser sandy loam, 2-5% slopes

FrkB – Freehold sandy loam, 2-5% slopes

FrrC – Freehold-Urban land complex, 0-10% slopes

HumAt – Humaquepts, 0-3% slopes, frequently flooded

KrhB – Kresson loam, 2-5% slopes

ShrA – Shrewsbury sandy loam, 0-2% slopes

ThgB – Tinton loamy sand, 0-5% slopes

ThhB – Tinton-Urban land complex, 0-5% slopes

UdaB – Udorthents, 0-8% slopes

UdauB – Urban land complex, 0-8% slopes

The CWA is covered by less urban land complexes than the MP. The Shrewsbury sandy loam, Freehold sandy loam, and Freehold-Urban land complex are the dominant soil types. The following soil series and classification units are mapped in the CWA:

AtsA – Atsion sand, 0-2% slopes

EveB – Evesboro sand, 0-5% slopes

FrkB – Freehold sandy loam, 2-5% slopes

FrkC – Freehold sandy loam, 5-10% slopes

FrrC – Freehold-Urban land complex, 0-10% slopes

HocA – Holmdel sandy loam, 0-2% slopes

HofB – Holmdel-Urban land complex, 0-5% slopes

PHG – Pits, sand and gravel

ShrA – Shrewsbury sandy loam, 0-2% slopes

UdauB – Udorthents-Urban land complex, 0-8% slopes

2.4.6 HYDROGEOLOGY

FTMM lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region. This groundwater region is underlain by undeformed unconsolidated to semi-consolidated sedimentary deposits. Water chemistry near the surface is variable with low dissolved solids and high iron concentrations. In the areas underlain by glauconitic sediments such as the Red Bank and Tinton sands, the water chemistry is dominated by calcium, magnesium, and iron. The sediments in the area of the site were deposited in fluvial-deltaic to nearshore environments.

The water table aquifer is identified as part of the composite confining units or minor aquifers, which include the Navesink Formation, the Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, the Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation. The Hornerstown Sand probably serves as an aquitard or aquiclude rather than as an aquifer due to its high silt and clay content.

2.4.7 NATURAL BACKGROUND CONSTITUENTS

The local geology and soil types determine the levels of naturally-occurring constituents present in soil. For instance, glauconitic soils, such as those present in the Cretaceous Age Red Bank and Tinton Sands of the FTMM area, can exhibit high concentrations of naturally-occurring arsenic and beryllium (Dooley, 2001), and the upper part of the Tinton Sand is often highly iron-oxide encrusted. The ambient levels of metals in soils of the urban coastal plain region are reported by Sanders (2003) based on an extensive characterization study conducted by BEM Systems, Inc. (1998). These natural background levels are meant to be inclusive of naturally-occurring levels in soil as well as those from regional deposition but not those from point source contamination. **Table 2-2** presents a summary of these ambient levels.

Naturally-occurring metals present in soil also affects the concentrations of these constituents measured in groundwater. Elevated concentrations of arsenic and lead in groundwater at FTMM have been found within the glauconitic-rich soil layers and are most likely attributed to these natural conditions (FTMM, 2011). The presence of glauconitic soils were noted in sediment samples collected during the BEE investigation, particularly in Parkers, Lafetra, and Mill Creeks in the MP (**Appendix G**). Dooley (2001) reported higher than ambient concentrations in glauconitic soils for several metals. In particular, the 90th percentile concentrations of aluminum [49,130 milligrams per kilogram (mg/kg)], arsenic (77 mg/kg), barium (340 mg/kg), beryllium (9.6 mg/kg), chromium (769 mg/kg), cobalt (11 mg/kg), nickel (24 mg/kg), vanadium (213 mg/kg), and zinc (mg/kg) were greater than those reported as ambient soil levels for the urban coastal region (BEM Systems, Inc).

2.4.8 ECOLOGY

The MP and CWA are within the Atlantic Coastal Plain, in the Outer Coastal Plain physiographic region of New Jersey, and contain both upland and wetland ecological habitats. Coastal plains are typically of low relief and consequently suitable for the formation of wetlands. Areas of wetlands are present on both the MP and CWA, with estuarine and fresh water wetlands present on the MP. Much of the upland areas of the MP and CWA consist of extensive areas of regularly mowed lawns and landscaped areas. However, upland ecological habitats are present, and include forested areas and old field herbaceous habitat. Except for occasional transient species, no federally listed or proposed threatened or endangered flora or fauna are known to exist on the site. There was one observance in 1992 of a New Jersey listed endangered species, the clustered sedge. In addition, no federal or state listed species were observed during the BEE site visit conducted on the MP and CWA on September 15, 2009. This section includes descriptions of the important ecological habitats present at the MP and CWA. As indicated in **Section 2.4.3**, the USFWS National Wetland Inventory maps have designated wetland areas at the MP and CWA. Areas along Oceanport Creek and Parkers Creek are designated estuarine and marine wetlands or open waters; areas along Mill Creek, Husky Brook, Lafetra and Shrewsbury Creeks are freshwater emergent or forested/shrub wetlands.

Estuarine Wetlands. Estuarine wetlands on the MP are associated with the tidal brackish waters of Parkers and Oceanport Creeks. They include both mesohaline areas of moderate salinity (5-18 ppt) and oligohaline areas of low salinity (0.5-5 ppt). Emergent wetlands in mesohaline tidal areas of New Jersey are often characterized by smooth cordgrass (*Spartina alterniflora*) and common reed (*Phragmites*

australis). Other species present often include marsh elder (*Iva frutescens*), eastern baccharis (*Baccharis halimifolia*), spike grass (*Distichlis spicata*), salt hay (*Spartina patens*), seaside goldenrod (*Solidago sempervirens*), and salt marsh asters (*Aster subulatus* and *A. tenuifolius*). Where present on the MP, estuarine wetlands are dominated by common reed. Common reed tends to create a monoculture and, although they can provide valuable habitat, are generally not considered to be high quality wetlands. Common reed wetlands provide nesting habitat for many avian species, including Pied-billed Grebe (*Podilymbus podiceps*), Black-crowned and Yellow-crowned Night Heron (*Nycticorax nycticorax* and *Nyctanassa violacea*), American and Least Bittern (*Botaurus lentiginosus* and *Ixobrychus exilis*), Green Heron (*Butorides virescen*s), Coot (*Fulica americana),* Common Moorhen (*Gallinula chloropus*), King and Virginia Rail (*Rallus elegans* and *Rallus limicola*), grackles (*Quiscalus* sp.), Red-winged Blackbird (*Agelaius phoeniceus*), Swamp Sparrow (*Melospiza georgiana*), Marsh Wren (*Cistothorus palustris*), and several waterfowl species. White-tailed deer (*Odocoileus virginianus*), northern raccoon (*Procyon lotor*), and other mammalian species use common reed wetlands for refuge cover. In many areas of the MP steep banks along the creeks limit the extent of the riparian zone and thereby prevent the formation of extensive wetlands. These areas have a narrow riparian zone dominated by marsh elder, also known as high-tide bush. Avian wildlife species observed utilizing estuarine wetlands at the MP during the BEE site visit included Double-crested Cormorant (*Phalacrocorax auritus*), Common Egret (*Ardea alba*), Great Blue Heron (*Ardea herodias*), Little Blue Heron (*Egretta caerulea*), Wilson's Plover (*Charadrius wilsonia*), and numerous small sandpipers (*Calidris sp.*).

Freshwater Wetlands. Freshwater wetlands occur on both the MP and CWA. The most extensive of these are forested wetlands, with areas of emergent wetlands associated with the fresh water portions of the several creeks that traverse the MP and CWA. Forested wetlands in the area are typically dominated by red maple (*Acer rubrum*) and other hardwoods, including sweetgum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*). Shrubs/vines include arrowwood (*Viburnum dentatum*), coastal sweet pepperbush (*Clethra alnifolia*), and greenbrier (*Smilax rotundifolia*). Herbaceous species found in these forested wetlands include smartweed (*Polygonum sp.*), jewelweed (*Impatiens capensis*), violets (*Viola sp.*), asters, sedges and ferns. Forested wetlands at the MP and CWA may be utilized by mammalian species including white-tailed deer, eastern gray squirrel (*Sciurus carolinensis*), northern raccoon, Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Numerous avian species are known to utilize forested wetlands habitat for nesting and foraging including: Barred Owl (*Strix varia*), Veery (*Catharus fuscescens*), Wild Turkey (*Meleagris gallopavo*), American Woodcock (*Scolopax minor*), and several species of woodpeckers and warblers. Although several streams are present at the MP and CWA, fresh water emergent wetlands are limited in some areas due to stream bank stabilization. Fresh water emergent vegetation includes cattail (*Typha latifolia*), water smartweed (*Polygonum amphibium*), arrowhead (*Sagittaria sp.*), pondweed (*Potamogeton sp.*), sedges, and rushes. Although limited in extent, emergent wetlands at the MP and CWA may provide habitat for muskrat (*Ondatra zibethicus*), Mallard (*Anas platyrhynchos*) and other species of water fowl, and for herptiles including northern water snake (*Nerodia sipedon*) and several frog species. Avian species observed utilizing freshwater wetlands or adjacent open waters at the MP during the BEE site visit included Mallard and Belted Kingfisher (*Megaceryle alcyon*).

Forested Uplands. Although most upland areas of the MP and CWA are developed, patches of upland forest are present in several areas. Dominant tree species include red oak (*Quercus rubra*), chestnut oak (*Quercus prinus*), tuliptree (*Liriodendron tulipifera*), and sweetgum (*Liquidambar styraciflua*). Understory species include sassafras (*Sassafras albidum*), flowering dogwood (*Cornus florida*), and black cherry (*Prunus serotina*). Mammals utilizing forested uplands include white-tailed deer, eastern gray squirrel, northern raccoon, Virginia opossum, striped skunk, eastern chipmunk (*Tamias striatus*), red fox (*Vulpes vulpes*), and white-footed mouse (*Peromyscus leucopus*). Avian species inhabiting forested uplands at the MP and CWA and utilizing these areas for foraging and nesting habitat are likely to include Red-tailed Hawk (*Buteo jamaicensis*), Cooper's Hawk (*Accipiter cooperii*), Blue Jay (*Cyanocitta cristata*), Tufted Titmouse (*Baeolophus bicolor*), Carolina Chickadee (*Parus carolinensis*), Red-eyed Vireo (*Vireo olivaceus*), Wood Thrush (*Hylocichla mustelina*), and several species of wood warblers. Avian species observed or heard in forested upland habitat during the BEE site visit included Catbird (*Dumetella carolinensis*), Carolina Chickadee, and American Robin (*Turdus migratorius*).

Old Field Habitat. Old field habitats include formerly mowed areas where the vegetation includes grasses and forbes and often immature trees. Old field habitat at the MP includes grasses, many forbes including Queen Ann's lace (*Daucus carota*), pokeweed (*Phytolacca americana*), goldenrod (*Solidago sp.*), milkweed (*Asclepias syriaca*), and sparse saplings of tree species including eastern red cedar (*Juniperus virginiana*) and winged sumac (*Rhus copallinum*). Mammals utilizing this habitat at the MP and CWA are likely to include include white-tailed deer, groundhog (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), and meadow vole (*Microtus pennsylvanicus*). Deer and groundhog burrows were observed in this habitat at MP in the vicinity of IRP Site M-14. Avian species that prefer open old field habitat and are likely to be present at the MP and CWA include Northern Mockingbird (*Mimus polyglottos*), Eastern Bluebird (*Sialia sialis*), American Goldfinch (*Spinus tristis*), Rufus-sided Towhee (*Pipilo erythrophthalmus*), Common Yellowthroat (*Geothlypis trichas*), and other warblers, and several sparrow species. Birds observed or heard in or in the vicinity of old-field habitat during the BEE site visit included Mourning Dove (*Zenaida macroura*), House Finch (*Carpodacus mexicanus*), Carolina Wren (*Thryothorus ludovicianus*), Fish Crow (*Corvus ossifragus*), and Northern Mockingbird.

2.4.9 SURROUNDING LAND USE

In addition to ambient levels of background constituents, contaminants can also be present in the environment within the region of FTMM due to proximal off-site sources. This section describes the surrounding general land use, properties observed during surveys, and a review of regulatory databases. This information is adapted from that contained in the Environmental Condition of Property Report (Shaw, 2007) and recent searches of the NJDEP web-based application (http://www.nj.gov/dep/gis/deptutorial.htm#), performed to update information obtained during the 2007 effort.

2.4.9.1 ADJACENT PROPERTIES

The character of land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads, periodically interspersed with a residential structure, apartments, or an office building. Boundaries between towns are typically unnoticeable, although each town still tries to maintain a downtown "Main Street" shopping district. New tracts of housing subdivisions offer privacy from commonly traveled roads. Old residential development is characteristically along grid-style side roads which are quickly becoming encroached with small business and commercial service endeavors. Business and light industrial parks are tucked away along highways, streams, and RR tracks. **Figure 2-2** presents a schematic representation of general land use categories surrounding FTMM.

Main Post. The MP is surrounded by four towns. Little Silver lies to the northeast, Oceanport to the southeast, Eatontown to the southwest, and Shrewsbury to the northwest. The northeast boundary of MP is bordered by the Shrewsbury River, from the northeast corner to the area north of Battery Avenue, where the water narrows and becomes known as Parkers Creek. The downtown commercial and business district of Little Silver runs along Oceanport Avenue. Light industrial businesses are located east of Oceanport Avenue. Commercial businesses, including an animal hospital are located along the west side of Oceanport Avenue. An apartment complex is also located along the west side of Oceanport Avenue. Gas stations, the railroad station, and various stores surround the intersection of Oceanport Avenue and Sycamore Avenue. Further to the east, development is primarily residential. The eastern boundary of the MP is the railroad tracks with residential development along Horseneck Point Road.

The southeast boundary of the MP is bordered by Oceanport Creek, from the southeast corner to Wallington Avenue, where the water narrows. The area south of Oceanport Creek and east of the railroad tracks is developed with residential structures. Monmouth Park Racetrack is just west of the railroad and south of Bridgewaters Drive. Main Street in Oceanport borders the MP to the south, west of Oceanport Avenue. Residential houses, a church, and houses converted to small service businesses are located along Main Street to the south. The land immediately adjacent to the MP, north along Main Street, is residential development and a fire station. Another small area of residences borders the south boundary of MP north of the intersection of Main and Broad Streets. The Eatontown Sewage Authority, a church, residences, apartments, and the Eatontown municipal building are adjacent to the south of the MP along Throckmorton Avenue.

The intersection of Broad and Main Streets, Eatontown is located to the southwest of the MP. Small commercial stores, restaurants, and gas stations line Main Street in this area. A park surrounds Wampum Lake north of West Street. Storage USA is immediately adjacent along the southwest boundary of the MP, developed with an office and six self-service storage buildings. Two gas stations are located at the intersection of Main Street and Tinton Avenue. North along Main Street, the area is developed with banks, hotels, office buildings, and shopping centers. The Revmont Park Office Building is immediately adjacent to the MP on the northwest corner of the property, followed by Register Plaza Office Park, and a shopping center. As Main Street heads north towards Sycamore Avenue, development trends towards older residential structures. North of MP, Lafetra Creek runs along the property line. North of the creek are wooded areas with new subdivision housing developments. The entire area north of MP to Sycamore Avenue is primarily residential development.

Table 2-3 highlights specific properties observed during the adjacent property survey and the regulatory database review as presented in the Environmental Condition of Property Report (Shaw, 2007). The properties highlighted were documented with releases of contaminants or were observed with potentially hazardous substances on their premises.

Table 2-3. Properties Observed During Main Post Property Survey

Location	Property	Concern	Potential Impact
Oceanport Avenue & Main Street	Abandoned Shell Gas Station	Observed monitoring wells. State Hazardous Waste Site (SHWS) – Closed with restrictions 3/2005 (1).	Low due to hydraulic separation by Oceanport Creek.
61/63 Main Street	Residence	Observed above-ground storage tank (AST) along MP fence line.	High if there is a release.
9 Monmouth Park Place	Hi Tech Turf	Observed 55-gallon drum and AST. SHWS – Active 4/2004 (2).	High due to status and upgradient location.
25 Lake Avenue		SHWS – Active 10/2005 (3).	High due to status and upgradient location.
330 Broad Street		SHWS – Active 04/1997 (4).	Moderate due to date and upgradient location.
25 Cloverdale Avenue		SHWS – Active 09/2005 (5).	High due to status and upgradient location.
29 Rose Court	Residence	New Jersey Spills & Voluntary Cleanup Program (VCP) – 11/1999 (6).	Moderate due to date and upgradient location.
Broad & Rose	Getty Gas Station	Observed monitoring wells. SHWS – Active 08/2004 (7).	High due to status and upgradient location.
Route 35 & Tinton Avenue	Lukoil Gas Station – previous location of Mobil Station	SHWS – Active 04/1997 (8).	Moderate due to date and upgradient location.
Route 35 & Tinton Avenue	Exxon Gas Station	Historic Leaking Underground Storage Tank (historic LUST) 1991 (9).	Moderate due to date and upgradient location.
160 Main Street (Route 35)	Abandoned Amoco Gas Station	Observed monitoring wells. SHWS – Active 01/2001 (10).	High due to status and upgradient location.
37 Tinton Avenue	Residence	SHWS – Active 10/2000 (11).	High due to status and upgradient location.

Charles Wood Area. The CWA is surrounded by two towns. Eatontown lies to the east and south and Tinton Falls lies to the west and north. Tinton Avenue runs along the entire northern boundary of the CWA. North of the Golf Course, across Tinton Avenue, the land is developed with apartment complexes and the Ranney School. The northern branch of Parkers Creek also bisects this area. The area north of Tinton Avenue and west of Hope Road is developed with apartments, residential structures

and the Monmouth Regional High School. Further west on Tinton Avenue, across the Garden State Parkway, a nursery business occupies a large tract of land.

Tinton Falls Borough Department of Public Works facilities are located along the entire western property line of the CWA. Construction of new buildings is underway closest to Tinton Avenue. South of the new construction are the police department buildings. Further south are Department of Public Works storage warehouses for equipment, sand, and mulch, parking, a fueling station, and the equipment/truck storage yard. The Department of Public Works also operates a recycling collection center in this area. The southwest adjacent land appears to be cultivated with rows of bushes or trees. West of the Department of Public Works facilities is the Garden State Parkway and the Monmouth County Highway Department Site 3&6. Materials, equipment, sand, and mulch are stored outside in this area.

The southern boundary of the CWA is Pinebrook Road. A light industrial park is located along Park Road, from the southwest corner of the CWA to Hope Road. Businesses in this area include Standard Co., Hatteras Press, the Residence Inn, Garden State Delivery, IROC, DRS Technologies, Comcast, Ranger Industries, the Marriott, and Applebee's. Several commercial establishments are located along Pinebrook Road, south of the CWA, including an air conditioning and heating contractor, a construction contractor, and a 7-Eleven convenience store.

East of Hope Road, along Pinebrook Road to the south, the area is developed with office buildings and apartment complexes. Further south is Route 36. Apartment complexes and the Vetter School are located adjacent to the southeast corner of the CWA. The Eatontown Department of Public Works is located east of the CWA along Pinebrook Road. The facility has storage buildings, outside storage of materials and equipment, and a fueling station. A railroad switch storage yard and the Indian Head Enterprises (utility, pipe, and sewer company) is also located in this area along Pinebrook Road. Another railroad materials and equipment storage yard boarders the CWA property to the east off of Maxwell Road. The Borough of Eatontown also operates a recycling collection center along Lewis Street to the east of the CWA.

Maxwell Road runs along the eastern border of the CWA golf course. Fiore Paving facilities are located along Maxwell Road next to the railroad tracks. Further north along Maxwell the area is developed with residential structures. Several residences were observed to have ASTs.

Table 2-4 highlights specific properties observed during the adjacent property survey and the regulatory database review conducted in 2007. The properties highlighted were documented with releases of contaminants in the Environmental Data Resources, Inc. (EDR) report or were observed with potentially hazardous substances on their premises.

Table 2-4. Properties Observed During CWA 2007 ECP Property Survey

Location	Property	Concern	Potential Impact
539 Tinton Avenue	Concession Supply Company	Observed AST & Cylinders. SHWS – Active 05/2002. Inst Control – 08/2005 (1).	High due to status and upgradient location.
535 & 556 Tinton Avenue	Tinton Falls Borough	Observed AST and outside equipment /materials storage. SHWS – Active 10/1999 (2).	High due to status and upgradient location.
600 Tinton Avenue	CECOM (7)	SHWS – Active 12/2005 (3).	High due to status and upgradient location.
Pinebrook Road & GSP	Monmouth County Highway Dist 3&6	Observed outside storage of equipment/materials. SHWS – Active 11/1995. Class. Exempt area (4).	High due to status and upgradient location.
100 Park Road	Standard Company	Observed outside storage of equipment/materials. Historic LUST/New Jersey Release.	Low due to NFA 09/1994.

Table 2-4. Properties Observed During CWA 2007 ECP Property Survey

Location	Property	Concern	Potential Impact
45 Park Road	Hecon Corporation	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – No Further Remedial Action (NFRA) Transport, Storage, and Disposal Facility (TSDF)	Low due to NFA 11/1998.
14 Park Road	Mazel Company	CERCLA-NFRA	Low due to NFA 04/1984.
1 Coldstream Way	Metallurgical Industries	Area observed to be vacant field. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – Remedial Action (RA) 06/1997. SHWS – Active 03/1995. Industrial Site Recovery Act – 03/1995 (5).	High due to status and upgradient location.
Pinebrook & Hope Roads	Fitzpatrick & Associates	Observed outside equipment/materials storage.	High if there is a release.
250 Pinebrook Road	Eatontown Borough	Observed AST and outside equipment /materials storage. SHWS – Closed with Restrictions - 08/1995. Inst Control - (6)	Moderate due to continued fueling operations and closure status with restrictions.
37 Maxwell Road	Fiore Paving	Observed outside equipment/materials storage. New Jersey manifest.	High if there is a release.
Maxwell & Mill	Residence	Observed AST.	High if there is a release.

Numerous adjacent properties have the potential to impact the surface water quality in the vicinity of FTMM. Historically, there was concern that FTMM sewage plants were degrading surface water quality. In response to NJDEP concerns that sewage discharges were causing deleterious effects on Parkers Creek, an evaluation of the effluent and the receiving streams was performed in 1971. The evaluation concluded that the effluent met all written requirements of federal, state and local water pollution agencies. There was no visual evidence of contamination, no noticeable sewage odor and the color and turbidity of the effluent were less than that of the receiving stream (First U.S. Army Medical Laboratory, 1971). Another evaluation of the impact of wastewater discharges on the environment concluded that the impact was minimal (USAEHA, 1977). It was noted that the condition of the streams entering the installation were of similar or poorer quality due to a variety of upstream industrial operations such as Styrofoam cup manufacturing, metal plating and photo processing as well as domestic discharges. Water samples collected from Wampum Brook upstream of the CWA Sewage Treatment Plant (STP) outfall indicated no evidence of life in the brook (USAEHA, 1976).

2.4.9.2 STANDARD ENVIRONMENTAL RECORD SOURCES

A comprehensive search of state and federal environmental databases was undertaken for the facility as part of the ECP Report (Shaw, 2007) and any listed sites within standard search distances were identified. Two EDR area studies were performed: one for the MP and one for the CWA. The findings of this search, as it pertains to the FTMM surrounding land use and this BEE, are summarized below and the complete search results are provided in Appendix K of the ECP Report (Shaw, 2007).

Main Post Off-Site Facilities Summary. **Table 2-5** summarizes the results of the EDR search for the MP area. Within each database type, the location relative to MP (i.e., upgradient or downgradient)

has been provided. The location of these facilities relative to MP was based on topographic gradient, as identified on the USGS topographic quadrangle maps provided in the EDR report.

One Resource Conservation and Recovery Act (RCRA) Corrective Action Activity Site (CORRACTS) facility is reported within the 1-mile radius of the MP. The Lowe's Home Improvement Center, 118 Highway 35 South, Eatontown, is approximately ¾-mile south and upgradient from the MP. Twenty RCRA Small Quantity Generators (SQGs) facilities are reported within the ¼-mile radius of the MP. A total of 73 SHWS facilities are reported within the 1-mile radius of the MP. Eight leaking underground storage tank (LUST) facilities are reported within a ½-mile radius of the MP, an additional 22 are on the historical LUST database (this database has been inactive since 2002), and 19 facilities are also listed as registered UST sites. A total of 126 participants are listed in the VCP within a ½-mile radius of the MP.

The facilities identified in the EDR search include several service stations with USTs and other light industrial facilities. Though many are hydraulically separate from MP to prevent the migration of shallow groundwater to the MP, migration of contaminants towards Parkers Creek, Oceanport Creek, and their tributaries is feasible.

Table 2-5. MP Standard Environmental Record Results

Record(s) Source for FTMM MP	Number of Sites	Minimum Search Distance (miles)
Federal RCRA CORRACTS Facilities	1	1.0
Federal RCRA Small Quantity Generators	21	0.25
New Jersey State Hazardous Waste Sites	73	1.0
New Jersey State Landfill, Historic Landfill, and Approved Class B Recycling Facilities	3	0.5
New Jersey Active LUST Facilities	8	0.5
New Jersey Historical LUST Facilities	22	0.5
New Jersey Engineering Controls	1	0.5
New Jersey Institutional Controls	4	0.5
New Jersey VCP Facilities	126	0.5
New Jersey Registered UST Facilities	19	0.25

Charles Wood Area Off-Site Facilities Summary. **Table 2-6** summarizes the results of the EDR search for the CWA. Within each database type, the location relative to CWA (i.e., upgradient or downgradient) has been provided. The location of these facilities relative to CWA was based on topographic gradient, as identified on the USGS topographic quadrangle maps provided in the EDR report.

One National Priorities List (NPL) facility, the Naval Weapons Station Earl, is approximately ¾-mile southwest of the CWA in Colts Neck Township. Two RCRA CORRACTS facilities are reported within the ½-mile radius of the CWA: the Lowe's Home Improvement Center and the Naval Weapons Station Earl. One CERCLIS facility is reported within the ½-mile radius of the CWA; the Metallurgical Industries site participates in a state-lead cleanup program. Two additional CERCLIS facilities are listed as No Further Remedial Action Planned (NFRAP): Mazel Chemical Company and Hecon Corporation. Hecon Corporation is listed as a RCRA TSDF. There is one facility within a ¼-mile radius listed as a RCRA Large Quantity Generator (The Standard Group) and nine listed as RCRA SQGs, including public works facilities and cleaners. A total of 53 SHWS facilities are reported within the ½-mile radius of the CWA. Two facilities are listed in the Historic Solid Waste Facility Directory (Tinton Falls Borough Compost and All County Recycling) and are located upgradient of the CWA. Four LUST facilities are reported within a ½-mile radius of the CWA, an additional 20 are on the historical LUST database (this database has been inactive since 2002), and 16 facilities are also listed as registered UST sites. A total of 16 participants are listed in the VCP within a ½-mile radius of the CWA.

The facilities identified in the EDR search include several service stations with USTs and other light industrial facilities. Some of these sites are located upgradient and contaminant migration in shallow groundwater from these sites could impact groundwater at the CWA. Many, though, are hydraulically separate from CWA preventing the migration of shallow groundwater to the CWA; migration of contaminants towards Shrewsbury Creek and Wampum Brook is feasible.

Table 2-6. CWA Standard Environmental Record Results

Record(s) Source for FTMM Charles Wood Area	Number of Sites	Minimum Search Distance (miles)
Federal NPL Facilities	1	1.0
Federal RCRA CORRACTS Facilities	2	1.0
Federal CERCLIS Facilities	1	0.5
Federal CERCLIS-NFRAP Facilities	2	0.5
Federal RCRA TSD Facilities	1	0.5
Federal RCRA Large Quantity Generators	1	0.25
Federal RCRA Small Quantity Generators	9	0.25
New Jersey State Hazardous Waste Sites	53	1.0
New Jersey State Landfill, Historic Landfill, and Approved Class B Recycling Facilities	3	0.5
New Jersey Active LUST Facilities	4	0.5
New Jersey Historical LUST Facilities	20	0.5
New Jersey Institutional Controls	3	0.5
New Jersey VCP Facilities	16	0.5
New Jersey Registered UST Facilities	16	0.25

2.5 SITE DESCRIPTION AND ENVIRONMENTAL SETTING

The Phase I ECP Assessment conducted in 2006 and 2007 evaluated the existing environmental conditions of FTMM MP and CWA (including IRP sites) and MP and CWA were characterized into 95 parcels according to their environmental condition (Shaw, 2007). **Tables 2-7 and 2-8** list all ECP parcels and IRP sites at CWA and MP, respectively. **Tables 2-7 and 2-8** are organized by ECP parcel, with all IRP sites listed with the parcel in which they are included. Within the FTMM MP and CWA are 21 parcels that were evaluated through the FTMM SI under the BRAC 2005 ECP process and 27 active/open IRP Sites. Within the 27 active/open IRP Sites, 14, as well as 1 IRP site listed as Response Complete (Fort Monmouth, 2007), have been determined to require additional evaluation through the BEE process.

In addition, eight of the 21 ECP parcels included in the FTMM SI under the BRAC 2005 ECP process are deemed to require a BEE based on NJDEP correspondence. In total, 23 sites/parcels were evaluated as part of this BEE. The IRP sites and ECP parcels evaluated as part of the BEE are summarized in **Table 2-9**.

This section provides brief site descriptions and summaries of the previous investigations or remedial actions at the IRP and ECP sites that are addressed in the BEE. Though detected concentrations were often compared to criteria within these previous reports, the criteria are not necessarily ecologically based. The comparisons discussed in this section are simply summarized and do not imply ecological risks.

Table 2-9: Fort Monmouth Main Post/Charles Wood Area BEE Sites

Site No.	Associated Building/Feature	AEDB-R No.	Proximal Ecological Feature to be Evaluated
Main Post			
IRP Site M-2	Landfill 2	FTMM-02	Mill Creek
IRP Site M-3	Landfill 3	FTMM-03	Lafetra Creek
IRP Site M-4	Landfill 4	FTMM-04	Mill Creek
IRP Site M-5	Landfill 5	FTMM-05	Mill Creek
IRP Site M-8	Landfill 8	FTMM-08	Parkers Creek
IRP Site M-12	Landfill 12	FTMM-12	Husky Brook
IRP Site M-14	Landfill 14	FTMM-14	Husky Brook
IRP Site M-15	Water Tank	FTMM-15	Parkers Creek
IRP Site M-16	Building 498, Pesticide Storage	FTMM-16	Oceanport Creek
IRP Site M-18	Former Training Area	FTMM-18	Parkers Creek
IRP Site Pre-1941 STP	Pre-1941 Former Sanitary STP	FTMM-20	Parkers Creek
IRP Site Building 1122	Building 1122, Unknown Discharge	FTMM-59	Mill Creek
IRP Site Building 283	Building 283, LUST, Gasoline	FTMM-61	Parkers Creek
ECP Parcel 39	Building 1150, Former Photoprocessing Activities	N.A.	Mill Creek
ECP Parcel 43	Building 1122, "Do-It-Yourself" Vehicle Repair Shop	N.A.	Mill Creek
ECP Parcel 49	Buildings 283, 288, 291, 292, 293, 295, Former Squier Laboratory Complex	N.A.	Parkers Creek
ECP Parcel 61	Building 1075, Patterson Army Health Clinic	N.A.	Husky Brook
ECP Parcel 69	Building 900, Former Tactical Motor Pool	N.A.	Oceanport Creek
Charles Wood Area			
IRP Site CW-3A	Landfill, CW-3A	FTMM-25	Shrewsbury Creek
IRP Site CW-6	Former Pest. Storage	FTMM-28	Un-named Wetland
ECP Parcel 15	Building 2700, Meyers Center laboratory	N.A.	Shrewsbury Creek
ECP Parcel 27	Buildings 2507 and 2704	N.A.	Shrewsbury Creek
ECP Parcel 28	Building 2525	N.A.	Shrewsbury Creek

2.5.1 MAIN POST

2.5.1.1 LANDFILL 2 (FTMM-2)

The FTMM-2 Landfill is located in the southwestern corner of the MP, on the south bank of Mill Creek. The 8.1-acre landfill operated from 1964 until 1968. The types of materials disposed in the landfill have been reported to include construction debris, scrap metal, asbestos-containing materials (ACM), vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris can be observed protruding from the stream bank along Mill Creek.

Under the IRP SI phase, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Mill Creek. All samples were analyzed for target compound list (TCL)+30, target analyte list (TAL) metals, and cyanide. The results are as follows:

- Chlorobenzene, arsenic, and lead were detected in downgradient monitoring wells at concentrations exceeding NJDEP Ground Water Quality Criteria (GWQC).

- Trichloroethene (TCE) and tetrachloroethene (PCE) were detected in surface water at concentrations exceeding the NJDEP Surface Water Quality Criteria (SWQC).

Under an enhanced SI phase, seven additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples were collected for analysis. The results are as follows:

- Benzene, chlorobenzene, cadmium, and lead have been detected in six of the seven downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

A remedial investigation (RI) to delineate contaminants of concern within groundwater and soil has been completed. A second RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material has also been completed. The results are as follows:

- Polychlorinated biphenyls (PCBs) were identified in site soils at two separate areas within the boundary of the landfill.

The IRP recommended a NFA for near surface soil (Versar, Inc., 2001). For PCB contamination in subsurface soils, the Directorate of Public Works (DPW) incorporated a document equivalent to a Declaration of Environmental Restriction (DER) into the FTMM Installation Master Plan. For groundwater, the DPW established a Classification Exception Area (CEA). Subsequently, it was determined that the FTMM-2 Landfill required additional evaluation through the BEE process.

As part of the BEE, 12 sediment samples and two surface water samples were collected from Mill Creek adjacent to Landfill 2 (FTMM-2), one surface water and one sediment sample were collected upstream of Landfill 2 (FTMM-2), and two surface water samples were collected downstream of Landfill 2 (FTMM-2). These are discussed further in **Section 3.4.2.1**.

Mill Creek borders Landfill 2 (FTMM-2) along its north side and a small drainage tributary to Mill Creek borders it along its west side. The bank of Mill Creek along Landfill 2 (FTMM-2) has undergone stabilization and a service road lies adjacent to Mill Creek. The site slopes gently to the north and surface runoff is discharged to Mill Creek. Groundwater underlying Landfill 2 (FTMM-2) flows to the north-northwest to Mill Creek. Conductivity and salinity monitoring conducted in 1995 in Mill Creek indicate the presence of freshwater with conductivity readings less than 240 micromhos (µmhos) and salinity readings less than 0.2 ppt with a maximum tidal fluctuation of 1.2 feet (Weston, 1995).

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Mill Creek in the vicinity of Landfill 2 (FTMM-2) from the vicinity of Building 1150 and Building 1152 located in Parcel 39 (**Section 2.5.1.14**) located north of Mill Creek from Landfill 2. A gas utility line and a storm water line located in the southeastern corner of Landfill 2 may provide additional migration pathways for contaminants from Landfill 2; migration along these pathways would not be in the direction of Mill Creek.

The vegetative cover of Landfill 2 (FTMM-2) is mostly cut field with isolated areas of wood-shrub habitat. Silver maple (*Acer saccharinum*), viburnum (*Viburnum* sp.), smartweed (*Polygonum* sp.), and blackgum (*Nyssa sylvatica*) are present along Mill Creek. The upland portions contain black walnut (*juglans nigra*), silver maple, boxwood (*Buxus* sp.), catalpa (*Catalpa speciosa*), and black locust (*Robinia pseudoacacia*).

Geographic Information System (GIS) digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek and to the east and west of Landfill 2 (FTMM-2) as well as herbaceous wetlands across the site. A site visit on September 9, 2009, confirmed the presence of deciduous wetlands bordering Mill Creek and Landfill 2 (FTMM-2); however, the site was typical of upland habitat and not herbaceous wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.2 LANDFILL 3 (FTMM-3)

The M-3 Landfill is located between North Drive and Lafetra Creek in the west-central part of the MP and it is bordered by Mill Creek to the east. The 8.0-acre landfill operated from 1959 until 1964. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Lafetra Creek. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Chlorobenzene and lead were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.
- No contaminants of concern were detected in surface water samples collected during the SI phase.
- Surface water samples collected under a New Jersey Pollutant Discharge Elimination System (NJPDES) permit identified PCE at concentrations exceeding the NJDEP SWQC.

Under an enhanced SI, five additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene, chlorobenzene, cadmium, and lead were detected in all five downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

The IRP recommended NFA for near surface soil (Versar, Inc. 2004a), and a CEA was prepared for groundwater. Subsequently, the M-3 Landfill was considered to require additional evaluation through the BEE process.

As part of the BEE, 11 sediment samples and two surface water samples were collected from Lafetra Creek and five sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 3 (FTMM-3), and one surface water and one sediment sample were collected upstream of Landfill 3 (FTMM-3) on Mill Creek. These are discussed further in **Section 3.4.2.2**.

Lafetra Creek borders Landfill 3 (FTMM-3) along its north side and Mill Creek borders it along its east side. The banks of Mill Creek and Lafetra Creek along Landfill 3 (FTMM-3) have undergone stabilization and a service road lies adjacent to Mill Creek and Lafetra Creek. The site slopes gently to the north and east and surface runoff is discharged to Mill Creek or Lafetra Creek. Groundwater underlying Landfill 3 (FTMM-3) flows predominantly to the north to Lafetra Creek.

As indicated on the FTMM utility maps in **Appendix K**, there are no outfalls or discharges from FTMM into Lafetra Creek or Mill Creek in the vicinity of Landfill 3 (FTMM-3) that may serve as potential contaminant migration pathways nor utility lines through Landfill 3 that may provide additional contaminant migration pathways from Landfill 3.

The vegetative cover of Landfill 3 (FTMM-3) is mostly cut field with isolated areas of wood-shrub habitat. Silver maple is present along the bank growing through the stabilizing riprap and poison ivy (*Toxicodendron radicans*) can be found on many of the trees. Opposite the landfill, emergent wetlands are dominated by cattail (*Typha* sp.) with patches of common reed (*Phragmites australis*). In the upland areas are black gum, American beech (*Fagus grandifolia*), pin oak (*Quercus palustris*), and silver maple as wells as mixed grasses and forbes including foxtail (*Alopercurus* sp.) and catalpa as well as Japanese knotweed (*Polygonum cuspidatum*) and wild grape (*Vitis* sp.).

GIS digital data available through the NJDEP indicate the presence of freshwater tidal wetlands along the Lafetra Creek opposite Landfill 3 (FTMM-3) as well as deciduous wetlands further to the north and to the west of Landfill 3 (FTMM-3).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Lafetra Creek, as well as the adjacent wetlands, is Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.3 LANDFILL 4 (FTMM-4)

The M-4 Landfill is located on MP in the area bounded by Avenue of Memories to the south, North Drive to the north, Mill Creek to the west, and Wilson Avenue to the east. The 1.4-acre landfill operated from 1955 until 1956. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30 parameters, TAL metals, and cyanide. The results are as follows:

- A single pesticide [4,4′-dichlorodiphenyltrichloroethane (4,4′-DDT)] was detected in an upgradient monitoring well at concentrations exceeding the NJDEP GWQC. As of 2002, 15 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. Lead was initially detected in site monitoring wells at concentrations exceeding the NJDEP GWQC.

The IRP recommended NFA for the site (Versar, Inc., 2004b, 2005a). Subsequently, it was determined that the FTMM-4 Landfill required additional evaluation through the BEE process.

As part of the BEE, six sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 4 (FTMM-4). These are discussed further in **Section 3.4.2.3**.

Mill Creek borders Landfill 4 (FTMM-4) along its west side. Both banks of Mill Creek along Landfill 4 (FTMM-4) have undergone stabilization. The site slopes gently to the west and surface runoff is discharged to Mill Creek. Groundwater underlying Landfill 4 (FTMM-4) flows to the west in the direction of Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, storm water outfalls discharge into Mill Creek in the vicinity of Landfill 4 (FTMM-4) near the northern and southern end of Landfill 4 (FTMM-4) which direct discharges from the surrounding area including the vicinity of Buildings 689, 1123, and 1221. The storm water line discharging into the northern end of Landfill 4 crosses Landfill 4 in a northwesterly direction and may act as a preferentially migration pathway for contaminants from Landfill 4 towards Mill Creek.

Landfill 4 (FTMM-4) is mostly mowed lawn with scattered large trees with grasses and forbes and small trees along Mill Creek. Along the creek are grasses and forbes with small trees; dominant vegetation is poison ivy, black cherry (*Prunus serotina*), catalpa, and goldenrod (*Solidago* sp.). To the south along the creek are Virginia creeper and wild rose, as well as pin oak and black willow (*salix nigra*). Black locust (*Robinia pseudoacacia*) and black oak (*Quercus velutina*) are present in the mowed area as well as Norway maple (*Acer platanoides*) and American bittersweet (*Celastrus scandens*) bordering the road.

No significant habitats in the vicinity of Landfill 4 (FTMM-4) are identified within GIS digital data available through the NJDEP.

2.5.1.4 LANDFILL 5 (FTMM-5)

The FTMM-5 Landfill is located just north of the FTMM-4 Landfill in the area bounded by North Drive to the south, an unpaved road south of Building 198 to the north, Wilson Avenue to the east, and Mill Creek and Parkers Creek to the west. The 3.2-acre landfill operated from 1952 until 1959. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated

photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

Under the IRP SI, two monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- PCE was detected in one monitoring well at concentrations exceeding the NJDEP GWQC. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis.
- Surface water samples collected under an NJPDES permit identified PCE at concentrations exceeding the NJDEP SWQC.

Under the RI, approximately 260 groundwater and soil samples were collected by means of a Geoprobe® sampling device. Following the Geoprobe® investigation, 13 additional monitoring wells were installed to further evaluate groundwater quality. At present, the extent of the PCE plume has been delineated both vertically and horizontally within site soil and groundwater.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004c), and a CEA was prepared for groundwater. Subsequently, it was determined that the M-5 Landfill required additional evaluation through the BEE process.

As part of the BEE, six sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 5 (FTMM-5). These are discussed further in **Section 3.4.2.4**.

Mill Creek borders Landfill 5 (FTMM-5) along its west side. Landfill 3 (FTMM-3) lies across Mill Creek to the west, Landfill 8 (FTMM-8) is to the north, and Landfill 4 (FTMM-4) is to the south. The bank of Mill Creek along Landfill 5 (FTMM-5) has undergone stabilization. The site slopes gently to the west and surface runoff is discharged to Mill Creek. Groundwater at the Landfill 5 (FTMM-5) flows to the west to Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, there are no outfalls or discharges from FTMM into Mill Creek adjacent Landfill 5 (FTMM-5) that may serve as potential contaminant migration pathways, though there are storm water utility discharges located immediate upstream of Landfill 5 (FTMM-5) that serve to drain the surrounding roads and building areas. There are, however, storm water lines within Landfill 5 that may act as additional contaminant migration pathways for transport from Landfill 5, particularly toward Landfill 8 (FTMM-8) located to the north (**Section 2.5.1.5**).

Landfill 5 (FTMM-5) is mostly mowed lawn with scattered large trees: white oak (*Quercus alba*), red mulberry (*Morus rubra*), black gum, and red maple. Along the creek are mixed forbs and shrubs: black locust, horseweed (*Conyza* sp.), Queen Anne's lace (*Daucus carota*), black-eyed Susan (*Rudbeckia hirta*), and cone flowers (*Echinacea* sp.).

Though the GIS digital data available through the NJDEP do not indicate the presence of critical habitats at Landfill 5 (FTMM-5), the forested area to the north is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.5 LANDFILL 8 (FTMM-8)

The FTMM-8 Landfill is located north of Buildings 692 and 697 in a bend of Parkers Creek. The 7.2-acre landfill operated from 1962 until 1981. Following closure of the FTMM-8 Landfill, all solid wastes generated at FTMM were directed to the Monmouth County Landfill. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

Under the SI, four monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Benzene and chlorobenzene were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Under an enhanced SI phase, seven additional monitoring wells were installed to further evaluate groundwater quality. The results are as follows:

- Benzene and chlorobenzene were detected in four downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Contaminant concentrations are consistent with those identified during the IRP SI phase and subsequent quarterly long-term monitoring results for surface water and groundwater at the FTMM-8 Landfill.

PCB soil contamination was identified at one location within the FTMM-8 Landfill. A second RI was also completed that evaluated the potential for environmental contaminants being present within the existing landfill cover material.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004d). For subsurface soils, the DPW incorporated a document equivalent to a DER into the FTMM Installation Master Plan for PCB soil contamination. A CEA was prepared for groundwater. Subsequently, it was determined that the FTMM-8 Landfill required additional evaluation through the BEE process.

As part of the BEE, 10 sediment samples and two surface water samples were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8), and one surface water and one sediment sample were collected upstream of Landfill 8 (FTMM-8) on the North Branch Parkers Creek. These are discussed further in **Section 3.4.2.5**.

Parker Creek borders Landfill 8 (FTMM-8) along its west, north, and east sides. The bank of Parkers Creek along Landfill 8 (FTMM-8) has undergone stabilization and a service road lies adjacent to Parkers Creek. The site slopes sharply toward Parkers Creek and surface runoff is discharged to Parkers Creek. Groundwater underlying Landfill 8 (FTMM-8) flows to the north-northwest to Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, storm water outfalls discharge into Parkers Creek at the western end of Landfill 8 (FTMM-8), as well as to the east of Landfill 8, which may direct discharges from the surrounding area, including Landfill 5 (**Section 2.5.1.4**), to Parkers Creek. Storm water utility lines in the south and eastern end of Landfill 8 may provide additional contaminant migration pathways from Landfill 8 including towards Parkers Creek to the west.

Common reed dominates the emergent wetlands opposite Parkers Creek from Landfill 8 (FTMM-8). The upland area is heavily wooded. Dominant species are cedar (*Chamaecyparis* sp.), sweet gum (*Liquidambar styraciflua*), black locust, Japanese knotweed, staghorn sumac (*Rhus typhina*), foxtail grass, Asiatic dayflower (*Commelina communis*), pin oak, common mullein (*Verbascum thapsus*), boxwood (*Buxus* sp.), black willow, poison ivy, silver maple, yellow birch (*Betula alleghaniensis*), Norway maple, red oak, and tree of heaven (*Ailanthus altissima*).

GIS digital data available through the NJDEP indicate the presence of phragmites dominated wetlands along Parkers Creek opposite Landfill 8 (FTMM-8), with deciduous shrub/scrub wetlands and deciduous wetlands present further from the landfill. Landfill 8 (FTMM-8) is identified as coastal forest habitat.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas across Parkers Creek and the forested areas on Landfill 8 (FTMM-8) are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek and the wetlands and forested areas are listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.6 LANDFILL 12 (FTMM-12)

The M-12 Landfill is located on the MP, on the south side of Husky Brook, west of Murphy Drive. Dates of operation for the 7.1-acre landfill are unknown. The types of materials disposed in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris can be observed protruding from the stream bank along Husky Brook.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Arsenic, cadmium, mercury, and lead were detected in site monitoring wells at concentrations less than the NJDEP GWQC.

An RI of site groundwater has been completed and eight additional monitoring wells have been installed at the site. The results are as follows:

- Arsenic was consistently detected in two monitoring wells at concentrations exceeding the NJDEP GWQC.

An RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material was completed.

The IRP recommended NFA for near surface soil (Versar, Inc., 2003), and a CEA was submitted for groundwater. Subsequently, it was determined that the FTMM-12 Landfill required additional evaluation through the BEE process.

As part of the BEE, nine sediment samples and two surface water samples were collected from Husky Brook adjacent to Landfill 12 (FTMM-12), one surface water sample and one sediment sample were collected downstream of Landfill 12 (FTMM-12) on Oceanport Creek, one surface water and two sediment samples were collected immediately upstream of Landfill 12 (FTMM-12), and one surface water sample and one sediment sample were collected further upstream. These are discussed further in **Section 3.4.2.6**.

Husky Brook borders Landfill 12 (FTMM-12) along its north side and a small tributary to Husky Brook divides Landfill 12 (FTMM-12) into an east and a west section. The bank of Husky Brook along Landfill 12 (FTMM-12) has undergone stabilization. The site is generally flat and groundwater underlying Landfill 12 (FTMM-12) flows to the north to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Husky Brook, as well as the small tributary to Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) from the surrounding areas. Several of the storm water utility lines cross through Landfill 12 and may act as preferential contaminant migration pathways for transport from Landfill 12 towards Husky Brook.

The riparian zone on both banks of Husky Brook is characterized as hardwoods and shrubs and contains groundsel bush, locust trees, black cherry, common wormwood (*Artemisia vulgaris*), bayberry, black oak, milkweed, horseweed, goldenrod, eastern cottonweed, staghorn sumac, Queen Anne's lace, red cedar, marsh elder, silver maple, and pin oak. Some common reed is present nearest Wallington Avenue-Murphy Drive. The upland area south of Husky Brook is old field habitat and includes common reed and tall grasses, mugwort, goldenrod, Queen Anne's lace, vetch, as well as black locust, marsh elder, groundsel bush, wild grape, staghorm sumac, bayberry, silver maple, crab apple, and gray birch.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along both banks of Husky Brook in the western half of Landfill 12 (FTMM-12) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on on-site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet

suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 12 (FTMM-12), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and the forested areas of Landfill 12 (FTMM-12), is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.7 LANDFILL 14 (FTMM-14)

The M-14 Landfill is located on the MP, on the north side of Husky Brook, west of Murphy Drive. The 6.9-acre landfill operated from 1965 until 1966. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris were previously observed protruding from the stream bank along Husky Brook.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Husky Brook. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Lead was detected in one downgradient monitoring well above NJDEP GWQC.

As of 2002, 11 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. The results are as follows:

- Arsenic was detected in one site monitoring well at concentrations exceeding the NJDEP GWQC.
- Lead and *cis*-1,2-dichloroethene were detected in surface water samples less than the NJDEP SWQC.

The IRP recommended NFA for the site (Versar, Inc., 2004e). Subsequently, it was determined that the FTMM-14 Landfill required additional evaluation through the BEE process.

As part of the BEE, 10 sediment samples and two surface water samples were collected from Husky Brook adjacent to Landfill 14 (FTMM-14), one surface water sample and one sediment sample were collected downstream of Landfill 14 (FTMM-14) on Oceanport Creek, one surface water and two sediment samples were collected immediately upstream of Landfill 14 (FTMM-14), and one surface water sample and one sediment sample were collected further upstream. These are discussed further in **Section 3.4.2.7**.

Husky Brook borders Landfill 14 (FTMM-14) along its south side. An access road/walking trail lies adjacent to Husky Brook for most of the length of Landfill 14 (FTMM-14) before crossing over Husky Brook. The bank of Husky Brook along Landfill 14 (FTMM-14) has undergone stabilization. The site is generally flat and groundwater underlying Landfill 14 (FTMM-14) flows to the south to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Husky Brook, as well as the small tributary to Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) from the surrounding areas. Though several of the storm water utility lines cross through Landfill 12 and may act as preferential contaminant migration pathways for transport from Landfill 12 towards Husky Brook, the storm water and gas lines located in the northern section of Landfill 14 may act as contaminant migration pathways from Landfill 14 to the east, west, and north, away from Husky Brook.

The riparian zone on both banks of Husky Brook is characterized as hardwoods and shrubs and contains groundsel bush, locust trees, black cherry, common wormwood, bayberry, black oak, milkweed, horseweed, goldenrod, eastern cottonweed, staghorn sumac, Queen Anne's lace, red cedar, marsh elder, silver maple, and pin oak. Some common reed is present nearest Wallington Avenue-Murphy Drive. The area to the east and north of the trail is mostly mixed tall grasses. To the west of the field area is a

heavily wooded section; this area contains boxwood, sweetgum, pin oak, black locust, goldenrod, milkweed, pokeweed, wild rose, black cherry, poison ivy, Asiatic bittersweet, sassafras, and black oak. An emergent wetland area is present bordering Husky Brook and is characterized by cattail, smartweed, and vibernum. The far western section is maintained lawn with isolated trees.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along both banks of Husky Brook in the western half of Landfill 14 (FTMM-14) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on on-site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 14 (FTMM-14), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and the forested areas of Landfill 14 (FTMM-14), is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.8 WATER TANK (FTMM-15)

The 1980 Installation Assessment (IA) report (USATHAMA, 1980) identified the 0.3-acre FTMM-15 site as a potential Area of Concern. A 500,000-gallon AST is located at the FTMM-15 site. The tank, built in 1941, is of steel construction and was always used for the storage of potable water. The tank is located in the northeast section of the MP next to Parkers Creek, a tributary of the Shrewsbury River.

Under the IRP SI, environmental contaminants in the form of pesticides and heavy metals were identified in site soil. The results are as follows:

- Two pesticides, 4,4′-dichlorodiphenyldichloroethylene (4,4′-DDE) and 4,4′-DDT, were identified at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria. It was determined that the pesticide contamination was the result of past over spraying practices.
- Three heavy metals—cadmium, lead, and zinc—were also identified at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.

Under the IRP RI, environmental sampling confirmed that the contaminants of concern had migrated horizontally towards Parkers Creek. A corrective action was implemented at the FTMM-15 site involving the removal of the contaminated soil from the site, thereby eliminating the contaminants of concern. Final remedial activities were completed in November of 1999. An RA report will be submitted to NJDEP with a NFA recommendation from the Army.

The IRP recommended NFA for the site. Subsequently, it was determined that FTMM-15 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and three surface water samples were collected from Parkers Creek adjacent to FTMM-15, of which one surface water sample and one sediment sample were collected immediately downstream of FTMM-15 and one surface water sample and one sediment sample were collected immediately upstream of FTMM-15. These are discussed further in **Section 3.4.2.8**.

Parkers Creek borders FTMM-15 along its north side. Parkers Creek is a wide, open water tidal water body in this area. The banks along Parkers Creek are steep and groundwater underlying FTMM-15 flows to the north to Parkers Creek.

The area of FTMM-15 immediately surrounding the water tank is maintained lawn. The banks along Parkers Creek are steep and vegetated. Vegetation includes poison ivy, pin oak, alder, Japanese knotweed, black willow, staghorn sumac, black locust, rose, and Norway maple.

No significant habitats in the vicinity of FTMM-15 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

A former pesticide storage and mixing area was located at the 0.12-acre FTMM-16 site on the MP. The facility (Building 498) is a brick structure and was constructed in 1939. Pesticide management was conducted at the site until the late 1950s. Following this, the operation was moved to Building 65.

Under the IRP SI, a total of 10 pesticide compounds were detected greater than laboratory quantitative limits in site soil. Five pesticide compounds were found at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.

Environmental sampling confirmed that the contaminants were migrating horizontally in the direction of Oceanport Creek. The creek is located approximately 250 feet downgradient of the FTMM-16 site. A corrective action was implemented to remove the contaminated soil from the site, and final remedial activities were completed in February of 1999.

The IRP recommended a NFA for the site. Subsequently, it was determined that FTMM-16 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and three surface water samples were collected from Oceanport Creek near FTMM-16, of which one surface water sample and one sediment sample were collected downstream of FTMM-16, and one surface water sample and one sediment sample were collected upstream of FTMM-16. These are discussed further in **Section 3.4.2.9**.

Site FTMM-15 is approximately 100 yards north of Oceanport Creek which is a wide, open water tidal water body in this area. Immediately south of Site FTMM-15 is a marina and the banks of Oceanport Creek are contained by bulkheads. West of the marina and east of Oceanport Avenue the bank slopes gently to Oceanport Creek. Groundwater underlying FTMM-16 flows to the south to Oceanport Creek.

The area immediately surrounding the FTMM-15 site is maintained lawn. Along Oceanport Creek are buildings, structures, and pavement associated with the marina. West of the marina is an emergent wetland area of sedges and rushes dominated by cattails and common reeds.

GIS digital data available through the NJDEP indicate the presence of low marsh saline wetlands west of the marina and east of Oceanport Avenue.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area along Oceanport Creek is habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Oceanport Creek, as well as the wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

The FTMM-18 site is a former training area utilized by the Army Signal School and other Army units. The FTMM-18 site is located on the MP, between Parkers Creek to the north and Buildings 283, 289, 293, and 294 to the south. The 4.85-acre site is partially paved and the remaining portion is an open sandy area. A tidal marsh adjoins the site. The 1980 IA report (USATHAMA, 1980) identifies diesel and gasoline generators and military vehicles being used at this site. The report states that numerous fuel spills occurred at the site as a result of these activities.

Under the IRP SI, nine soil borings in a grid pattern were drilled at the site. Two soil samples were collected from each boring, either 6 to 12 inches or 12 to 18 inches below the bottom of the asphalt (to avoid bias) and either from intervals with visible staining or from just above the water table. Soil

samples were analyzed for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). The results are as follows:

- No compounds of concern were detected at concentrations exceeding the NJDEP Direct Residential Contact Soil Cleanup Criteria.

Two soil boring locations were converted to monitoring wells in order to evaluate groundwater quality. One existing monitoring well was also used to evaluate groundwater quality. Groundwater samples were analyzed for TCL+30, TAL metals, and TPH. The results are as follows:

- Arsenic, lead, and 4,4′-dichlorodiphenyldichloroethane (4,4′-DDD) were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Under an enhanced SI under the IRP, three additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene and lead were detected in four of the six site monitoring wells at concentrations exceeding the NJDEP GWQC.

A geophysical survey was also conducted under the SI to determine whether the M-18 site was a former landfill. The data gathered from geophysical survey identified waste materials buried at the site. Subsequent trenching work confirmed the presence of construction debris.

A RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material was completed. This resulted in a NFA determination regarding the landfill cover material.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004f), and a CEA was submitted for groundwater. Subsequently, it was determined that FTMM-18 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and one surface water sample were collected from Parkers Creek adjacent to Site FTMM-18, and one surface water sample and one sediment sample were collected immediately upstream of Site FTMM-18. These are discussed further in **Section 3.4.2.10**.

Parkers Creek borders Site FTMM-18 along all but its southern boundary. At the western end, Parkers Creek is narrow (approximately 10 yards) but then opens to a wide (approximately 100 yard) open water tidal area at the eastern end. The bank of Parkers Creek on the western side of Site FTMM-18 has undergone stabilization. The central portion of the site is generally flat with greater slopes to the north and east and groundwater underlying Site FTMM-18 flows toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Site FTMM-18. These storm water lines drain areas south and east of Site FTMM-18 including Buildings 291 to 296 and Building 283 (FTMM-61) in Parcel 49 (**Sections 2.5.1.13 and 2.5.1.15**). Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Site FTMM-18 towards Parkers Creek.

The western and central portion of Site FTMM-18 is maintained lawn with some hardwoods and small pockets of emergent wetland dominated by common reed. The western border, adjacent to Parkers Creek, contains shrubs and small hardwoods. Some pines are planted in this area and an active Osprey platform is present. Bordering Parkers Creek to the north and east are extensive emergent wetlands dominated by common reed in the high marsh and sedge-reed wetlands in the low marsh. The northeastern and eastern portions also contain forested wetlands sloping sharply to the emergent wetlands and Parkers Creek. Common vegetation at Landfill 18 (FTMM-18) includes black locust, black cherry, northern boxwood, Asian bittersweet, wild grape, marsh elder, goldenrod, red cedar, poison ivy, tree of heaven, red mulberry, and bayberry.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands and high marsh saline wetlands adjacent to Parkers Creek. Based on observations,

there is also an area of deciduous wetlands between the maintained lawns and the emergent wetlands, and a small emergent wetlands within the area of maintained lawn.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Parker Creek are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek, as well as the associated wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20)

Site FTMM-20 is the location of the former Sanitary STP adjacent to Parkers Creek in an area north of Allen Avenue in approximately the same location as current Building 259. Though the date of construction and period of operation are unknown, it is believed that this STP operated until the second MP STP came on line in 1941.

As part of the IRP SI (Weston, 1995), one sediment sample was collected from Parkers Creek at the former wastewater discharge point. The results from this sample are as follows:

- Arsenic, cadmium, chromium, and zinc were detected at concentrations exceeding NJDEP sediment criteria and background levels.

Additional sediment samples were collected during the IRP RI to delineate the extent of the metal contamination at the site (Versar, Inc., 2004g). Sediment samples at three depths at seven locations in the vicinity of the former wastewater discharge point, as well as three locations northwest and away from the influence of the STP discharge were collected. The RI results are as follows:

- Heavy metal concentrations at the site were consistent with background metal concentrations from nearby, undisturbed locations.

The RI Report was submitted to the NJDEP in 2004 requesting a NFA determination. Subsequently, it was determined that the FTMM-20 Landfill required additional evaluation through the BEE process.

As part of the BEE, two sediment samples and two surface water samples were collected from Parkers Creek adjacent to Site FTMM-20. These are discussed further in **Section 3.4.2.11**.

The majority of the area of Site FTMM-20 is pavement and maintained lawns sloping towards Parkers Creek to the northwest. Adjacent to Parkers Creek the banks are steep and dominated by hardwoods and shrubs. Emergent wetlands exist at the bottom of the slope dominated by common reed. Groundwater in the vicinity of Site FTMM-20 is to the northwest and toward Parkers Creek.

No significant habitats in the vicinity of Site FTMM-20 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.12 BUILDING 1122, UNKNOWN DISCHARGE (FTMM-59)

Site FTMM-59 is located on Alexander Avenue, adjacent to Mill Creek on the MP. The 0.34-acre Site FTMM-59 contains Building 1122, which is also identified as part of the 1.54-acre Parcel 43. Site FTMM-59 and ECP Parcel 43 are addressed in this BEE as one site – FTMM-59.

Building 1122 is located on the MP and houses a modern “do-it-yourself” vehicle repair shop. Building 1122 is a single story slab building approximately 11,600 square feet in size. Furniture paint stripping was reported in the Woodworking Craft Shop section of Building 1122 in 1973. Currently, all vehicle repairs are done by FTMM personnel and are performed inside the building. Degreasing solvents are used, which generates hazardous waste. Pneumatic lifts are present. The 2006 Stormwater Pollution Prevention Plan states, “Floor drains located near the pneumatic lifts, have been closed off.”

Used oil is collected in a 55-gallon drum stored inside the shop. When filled, the contents are pumped into a 995-gallon, double-walled AST located between the repair shop and the car wash (Building 1124). The floors drains, previously connected to the car wash facility in Building 1124, were sealed in June 2007. The enclosed car wash facility is located east of the repair shop. All wash water is recycled and reused and an active oil/water separator is in place. A 1993 renovation plan, which details the replacement of the floor drains, shows that the drains were connected to the sanitary sewer system. A former oil/water separator was associated with this building.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil gas, and indoor air samples were collected to assess environmental conditions on Parcel 43. Six sediment samples were collected from three sample borings located along the south bank of Mill Creek at potential discharge locations adjacent to Building 1122. Mill Creek is a tidally influenced water body in this portion of the facility. At each sample location, two samples were collected: one from the 0- to 6-inch below ground surface (bgs) interval and the other from the 12- to 18-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 11 semivolatile organic compounds (SVOCs), 2 VOCs, and 18 metals were detected in sediment samples.

- Eight SVOCs [anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene] were detected at concentrations that exceeded the salt water sediment criteria in two samples.
- The two VOCs were detected at concentrations less than the salt water sediment criteria .
- Eight of 18 metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations that exceeded the salt water sediment criteria in all six samples.

Five soil gas samples (including one duplicate) and an indoor air sample were collected in and around Building 1122 to evaluate vapor intrusion. Samples were analyzed for VOCs. The results are as follows:

Twenty-one VOCs were detected in all five soil gas samples. A total of 25 VOCs were detected in the indoor air sample.

- Of the 21 VOCs detected in soil, 2 (PCE and TCE) exceeded the NJDEP generic vapor intrusion non-residential indoor air screening levels.
- Of the 25 VOCs detected in indoor air, 2 (benzene and dichloromethane) exceeded the NJDEP generic vapor intrusion screening levels.

The DPW removed one UST located next to Building 1122 (a self-help vehicle repair shop) in June 1994. The UST was a single wall steel tank used for storing No. 2 fuel oil. During tank closure activities, a petroleum discharge to site soil and groundwater was identified. Upon further investigation, the DPW determined that a second UST was removed from the same area during the late 1980s. Discussions with site personnel indicated that the tank was removed because of inventory control problems. It is assumed that the site was not fully remediated during the first UST closure.

In accordance with NJDEP UST Site Assessment activity requirements, all petroleum contaminated soils have been removed and disposed. In addition, the DPW has installed two monitoring wells to determine any adverse impact to groundwater. The results are as follows:

- TCE was initially detected at concentrations exceeding the NJDEP GWQC.

Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- TCE continues to be quantified in one of the two site monitoring wells at concentrations exceeding the NJDEP GWQC.

Surface water sampling points (Mill Creek) downstream from the site and are currently being monitored.

The IRP recommended a CEA for groundwater, and a BEE was recommended for Parcel 43 in the ECP SI.

As part of the BEE, two surface water samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43. These are discussed further in **Section 3.4.2.12**.

Mill Creek borders Building 1122, FTMM-59, and Parcel 43 along its north side. The bank of Mill Creek along this area has not undergone stabilization. FTMM-59 and Parcel 43 is mostly paved with small patches of mowed and maintained lawns. The site slopes gently to the north and the banks immediately adjacent to Mill Creek are steep. Surface runoff is discharged to Mill Creek. Groundwater underlying FTMM-59 and Parcel 43 flows to the north-northwest to Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, a storm water outfall may discharge into Mill Creek to the east of Building 1122. This storm water line may drain the area of Building 1122 and Parcel 43 as well as buildings to the east. Storm water and gas lines located around Building 1122 may also act as contaminant migration pathways from Parcel 43 away from Mill Creek.

The vegetative cover along Mill Creek adjacent to FTMM-59 and Parcel 43 is mostly hardwoods with a thick understory. Common vegetation includes black jack oak, black cherry, black locust, pin oak, poison ivy, sassafras, jewelweed, greenbrier, Japanese knotweed, crab apple, and wild rose.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek in the area of Building 1122, FTMM-59, and Parcel 43.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.13 BUILDING 283, LEAKING UST, GASOLINE (FTMM-61)

Site FTMM-61 is located off of Sherrill Avenue in the northern section of the MP and encompasses an area of less than 0.2 acre. Because FTMM-61 is within Parcel 49, the two areas are addressed in this BEE as one site: FTMM-61. On August 28, 1997, a 3,000-gallon steel UST (No. 0081533-229) used to store gasoline was removed. The UST was located within the courtyard of Building 283. Following its removal, the UST was inspected and numerous holes were noted. Soils within the tank excavation that corresponded with the locations of the holes in the tank were dark in color and appeared to be contaminated. Based on site assessment activities, it was concluded that a discharge to the environment had occurred. The NJDEP hotline was notified and the site was assigned Case # 97-8-28-1330-33. Approximately 400 cubic yards of contaminated soil was removed and disposed off-site in accordance with NJDEP requirements. Groundwater was encountered at 12.0 feet below grade and a sheen was observed on the groundwater. In response to this observation, one groundwater sample was collected. The sample was analyzed for VOCs to include a calibration for xylenes plus 15 tentatively identified compounds (TICs). The results are as follows:

- Benzene, ethylbenzene, toluene, and lead were detected at concentrations exceeding the NJDEP GWQC.

Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene was detected at a concentration at concentrations exceeding the GWQC.
- Ethyl benzene was detected at a concentration at concentrations exceeding the GWQC.
- Toluene was detected at a concentration at concentrations exceeding the GWQC.
- Lead was detected at a concentration at concentrations exceeding the GWQC.

The IRP recommended that a CEA for groundwater be submitted. Subsequently, the site was considered to require additional evaluation through the BEE process.

As part of the BEE, two surface water samples were collected from Parkers Creek adjacent to Parcel 49 and Building 283. These are discussed further in **Section 3.4.2.13**.

Parkers Creek borders FTMM-61 and Parcel 49 along its north side. The bank of Parkers Creek adjacent to FTMM-61 and Parcel 49 has not undergone stabilization and is steep and well-vegetated. Parcel 49 is mostly buildings and pavement with small portions of mowed and maintained lawns. The site slopes gently to the north and surface runoff is discharged to Parkers Creek. Groundwater underlying Parcel 49 flows to the north toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Building 283 and Parcel 49 (**Section 2.5.1.15**). These storm water lines drain the areas around Building 283 and Parcel 49. Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Parcel 49 to Site FTMM-18 and Parkers Creek. Two storm water utility lines discharge northeast of Building 283 directly into Parkers Creek. Storm water, gas, and water lines located around Building 283 and Parcel 49 may also act as contaminant migration pathways from Parcel 49 and not directly to Parkers Creek.

The vegetative cover of the wooded area along Parkers Creek adjacent to FTMM-61 and Parcel 49 contains red oak, white oak, black locust, and black gum.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated coastal wetlands along Parkers Creek on the western portion of FTMM-61 and Parcel 49.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.14 BUILDING 1150 (PARCEL 39)

Parcel 39 is located in the southwestern portion of the MP and encompasses the area between Building 1150 (Vail Hall) and Mill Creek, approximately 0.5 acre. Building 1150 is utilized for administrative purposes. Within the basement is a large Uninterruptible Power Supply Room, emergency generator, floor drains, and a sump pump strictly for high water table events (discharges to basin behind the building and ultimately to Mill Creek). Film developing activities formerly occurred in the basement of the building.

In 2007, as part of an ECP SI (Shaw, 2008), sediment and surface soil were collected to assess environmental conditions on Parcel 39.

A total of four sediment samples were collected from two sample borings located along the north bank of Mill Creek adjacent to Building 1150. Samples were collected from deposition locations immediately downgradient of the drainage basin located directly behind Building 1150. At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 9 SVOCs and 18 metals were detected in Parcel 39 sediment samples.

- Six [benzo(*a*)anthracene, benzo(*a*)pyrene, chrysene, fluoranthene, phenanthrene, and pyrene] of the nine SVOCs were detected at concentrations that exceeded the freshwater comparison criteria in two samples.
- Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc were detected at concentrations that exceeded the freshwater comparison criteria in all four samples.

Based upon the resulting data, the ECP SI recommended NFA for soil within Parcel 39.

One surface soil sample was collected from one boring located below an outfall on the north bank of Mill Creek adjacent to Building 1150. The outfall is the end of an underground terracotta pipe that leads from the direction of Building 1150. A sample was collected in order to determine if any contamination exists from potential historical discharges from Building 1150. The surface soil sample for non-VOC analysis was collected from the 0- to 6-inch interval bgs, and the soil sample for VOC analysis was collected from the 18- to 24-inch bgs interval. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

- A total of 4 SVOCs and 18 metals were detected at concentrations less than the non-residential and impact to groundwater comparison criteria in the Parcel 39 surface soil sample.

Based upon the resulting data, the ECP SI recommended that a BEE be conducted for surface water and sediment at Parcel 39.

As part of the BEE, three sediment samples and one surface water sample were collected from Mill Creek adjacent to Parcel 39. Parcel 39 is on the opposite bank of Mill Creek from Landfill 2 (FTMM-2) and these samples were also collected as part of the Landfill 2 investigation. These are discussed further in **Section 3.4.2.14**.

Mill Creek borders Parcel 39 along its south side. The bank of Mill Creek along Parcel 39 has not undergone stabilization, though the opposite bank along Landfill 2 has been stabilized. Parcel 39 consists mostly of buildings and pavement with some mowed and maintained lawns. The site slopes gently to the south and the banks to Mill Creek are steep; surface runoff is discharged to Mill Creek. Groundwater underlying Parcel 39 flows to the south towards Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Mill Creek from the vicinity of Building 1150 and Building 1152 located in Parcel 39 located north of Mill Creek from Landfill 2 (**Section 2.5.1.1**), and these storm water utility lines may act as preferential contaminant migration pathways towards Mill Creek.

Within the lawn areas are tulip trees and black gum. Near Mill Creek, the vegetative cover includes Norway maple, silver maple, black cherry, Asiatic bittersweet, Japanese knotweed, poison ivy, pignut hickory (*Carya glabra*), black willow, black gum, Asiatic dayflower, and burning bush (*Euonymus alata*).

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands and herbaceous wetlands along Mill Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the forested wetland area along Mill Creek adjacent to Parcel 39 is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.15 BUILDINGS 283, 288, 291, 292, 293, 295 (ECP PARCEL 49)

Parcel 49 encompasses the buildings associated with the former Squier Laboratory and other facilities with similar operational histories in the north-central portion of the MP and incorporates an area of approximately 4 acres. The Squier Laboratory Complex included existing Buildings 283, 285, 288, 292, 293, and 298, and former Buildings S-5, S-6, S-6 Annex, S-9, S-10, S-11, S-12, and S-15. Buildings 291, 294, and 295, and former Buildings 289, 290, L-3, T-45, X-9, and X-7 have a similar operational history and are included in Parcel 49 along with the Squier Laboratory buildings. Environmental concerns associated with Squier Laboratory operations include the use of chemicals, solvents, radioisotopes, and metals when waste handling procedures may not have been sufficiently protective to preclude a release to the environment.

A corollary investigation of the historical use of radioactive materials (RAM) was conducted by Cabrera during the Phase I ECP. A Special Investigation Report issued in 1951 for the Squier Signal Laboratory Director discussed a wipe test performed on samples of aluminum covered with polonium lacquer (approximately 230 microcuries) to ensure that no hazard was present at Building 283.

Building 292 serves as storage space for the communications-electronics museum. This storage space contains or contained a Chinese radio and a vacuum tube where radiological commodities were identified with radiological readings above background levels, and radium-contaminated components were found in a posted radioactive storage locker. This storage space once contained 65 items containing RAM, but numerous non-radioactive items have since been removed.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 49.

Seven (including one duplicate) sediment samples were collected from three sample borings located along the south bank of Parkers Creek. Parkers Creek is a tidally influenced water body in this portion of the facility. Samples were collected in order to determine if previous discharges from former septic and sump systems associated with the Squier Complex have impacted sediment within Parkers Creek. At each sample location, two samples were collected; one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

A total of 10 SVOCs, 1 VOC, and 20 metals were detected in Parcel 49 sediment samples.

- All 10 SVOCs and the 1 VOC (acetone) were detected at concentrations less than the saltwater sediment criteria.
- Of the 20 metals, 9 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected at concentrations that exceeded the saltwater sediment criteria in all seven sediment samples.

Six surface soil samples and seven subsurface soil samples (including one duplicate sample) were collected from six distinct Geoprobe® borings located throughout Parcel 49. An additional seven surface soil samples were collected via hand-auger throughout Parcel 49. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples for VOC analysis were collected from the 18- to 24-inch interval bgs. Subsurface soil samples were collected from the 6-inch interval directly above the water table. No visual or olfactory evidence of contaminated soil was noted. All soil samples were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

A total of 22 SVOCs, 5 VOCs, 20 metals, and 1 Aroclor were detected in Parcel 49 soil samples.

- Of the 22 SVOCs, 7 [benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*k*)fluoranthene, chrysene, dibenzo(*a,h*)anthracene, and indeno(1,2,3-*cd*)pyrene] were detected at concentrations that exceeded the non-residential comparison criteria in five surface soil samples.
- The five VOCs were detected at concentrations less than the applicable criteria.
- Of the 20 metals, 1 (arsenic) was detected at concentrations that exceeded regulatory criteria.
- Aroclor 1260 was detected in one surface soil sample at a concentration that exceeded regulatory criteria.
- Cyanide was not detected in soil.

Two groundwater samples were collected from two temporary wells that were installed using the Geoprobe®. Temporary wells P49GW-1 and P49GW-1 were installed north of Building 293 and east of former Building 289, respectively. The samples were analyzed for TCL+30 (without pesticides/PCBs) and *tert*-butyl alcohol (TBA). Five groundwater samples (including one duplicate sample) were collected from four existing FTMM monitoring wells located along the northern perimeter of the former Squier Complex area to evaluate groundwater on a parcel-wide basis. These samples were analyzed for TCL+30 (without pesticides), TBA, TAL metals, and cyanide. The results are as follows:

A total of 4 SVOCs, 9 VOCs, and 18 metals were detected in groundwater samples collected in Parcel 49.

- Of the four SVOCs, one [bis(2-ethylhexyl) phthalate] was detected at concentrations that exceeded the NJDEP GWQC in three groundwater samples. The contamination was likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a contaminant of concern in groundwater at Parcel 49.
- Of the nine VOCs, two (benzene and bromodichloromethane) were detected at concentrations that exceed the NJDEP GWQC in two groundwater samples.
- Of the 18 metals, 6 (aluminum, arsenic, beryllium, iron, manganese, and sodium) were detected at concentrations that exceeded the NJDEP GWQC.

Based upon the resulting data, the SI recommended additional evaluation of soils, further evaluation of groundwater under the M-18 groundwater CEA, and that Parcel 49 be included as part of the BEE.

As part of the BEE, two surface water samples were collected from Parkers Creek adjacent to Parcel 49 and Building 283. These are discussed further in **Section 3.4.2.15**.

Parkers Creek borders Parcel 49 along its north side. The bank of Parkers Creek adjacent to Parcel 49 has not undergone stabilization and is steep and well-vegetated. Parcel 49 is mostly buildings and pavement with small portions of mowed and maintained lawns. The site slopes gently to the north and surface runoff is discharged to Parkers Creek. Groundwater underlying Parcel 49 flows to the north toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Building 283 (**Section 2.5.1.13**) and Parcel 49. These storm water lines drain the areas around Building 283 and Parcel 49. Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Parcel 49 to Site FTMM-18 and Parkers Creek. Two storm water utility lines discharge northeast of Building 283 directly into Parkers Creek. Storm water, gas, and water lines located around Building 283 and Parcel 49 may also act as contaminant migration pathways from Parcel 49 and not directly to Parkers Creek.

The vegetative cover of the wooded area along Parkers Creek adjacent to Parcel 49 contains red oak, white oak, black locust, and black gum.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated coastal wetlands along Parkers Creek on the western portion of Parcel 49.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.16 BUILDING 1075 (ECP PARCEL 61)

Parcel 61, located in the south-central portion of the MP, encompasses Patterson Army Health Clinic (Building 1075) and the surrounding land (approximately 15 acres). Constructed in 1961 to house Patterson Army Hospital, Building 1075 has been used continuously since that time, although it was downgraded to a health clinic in 1995. Operations in the 1960s, 1970s, and 1980s included X-ray processing and laboratory operations. Operations in the building extensively used mercury-containing equipment, developing chemicals, and other chemicals and waste associated with medical operations.

In 2007, as part of the ECP SI (Shaw, 2008), sediment and surface soil samples were collected to assess environmental conditions on Parcel 61.

Four sediment samples were collected from two borings to investigate potential historical discharges to stormwater from Building 1075. One sample was collected at the stormwater outfall, MP17, located along the southeast bank of Oceanport Creek directly north of Building 975. The other sample was collected downstream on the southeast bank of the tributary to Oceanport Creek. Oceanport Creek is a tidally influenced water body in this portion of the facility. At each sample location, two samples were collected, one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 16 SVOCs, 1 VOC, and 18 metals were detected in Parcel 61 sediment samples.

- Of the 16 SVOCs, 11 [acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene] were detected at concentrations that exceeded the freshwater sediment criteria in all four sediment samples.
- The VOC toluene was detected at concentrations below the freshwater sediment criteria in one sample.
- Of the 18 metals, 4 (arsenic, chromium, copper, and lead) were detected at concentrations that exceeded the freshwater sediment criteria.

Four surface soil samples were collected from one hand auger location (P61SS-1) and three Geoprobe® boring locations (P61SS-2, 3, and 4). Samples were located along the southeast and northeast corners of Building 1075. Sample P61SS-1 was collected in a grass-covered area near a door at the southeastern corner of Building 1075. Samples P61SS-2 and P61SS-3 were collected near the loading docks of Building 1075. Sample P61SS-4 was collected near the basement door at the northeast corner of Building 1075. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For surface soil samples located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch interval bgs. All samples were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. No visual or olfactory evidence of soil contamination was noted. The results are as follows:

A total of 19 SVOCs and 18 metals were detected in Parcel 61 soil samples.

- Of the 19 SVOCs, 3 [benzo(*a*)anthracene, benzo(*b*)fluoranthene, and benzo(*a*)pyrene] were detected at concentrations exceeding the non-residential comparison criteria in one surface soil sample.
- All 18 metals identified in soil were detected below the Non-Residential Direct Contact Soil Cleanup Criteria.
- Cyanide was not detected in soil at Parcel 61.

Based upon the resulting data, the SI recommended soil for additional evaluation and inclusion of Parcel 61 in a BEE.

As part of the BEE, one surface water sample from the tributary to Oceanport Creek. This is discussed further in **Section 3.4.2.16**.

Parcel 61 is mostly buildings and pavement with small portions of mowed and maintained lawns. Though no significant habitats are present in the immediate vicinity of Parcel 49, stormwater discharges to a small tributary to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines drain the area around Building 1075 and Parcel 61. These direct discharges to a small tributary to Husky Brook in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) (**Sections 2.5.1.6 and 2.5.1.7**). The numerous storm water, gas, and water lines located in and around Parcel 61 may also act as contaminant migration pathways from Parcel 61 to or away from Husky Brook or its tributary.

The vegetative cover along the small tributary to Husky Brook includes boxwood, sweetgum, pin oak, black locust, goldenrod, milkweed, pokeweed, wild rose, black cherry, poison ivy, Asiatic bittersweet, sassafras, and black oak.

GIS digital data available through the NJDEP indicate the presence of deciduous shrub/scrub wetlands along the tributary to Husky Brook.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Husky Brook and the adjacent wetlands are listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.17 BUILDING 900 (ECP PARCEL 69)

Building 900 is a former tactical motor pool located in the southeastern portion of the MP, which has been utilized for general storage for approximately the last 10 years. It encompasses approximately 0.3 acre. A waste oil tank immediately outside the building was connected by a fill pipe originating from inside the building (since removed). A storm sewer inlet was observed in the parking lot in close proximity to the building during the 2006 Visual Site Inspections (VSIs). A boiler was formerly located outside the building. A 1993 U.S. Army Environmental Hygiene Agency report cites a TCE parts cleaner and 500-gallon waste oil AST being present at the building during the 1993 site visit. The tank has been removed from the building. All TCE parts cleaners were eliminated from use (MP and CWA) in February 1994 under Environmental Program Requirements Project FM0094F088.

Solvents were previously used for cleaning vehicle parts at various locations throughout FTMM. Both the military and the contractors operated solvent parts cleaners. These solvent parts cleaners consisted of a tank and sink with nozzle. The military used Super Agitene for its parts cleaners while the contractor used Siloo Tyme II. Each parts cleaner held about 30 gallons of fluid, which was reused until it needed changing. Fluid changes occurred every 4 months to every 3 years, depending on location and usage.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 69.

Five sediment samples (including one duplicate sample) were collected from two borings located along the south bank of Oceanport Creek. Oceanport Creek is a tidally influenced water body in this portion of the facility. Sediment samples were collected in order to investigate any potential historical discharges to stormwater from Building 900. One sample was collected directly at a stormwater outfall within Oceanport Creek upstream of Murphy Drive, and the other sample was collected at a stormwater outfall discharging to Oceanport Creek downstream of Murphy Drive. At each sample location, two samples were collected; one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted.

All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals.

The results are as follows:

A total of 8 SVOCs, 4 VOCs, and 20 metals were detected in Parcel 69 sediment samples.

- Of the eight SVOCs, seven [acenaphthene, anthracene, benzo(*a*)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene] were detected at concentrations that exceeded the saltwater sediment criteria.
- All four VOCs were detected at concentrations below the saltwater sediment criteria.
- Of the 20 metals, 9 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected at concentrations that exceeded the saltwater sediment criteria.

Four surface soil samples and five subsurface soil samples (including one duplicate sample) were collected from four distinct Geoprobe® borings. Three borings, P69SB1, P69SB2, and P69SB3, were

located in the vicinity of the former waste oil AST. The other boring, P69SB-4, was located north of Building 900 to evaluate the absence or presence of contamination downgradient of the building. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch bgs interval. At borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

- A total of 5 SVOCs, 17 metals, and 2 VOCs were detected in concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria in Parcel 69 surface soil.

Three groundwater samples (including one duplicate sample) were collected from two distinct temporary wells that were installed with the Geoprobe® rig. One temporary well, P69GW-1, was installed in an area of the former waste oil AST east of Building 900, and the other well, P69GW-4, was installed downgradient (north) of Building 900. Samples were analyzed for TCL+30 (without pesticides/PCBs). The results are as follows:

A total of one SVOC and three VOCs were detected in Parcel 69 groundwater.

- The SVOC bis(2-ethylhexyl) phthalate was detected at concentrations exceeding the NJDEP GWQC in two samples. The contamination was likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a contaminant of concern in groundwater at Parcel 69.
- Of the three VOCs detected, one (PCE) was detected at a concentration that exceeds the NJDEP GWQC in one sample.

Based upon the resulting data, the SI recommended NFA for soil, but additional evaluation for groundwater. In accordance with N.J.A.C 7:26E-3.11 (NJDEP, 2009b), Parcel 69 will be addressed as part of this facility-wide BEE.

As part of the BEE, one surface water sample was collected from Oceanport Creek. This is discussed further in **Section 3.4.2.17**.

Parcel 69 is mostly buildings and pavement with small portions of mowed and maintained lawns. Though no significant habitats are present in the immediate vicinity of Parcel 69, stormwater discharges to Oceanport Creek.

The vegetation at Oceanport Creek near stormwater discharge from Parcel 69 is dominated by common reed.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the emergent wetland area along Oceanport Creek is habitat Rank 4, which is assigned to patches with one or more occurrences of a state endangered species, in this case the Least Tern. Oceanport Creek and the adjacent wetlands are also listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.2 CHARLES WOOD AREA

2.5.2.1 LANDFILL, SITE CW-3A (FTMM-25)

The CW-3A site (3.1 acres) was identified as a suspected landfill area during the Preliminary Assessment (PA) phase study under the IRP as IRP Site FTMM-25. Interviews with long-term DPW employees suggested that a former landfill might be present at the site in question. The suspected landfill is located north of the Pulse Power facility (Building 2707), which is also located in the southwestern part of the CWA.

On September 25, 1997, several test pits were excavated at the CW-3A site (FTMM-25) to ascertain whether the site was previously utilized as a landfill. Upon excavating the test pits, waste materials, mostly in the form of construction debris, were observed within the test pits. The debris itself consisted of concrete, asphalt, brick, wood, glass, and assorted scrap metals. Coal ash was also observed within each of the test pits. To evaluate the potential impact the landfill may have had on site soils and groundwater, four shallow monitoring wells were installed on-site. During monitoring well construction, continuous split-spoon soil samples were collected in 4-foot increments. Based upon field observations and measurements, soil samples were collected at the following depth intervals bgs: 0 to 6 inches, 18 to 24 inches, and immediately above the water table. Samples collected at the 18- to 24-inch interval were collected solely for VOCs to include a gas chromatography/mass spectrometry (GC/MS) library search. Samples collected at the 0- to 6-inch interval were analyzed for TCL+30 minus the VOC parameters, TAL metals, and cyanide. Samples collected just above the water table were analyzed for TCL+30 parameters, TAL metals, and cyanide. The results are as follows:

- Benzo(a)anthracene, benzo(*a*)pyrene, and cadmium were detected at concentrations exceeding NJDEP Residential Direct Contact Soil Cleanup Criteria.

A coal ash sample was also collected on December 17, 1997, and was analyzed for TCL+30, TAL metals, and cyanide.

During the week of January 12, 1998, groundwater samples were collected from each of the four monitoring wells. A second round of groundwater samples was collected during the week of January 26, 1998. All groundwater samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Benzene and lead were detected in three downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.
- Arsenic, chromium, and lead were detected in one upgradient monitoring well at concentrations exceeding the NJDEP GWQC.

As of 2002, eight consecutive quarterly rounds of groundwater samples had been collected for chemical analysis. A second RI that evaluated the potential for the presence of environmental contaminants within the existing landfill cover material also was completed.

The IRP recommended NFA for the site (Versar, Inc., 2004h, 2005b). Subsequently, it was determined that the CW-3A Landfill (FTMM-25) required additional evaluation through the BEE process.

As part of the BEE, two surface water samples and six sediment samples were collected from Shrewsbury Creek in the area of Landfill CW-3A (FTMM-25), and one surface water and one sediment sample were collected from Shrewsbury Creek immediately upstream of Landfill CW-3A (FTMM-25). These are discussed further in **Section 3.4.3.1**.

Shrewsbury Creek borders Landfill CW-3A (FTMM-25) along its northern boundary. In this area, Shrewsbury Creek is narrow (less than 5 feet) and is non-tidal freshwater. The banks of Shrewsbury Creek are fairly steep and have not undergone stabilization. The southern portion of the site is generally flat with greater slopes to the north and east and groundwater underlying Landfill CW-3A (FTMM-25) flows toward Shrewsbury Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines drain the area of Parcel 27 around Buildings 2707 and 2713 which discharges to Shrewsbury Creek at the western end of Landfill CW-3A (FTMM-25). The storm water and water lines that cross through the southern end of Landfill CW-3A (FTMM-25) may also act as contaminant migration pathways from Landfill CW-3A.

The southwestern portion of Landfill CW-3A (FTMM-25) is mowed and maintained lawn surrounded by trees including black locust, black walnut, red cedar, Virginia creeper, and Asiatic bittersweet; the largest portion of Landfill CW-3A, though, is heavily wooded. Along Shrewsbury Creek the vegetation includes wild grape, honeysuckle, wild rose, goldenrod, coastal sweet pepperbush (*Clethra alnifolia*), arrowwood, greenbrier, jewelweed, smartweed, Asiatic dayflower, and poison ivy. The upland areas are forested with a closed canopy and sparse vegetation on the forest floor; dominant species include beech, chestnut oak, sassafras, American holly, black oak, and red maple.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Building 2044 was part of a small complex of buildings located in the southwest section of the CWA golf course. The complex also included Building 2070, a large metal shed, and two smaller metal igloos. Currently, Buildings 2070, 2071, and 2046 are located in the area as confirmed by the VSI. Building 2070 is used to store golf course maintenance and landscaping equipment, such as mowers and tractors. Building 2071 is used as the equipment repair facility. Building 2046 is used as a golf cart and equipment wash area (closed loop) and was also used for pesticide mixing until 2001. The golf course maintenance complex may predate the purchase of the golf course by the Army. Pesticides and herbicides may have been stored and mixed in this area prior to Army ownership of the property. The 1980 IA report (USATHAMA, 1980) contains a 1979 inventory of pesticides and herbicides that were used on the golf course and stored in Building 2044. Pesticides that were present in significant quantities include malathion, sevin, resmethrin, Borocel IV, chlordane, and Dibrom. The IA also discusses a pest control program that was in effect in 1979. The compounds that were used in large quantities include carbaryl (sevin), malathion, chlordane, and diazinon. Some of the herbicides identified in the IA include 2,4-dichlorophenoxyacetic acid, Dacthal, 2,4,5-trichlorophenoxyacetic, and sodium arsenite (USATHAMA, 1980).

The course groundskeeper, who had been part of the grounds crew for 33 years (1960 to 1993), was interviewed during the PA phase. The groundskeeper stated that pesticides and herbicides also were stored inside the two metal igloos and that former mixing activities generally took place directly outside the two igloos. Pesticides and herbicides are not currently stored or mixed on site. The facility has hired an outside contractor to apply pesticides and herbicides.

Under the IRP SI, soil borings were completed at two locations where pesticide mixing was documented to occur within the 0.6-acre site. Two soil samples were collected from each boring, one surface sample and the other sample from the interval just above the water table. In addition, each boring was converted to a monitoring well in order to evaluate groundwater quality. Both soil and groundwater samples were analyzed for TCL+30. The results are as follows:

- Dieldrin was identified in one soil sample at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.
- Benzene was detected in one groundwater sample at concentrations exceeding the NJDEP GWQC.

Two additional monitoring wells were installed during the IRP RI phase. As of 2002, 15 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. The results are as follows:

- Heptachlor epoxide and arsenic were initially detected in two of the four site monitoring wells at concentrations exceeding the NJDEP GWQC. alpha-Chlordane, gamma-chlordane, and 4,4′-DDD also were detected in the two monitoring wells; however, these contaminants were identified at concentrations less than the NJDEP GWQC.

The IRP recommended NFA for the site (Versar, Inc., 2005c). Subsequently, Site CW-6 (FTMM-28) was considered to require additional evaluation through the BEE process.

As part of the BEE, four soil samples were collected from the forested area to the west of the building complex and four sediment samples were collected from the wetlands south-southwest of the building complex in the vicinity of Wampum Brook. These are discussed further in **Section 3.4.3.2**.

Though the building complex is primarily paved areas and buildings, the area immediately west is forested wetland with Wampum Brook to the south of the site. Groundwater underlying Site CW-6 (FTMM-28) flows toward Wampum Brook.

As indicated on the FTMM utility maps in **Appendix K**, storm water, gas, and water utility lines in the area of FTMM-28 may act as additional contaminant migration pathways from Landfill CW-3A away from the direction of Wampum Brook.

The forested areas are dominated by black gum with some red oak and sweet gum. Milkweed is present along the roads. Ferns are present on the forest floor and there are few forbs and grasses. Coastal sweetpepperbush and poison ivy present and skunk cabbage (*Symplocarpus foetidus*) is prevalent in the wetter areas to the southwest.

GIS digital data available through the NJDEP indicate that the area west and south of Site CW-6 is deciduous wooded wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 2, which is assigned to patches containing one or more occurrences of a species of special concern, in this case the Wood Thrush.

2.5.2.3 BUILDING 2700 (ECP PARCEL 15)

The Myer Center facility (Building 2700) is located in the CWA of FTMM at the intersection of Pearl Harbor Avenue and Corregidor Road. Parcel 15 encompasses an area of approximately 70 acres of which the Building 2700 footprint is 171,000 square feet. It was built in 1954 and has an extensive history of laboratory operations, photoprocessing, and paint spraying booths. Operations included electrochemical research, growing and shaping of crystals, various plating operations, mixing of magnetic powders, machining, welding, spray painting, use of solvents for equipment cleaning, and other miscellaneous laboratory operations utilizing standard laboratory chemicals. By 1959, additional operations included shock and vibration testing of certain components; glass blowing; a plastics laboratory that made plastic castings, laminates, and forms sprayed with polyester resins; and a ceramics laboratory. A satellite dispensary and dental clinic was present in 1972 that serviced 2,610 employees. During the 2006 VSI performed as part of the Phase I ECP, the Dental Clinic was no longer operational at Building 2700. According to FTMM personnel, no chemical wastes have been discharged to the sanitary sewer since the mid-1980s. Activities at Building 2700 have since been converted primarily to administrative functions. Current waste management practices prohibit the discharge of any materials, other than water and biodegradable soaps, into the sanitary sewer system.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, groundwater, soil gas, and indoor air samples were collected to assess environmental conditions on Parcel 15. Geophysical surveys were conducted to determine if USTs remained on site.

Seven sediment samples (including one duplicate sample) were collected from three sample borings located adjacent to three stormwater outfalls within Shrewsbury Creek. These sample locations were south of the walking bridge, near the southwest portion of Building 2525 on the western side of Shrewsbury Creek. Samples were collected to investigate any potential historical discharges from Building 2700 into Shrewsbury Creek. Shrewsbury Creek is a non-tidal water body in this portion of the facility located southeast of Building 2700 in the CWA.

At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. Samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 12 SVOCs and 18 metals were detected in Parcel 15 sediment samples.

- Of the 12 SVOCs, 2 (acenaphthene and fluorene) were detected at concentrations that exceeded the freshwater sediment criteria in one sample.
- Of the 18 metals, 2 (chromium and copper) were detected at concentrations that exceeded the freshwater sediment criteria in three samples.

Fifty-three surface soil samples and 59 subsurface soil samples (including 6 duplicate samples) were collected from 53 distinct Geoprobe® borings in order to investigate any potential releases associated with former barracks located north of Building 2700. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table from each boring. Samples were analyzed for TPH and VOC+10. The results are as follows:

- TPH was detected in 7 of the 53 surface soil samples and in 2 of the 59 subsurface soil samples. None of the TPH results exceeded regulatory standards; therefore, VOCs were not analyzed.

Seven groundwater samples (including one duplicate sample) were collected from six distinct temporary wells that were installed. Temporary wells were installed along the downgradient boundary of the parcel (along Shrewsbury Creek). Groundwater samples were collected to investigate any potential release from possible former heating oil USTs associated with former barracks, as well as other potential discharges from historical activities at Building 2700. Samples were analyzed for TCL+30 (without pesticides or PCBs) and TAL metals. The results are as follows:

A total of 1 SVOC, 1 VOC, and 19 metals were detected in Parcel 15 groundwater samples.

- One SVOC, bis(2-ethylhexyl) phthalate, was detected at concentrations that exceeded the NJDEP GWQC. The contamination was most likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a concern in groundwater at Parcel 15.
- One VOC, toluene, was detected at a concentration less than the NJDEP GWQC.
- Of the 19 metals detected, 6 (aluminum, arsenic, iron, lead, manganese, and sodium) were detected at concentrations exceeding the NJDEP GWQC.

A total of 15 soil gas and 15 indoor air samples were collected in and around Building 2700. A total of 32 VOCs were detected in Parcel 15 soil gas samples and a total of 22 VOCs were detected in Parcel 15 indoor air samples. The results are as follows:

- Of the 32 VOCs detected, 4 (benzene, PCE, TCE, and vinyl chloride) were detected at concentrations that exceeded the NJDEP generic vapor intrusion non-residential soil gas screening levels in 14 soil gas samples.
- Twenty-two VOCs were detected at concentrations less than the NJDEP generic vapor intrusion non-residential indoor air screening levels in indoor air samples.

As part of the geophysical survey, an electromagnetic induction (EMI) survey was conducted throughout the area of the parcel where former barracks were identified to determine if USTs are present. Follow-up ground-penetrating radar surveys were conducted where anomalies were identified during the EMI surveys. No suspected USTs were identified as a result of the geophysical survey.

Based upon the resulting data, the SI recommended that NFA be taken for soil and groundwater within Parcel 15 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, two surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.3**.

Shrewsbury Creek is east of Building 2700. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater. Both banks of Shrewsbury Creek are steep and have not undergone stabilization. Though the banks are heavily vegetated, the surrounding area is predominantly pavement and buildings.

As indicated on the FTMM utility maps in **Appendix K**, several storm water lines drain the area of Parcel 15 around Building 2700, as well as the area of Parcel 27 around Building 2525, which discharges to Shrewsbury Creek. Numerous storm water, gas, and water utility lines in the area of Parcel 15 may act

as additional contaminant migration pathways from Parcel 15 with direction dependent on the utility gradients.

Vegetation along the banks of Shrewsbury Creek is thick and includes common reed, black walnut, pin oak, wild grape, wild morning glory, pokeweed, Asiatic bittersweet, poison ivy, wild rose, sweet gum, milkweed, goldenrod, Virginia creeper, red cedar, Norway maple, white mulberry, black cherry, sassafras, and winged sumac.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Parcel 27 is located in the southwest portion of CWA and includes the Environmental Test Facility (Building 2704), former Pulse Power Center (Building 2707), Sheet Metal Shop (Building 2502), Machine Shop (2503), Paint and Fabrication Facility (2506), and a Former Motor Pool (2501). Parcel 27 encompasses an area of approximately 30 acres.

Building 2704 has been used as an environmental test chamber since 1965. Chemical use in this building is limited to hydraulic fluid and standard shop chemicals (i.e., petroleum-based solvents, oils, and greases). While current waste handling practices are modern, historical waste handling practices are unknown. The building has multiple floor drains which, according to engineering drawings, are connected to the storm sewer.

Building 2507 is the Tactical Vehicle Repair Shop where petroleum and solvent use would be common during vehicle maintenance operations.

In 2007, as part of the ECP SI (Shaw, 2008), sediment and surface soil were collected to assess environmental conditions on Parcel 27. Geophysical surveys were conducted to determine if a former debris burial area remained on site.

Four sediment samples were collected from two sample borings located within Shrewsbury Creek. One sample was located adjacent to a stormwater outfall and the other was located downstream. At each sample location, two samples were collected; one from the 0- to 6-inch interval bgs, and the other from the 12- to 18-inch interval bgs. No visual or olfactory evidence of sediment contamination was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 8 SVOCs and 20 metals were detected in Parcel 27 sediment samples.

- Of the eight SVOCs, none were detected that exceeded the freshwater sediment criteria.
- Of the 20 metals, 8 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations that exceeded the freshwater sediment criteria in all four samples.

Two surface soil samples were collected from two sample borings located in the wooded area to the northeast of Building 2507. At each location, the sample was collected from the 0- to 6-inch bgs interval, and a sample for VOC analysis was collected from the 18- to 24-inch bgs interval. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

- A total of 8 SVOCs and 18 metals were detected in Parcel 27 surface soil samples below the Non-Residential Direct Contact Soil Cleanup Criteria.

An EMI survey was conducted over the area identified as a possible debris burial area.

- No anomalies indicative of debris burial areas were identified.

Based upon the resulting data, the SI recommended that NFA be taken for soil within Parcel 27 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, two surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.4**.

Shrewsbury Creek is north of Building 2704. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater.

Along Shrewsbury Creek the vegetation includes wild grape, honeysuckle, wild rose, goldenrod, coastal sweet pepperbush, arrowwood, greenbrier, jewelweed, smartweed, Asiatic dayflower, and poison ivy.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.5 BUILDING 2525 (PARCEL 28)

Parcel 28, with an area of approximately 30 acres, is located in the CWA and encompasses Building 2525 – the former Eatontown Laboratory complex. Building 2525 was constructed between 1941 and 1942. The Eatontown Signal Laboratory was renamed Watson Laboratories in 1945 and subsequently moved to Rome, New York, in 1951.

Three separate septic tanks and leach fields and one underground transformer vault are within the Building 2525 area. The main sanitary sewer line from the building is shown to discharge to a septic tank and leach field east of the building. A review of the DPW map and engineering drawings repository indicated a 2-inch “acid proof drain” leading from Bay 1 to a dry well southeast of the building. Floor drains were shown to discharge to the brook northwest of the building. Building revitalization plans show all floor drains were later connected to the sanitary sewer system. Building 2525 was included in the Watson Laboratory complex in the mid-1940s. Crystal growing and processing operations were conducted in the Watson Laboratory building located in the southwest portion of the CWA in the early 1950s. Operations included cleaning of crystals, quartz etching, soldering, and gold (and other metal) plating, which was conducted in Building 2532. These operations involved chemicals such as carbon tetrachloride, ammonium bifluoride, cadmium sulfate, and sulfuric acid. Crystal etching using ammonium bifluoride was also noted in Building 2538. Other processes associated with the Watson Laboratories included machining of metals and remelting lead in Building 2533, growing of crystals and physical chemistry in Building 2534, and machining of crystals in Building 2538.

Following the 1951 Watson Laboratories move, the Aviation Research and Development Command Laboratory was moved from the Myer Center to Building 2525. This laboratory operation occupied the building until 1978. A 1978 industrial hygiene survey reported ozalid reproduction in Room 5101 of Building 2525. Building revitalization plans show all floor drains connected to the sanitary sewer system. No sumps or floor drains were noted during the 2006 VSI. The use of the building has been strictly administrative since the late 1990s, as confirmed during the VSI.

Parcel 28 also contains the CECOM laboratory and radiological testing facility housed in Building 2540. This building contains a gamma irradiator, Radiac calibrators, a storage room for low-level RAM with multiple radioactive sources from the demilitarization of commodities, a nuclear counting laboratory, and several health physics laboratories. A survey of the interior of Building 2540 will be performed as part of the radiological scoping surveys.

According to the 1993 Environmental Research, Inc., Aerial Photographic Site Analysis, there are a fenced open storage area and possible tank pads in the northern portion of Parcel 28, to the northeast of Building 2525.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 28. Geophysical surveys were conducted to

determine the absence or presence of formerly utilized septic tanks, associated leaching fields, and USTs.

A total of four sediment samples were collected from two sample borings located along the southeast bank of Shrewsbury Creek adjacent to Building 2525. Samples were located directly downgradient of potential former discharge pipes observed on the southeast bank of the creek. Samples were collected to investigate any potential historical discharges from former floor drains to outfalls that were associated with Building 2525 into Shrewsbury Creek. Shrewsbury Creek is a non-tidal water body in this portion of the facility located southeast of Building 2700 in the CWA. At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 12- to 18-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 5 SVOCs, 1 VOC, and 17 metals were detected in Parcel 28 sediment samples.

- All SVOCs and the one VOC (acetone) were detected at concentrations less than the freshwater sediment criteria.
- Of the 17 metals, 1 (chromium) was detected at a concentration that exceeded the freshwater sediment criteria in all for samples.

A total of three surface soil samples and three subsurface soil samples were collected from three distinct Geoprobe® borings in order to investigate potential septic system discharges and former storage pads that were identified through aerial analysis. An additional two surface soil samples were collected from hand-augered borings. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch bgs interval. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table from each boring. No visual or olfactory evidence of soil contamination was noted during field operations. Samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 12 SVOCs, 1 VOC, and 17 metals were detected in Parcel 28 surface and subsurface soil samples. The results are as follows:

- The 12 SVOCs and 1 VOC (acetone) were detected at concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria.
- Of the 17 metals, 1 (arsenic) was detected at a concentration in excess of the Non-Residential Direct Contact Soil Cleanup Criteria in one sample.

Four test pits located in an open field east of Building 2525 and Heliport Drive, and one test pit northeast of Building 2525, were excavated to determine if any contamination exists from former septic tank and leach fields that once serviced Building 2525. Soil sample depths were contingent upon field observations (e.g., depth to water table, thickness of layered engineered gravel) and field screening results. A total of eight subsurface soil samples (including two duplicate samples) were collected from the five test pits. No visual or olfactory evidence of impacted soil was noted. All samples were analyzed for TCL+30 (minus pesticides) and TAL metals. The results are as follows:

- A total of 12 SVOCs, 1 VOC, and 17 metals were detected in concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria in soil samples collected from test pits.

A total of five groundwater samples (including one duplicate sample) were collected from four distinct temporary wells that were installed with the Geoprobe® rig. Three temporary wells were installed downgradient of former drainage fields, and one temporary well was installed downgradient of a former storage pad area located in an open field west of Building 2290 and Guam Lane. Samples were analyzed for TCL+30 (without pesticides/PCBs), TAL metals, ammonia, nitrate, and nitrite.

A total of 1 SVOC, 3 VOCs, and 13 metals were detected in Parcel 28 groundwater samples. The results are as follows:

- One SVOC, bis(2-ethylhexyl) phthalate, was detected at concentrations less than the NJDEP GWQC.

- Three VOCs (acetone, chloroform, and toluene), were detected at concentrations less than the NJDEP GWQC in Parcel 28 groundwater samples.
- Two metals (aluminum and manganese) were detected at concentrations exceeding the NJDEP GWQC.
- Nitrite and nitrate were detected at concentrations less than the GWQC.

The geophysical survey was conducted to investigate the location of former septic tanks, USTs, and drywells. The results are as follows:

- No drywell was identified within Parcel 28; however, one possible UST (P28-8), one suspected septic holding tank, and one suspected septic distribution box and associated piping were identified.

Based upon the resulting data, the SI recommended that NFA be taken for soil within Parcel 28 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, four surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.5**.

Shrewsbury Creek is north of Building 2525. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater. Both banks of Shrewsbury Creek are steep and have not undergone stabilization. Though the banks are heavily vegetated, the surrounding area is predominantly pavement and buildings.

As indicated on the FTMM utility maps in **Appendix K**, several storm water lines drain the area of Parcel 28 around Building 2525, as well as the area of Parcel 15 around Building 2700, which discharges to Shrewsbury Creek. Numerous storm water, gas, and water utility lines in the area of Parcel 28 may act as additional contaminant migration pathways from Parcel 28 with direction dependent on the utility gradients.

Vegetation along the banks of Shrewsbury Creek is thick and includes common reed, black walnut, pin oak, wild grape, wild morning glory, pokeweed, Asiatic bittersweet, poison ivy, wild rose, sweet gum, milkweed, goldenrod, Virginia creeper, red cedar, Norway maple, white mulberry, black cherry, sassafras, and winged sumac.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

Table 2-2
Ambient Levels of Selected Metals and Other Analytes in Soil

Parameter	N	Detects	MDL (mg/kg)	Mean (mg/kg)	Median (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)
Metals										
Aluminum	95	95	20	6734	6800	424	23100	10800	12300	5425
Antimony	95	0	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	95	86	1	7.9	5.2	0.50	83.1	13.6	15.7	4.7
Barium	95	62	20	36.0	28.3	10.0	154	65.8	83.7	27.3
Beryllium	95	15	0.5	0.36	0.29	0.25	1.80	0.68	0.76	0.33
Cadmium	95	5	0.5	0.36	0.29	0.25	2.70	0.32	0.85	0.32
Calcium	95	61	500	1312	995	250	21600	2000	3810	797
Chromium	95	95	1	18.7	11.8	1.1	171	34.7	39.8	12.9
Cobalt	95	7	5	3.5	2.9	2.5	32.0	3.2	6.7	3.1
Copper	95	86	2.5	15.0	9.3	1.3	93.0	33.3	41.3	9.7
Iron	95	95	10	11909	8830	735	68900	21100	35700	8448
Lead	95	86	10	59.7	37.6	5	344	144	179	37.5
Magnesium	95	56	500	1056	673	250	13800	1870	2660	664
Manganese	94	94	1.5	111	62.4	2.6	1030	206	423	60.1
Mercury	95	40	0.1	0.18	0.06	0.05	6.10	0.21	0.33	0.09
Nickel	94	42	4	5.2	2.4	2.0	16.9	12.3	13.9	4.1
Potassium	94	45	500	1022	310	250	22300	1750	2090	568
Selenium	94	0	1	NA	NA	NA	NA	NA	NA	NA
Silver	94	3	1	0.68	0.6	0.50	6.30	0.65	0.65	0.61
Sodium	94	0	500	NA	NA	NA	NA	NA	NA	NA
Thallium	94	2	1	0.67	0.6	0.50	1.70	1.15	1.25	0.64
Vanadium	94	89	5	21.1	16	2.5	202	35.5	46.3	15.8
Zinc	94	91	2	53.4	39.9	1.0	259	106	157	36.4
PAHs										
Benzo(a)anthracene	94	54	0.029	0.14	0.04	0.01	1.82	0.43	0.57	0.04
Benzo(a)pyrene	94	48	0.037	0.14	0.02	0.01	1.8	0.42	0.67	0.04
Benzo(b)fluoranthene	94	49	0.04	0.35	0.19	0.05	4.09	0.66	1.24	0.23
Benzo(b+k)fluoranthene	95	47	0.08	0.35	0.19	0.05	4.1	0.66	1.2	0.23
Dibenzo(a,h)anthracene	94	9	0.037	0.03	0.01	0.01	0.29	0.02	0.13	0.01
Indeno(1,2,3-c,d)pyrene	94	33	0.018	0.07	0.01	0.01	0.57	0.23	0.37	0.02
Chrysene	94	53	0.022	0.15	0.05	0.01	1.78	0.47	0.7	0.05

Notes:
Source - BEM Systems, Inc., 1998
N = Number of samples
MDL = Method detection limit

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
1	2600, 3001 - 3052, 3216	Pine Brook residential housing area, General Storage Warehouse	63.14	No	This is the Pine Brook residential housing area in the southeast portion of Charles Wood Area (CWA) and includes one general storage warehouse (2600). No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Tank AST-2070-a (500-gallon capacity for gasoline) and tank AST-2070-b (500-gallon capacity for diesel fuel) are in use; secondary containment is in place; and no evidence of a release was identified. Former residential fuel oil storage tanks have been either removed or closed in place and no contamination was identified during closure. No evidence of release or contamination has been detected; a Baseline Ecological Evaluation (BEE) is not required.
2	IRP Site FTMM-63 (Bldg 2603)	Sewage Lift Station	0.19	No	This parcel is a sewage lift station at which a 275-gallon underground storage tank (UST) and 225 cubic yards of potentially contaminated soil were removed in 1998. No contaminants remain at the site in soil or groundwater at concentrations above New Jersey Department of Environmental Protection (NJDEP) cleanup criteria. Tank AST-2603 (500-gallon capacity for diesel) and an emergency generator are present for the lift station; secondary containment is in place; and no evidence of a release was identified. Though Wampum Brook runs past Parcel 2, potentially contaminated soil was removed and no contamination remains in soil or groundwater. No migration pathway exists to environmentally sensitive areas. A BEE is not required. BEEs and sampling being conducted related to CW-6 also addresses Parcel 2 and Wampum Brook.
3	3050	Former UST	0.05	No	This is the location of a former residential UST for #2 fuel oil (UST-3050-30). The UST and 23 cubic yards of potentially contaminated soil have been removed. A Closure Report was submitted to NJDEP on 06/01/00, and a No Further Action (NFA) approval letter was received from the NJDEP on 8/29/00. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.
4	3027	Former UST	0.05	No	This is the location of a former residential UST for #2 fuel oil (UST-3027-28). The UST and 8.7 cubic yards of petroleum-contaminated soil have been removed. A closure report was submitted to the NJDEP requesting an NFA determination on 10/17/2001; however, no regulatory concurrence is required for former residential USTs. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.
5	3021	Former UST	0.08	No	Former Residential UST-3021-27 (#2 fuel oil) and 113 tons of contaminated soil were removed from this parcel. No contamination above NJDEP criteria remains in groundwater. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 10/17/00. Though Wampum Brook runs past Parcel 5, potentially contaminated soil was removed and no contamination remains in soil or groundwater; a BEE is not required. No migration pathway exists to environmentally sensitive areas. BEEs and sampling being conducted related to CW-6 also addresses Parcel 5 and Wampum Brook.
6	FTMM-31 (CW-9)	Former Sludge Disposal	1.60	No	This parcel was investigated under the Fort Monmouth Installation Restoration Program (IRP). Sludge generated from Fort Monmouth sewage treatment plants was historically stored in this area before being used as a soil conditioner and fertilizer on the golf course. This parcel is located on the CWA Golf Course southeast of Building 2070. No contaminants were identified above NJDEP Direct Contact Soil Cleanup Criteria or groundwater quality standards during the Site Investigation. An NFA determination was approved by the NJDEP in 1996. Since no contaminants are present, a BEE is not required.
7	IRP Site FTMM-28 (CW-6)	Former Pesticide Storage Building 2044 UST-2044-24 UST-2044-32 UST-2044-33	0.67	Yes	This parcel was investigated under the Fort Monmouth IRP. Use of pesticides and herbicides prior to and as part of Army ownership have occurred in this parcel. The pesticide dieldrin was detected in one soil sample slightly above NJDEP Direct Contact Soil Cleanup Criteria; pesticides - heptachlor epoxide and chlordane as well as arsenic were historically detected above criteria in groundwater but have been at concentrations below criteria in recent rounds of sampling. A Remedial Investigation (RI) report requesting an NFA determination from the NJDEP was submitted in May 2005. Three former USTs and potentially contaminated soil were removed in 1993. Fuel-related contaminants were initially detected in groundwater above NJDEP criteria and a long term monitoring program was initiated. No fuel-related contaminants were detected subsequent to 1997, and an NFA approval letter for all three former USTs was received from the NJDEP on 1/10/2003. A BEE is recommended to address potential contamination related to CW-6 in soils and sediment/soils in adjacent deciduous wooded wetlands as well as Wampum Brook.
8	2043	UST-2043-36	0.05	No	This is the location of a former UST for diesel fuel (UST-2043-36). The UST and potentially contaminated soil have been removed. No contaminants were detected in groundwater above the NJDEP groundwater criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
9	2068 Golf Course Pesticide Mixing Area Outdoor Pool & Chlorination facilities Residential housing	Golf Course Pesticide Mixing Area Outdoor Pool & Chlorination facilities Residential housing	161.27	No	This parcel is inclusive of the CWA Golf Course (including clubhouse, maintenance facilities, and current pesticide mixing facilities), residential housing along Megill Drive (Buildings 2022 - 2042), and the outdoor pool and associated chlorination facilities. The current pesticide mixing facilities are state-of-the-art and include secondary containment. No storage of pesticides occurs on Fort Monmouth property. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Tanks AST-2021, AST-2043, and AST-2044 are in use; secondary containment is in place; and no evidence of a release was identified. Twenty-one (21) former residential fuel oil USTs have been removed, no contamination was identified during closure, and no regulatory concurrence is required. Four non-residential USTs have been removed; no contamination was identified during closure; and NFA approval letters were received from the NJDEP in 2000. No contamination or releases have been identified; a BEE is not required.
10	2000	Former UST	0.04	No	Former Residential UST-2000-38 (#2 fuel oil). Petroleum-related contaminants were detected in post-excavation soil samples at concentrations below the NJDEP cleanup criteria. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soils were removed and no migration pathways are present to environmentally sensitive areas; a BEE is not required.
11	2067	UST-2067-37	0.08	No	This is the location of a former UST for #2 fuel oil (UST-2067-37). The UST and 90 cubic yards of potentially contaminated soil have been removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soils were removed and no migration pathways are present to environmentally sensitive areas; a BEE is not required.
12	FTMM-29 (CW-7)	Former Polychlorinated Biphenyl (PCB) Transformer Location	0.10	No	This parcel was investigated under the Fort Monmouth IRP. A PCB transformer, formerly located in front of the Officers Club in Building 2000, was removed from service in 1990 and disposed off site; PCB contamination in the soil was removed in 1998. An RI report requesting an NFA determination from the NJDEP was submitted in September 2004. Subsequent to NJDEP's response to the NFA request, additional surface water, sediment, and soil samples were collected and concentrations were below criteria. An additional request for an NFA determination will be submitted to NJDEP. Though Parkers Creek is within 300 feet of Parcel 12, PCB contaminated soil has been removed and migration pathways to Parkers Creek are not present; a BEE is not required.
13	Former Residential Bldgs 2004 - 2016	Potential USTs associated with former residential housing	6.42	No	A 1956 fuel distribution plan displays fuel oil USTs associated with former residential dwellings in this area. Due to the age of these USTs, there is no documentation regarding whether they have been removed. This area is currently paved. No contamination has been detected and no suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation; a BEE is not required.
14	NW Area of CWA	Former Residential Housing in NW Area of CWA Former #2 Fuel oil UST Former wash rack, vehicle storage area	77.47	No	Former residential area in northwest portion of CWA. Based on the timeframe in which these early structures existed (buildings were demolished prior to 1960), it is likely that USTs were utilized for fuel storage. No documentation exists confirming whether USTs have been removed. One suspected UST was identified during a geophysical survey conducted as part of the 2008 Site Investigation and is currently being addressed. This parcel also includes a former UST for #2 fuel oil (UST-2275-12) at which a release was noted during removal activities. The UST and contaminated soils have been removed. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. This parcel includes the area identified in a 1947 aerial photograph as a vehicle wash rack and vehicle storage area. Contaminated soil has been removed, evidence of a release to groundwater has not been detected, and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 14 and Shrewsbury Creek.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
15	2700 (Myer Center) 2705 FTMM-23 (CW-2)	Industrial and Laboratory Activities	37.99	Yes	This parcel encompasses current and former laboratory and industrial processes within Building 2700 and the surrounding area. Building 2705 is a former photo processing facility and night vision laboratory. Chemical and hazardous susbstance use has been extensively documented in association with the historic and current research and industrial activities in this parcel. Due to groundwater volatile organic compound contamination identified in adjacent parcel 16, vapor intrusion is a potential recognized environmental condition in this area. The former wastewater treatment lime pit located northwest of Building 2700 was investigated under the Fort Monmouth IRP as Site FTMM-23 (CW-2). The lime pit was demolished and disposed of in 2002. An NFA determination has been requested from the NJDEP. No response has been received from the NJDEP. Tank AST-2700A (500-gallon capacity for diesel fuel) and tank AST-2700B (500-gallon capacity for diesel fuel) are in use; secondary containmen is in place; and no evidence of a release was identified. A 1999 freon release due to a ruptured disc on equipment in Building 2706 is listed in the New Jersey Hazardous Material Incident Database. Acenaphthene, fluorene, chromium, and copper were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended for Parcel 15 to address potential discharges through stormwater outfalls into Shrewsbury Creek.
16	FTMM-22 (CW-1)	Former Wastewater Treatment Lime Pit	0.62	No	The former wastewater treatment lime pit located in the courtyard of Building 2700 and is being addressed under the Fort Monmouth IRP as Site FTMM-22 (CW-1). Volatile organic compounds are present in groundwater at concentrations above NJDEP Groundwater Quality Criteria. At present, the contaminant plume has not encroached upon Building 2700. However, the downgradient migration pathway is in the direction of the referenced building and vapor intrusion is a potential recognized environmental condition. A contaminant treatment system (soil vapor extraction and air sparging) was in place until 2005. Treatment of the groundwater through enhanced bioremediation (Hydrogen Release Compound [HRC] injection) will commence in FY 07 with the goal of achieving groundwater compliance by FY10. No migration of contaminants towards Parker Creek is occurring and a BEE is not recommended.
17	UST-2700-36 UST-2700-37 UST-2700-38 UST-2700-39	Former #6 Fuel oil USTs	0.16	No	Five former #6 fuel oil tanks (UST-2700-35, UST-2700-36, UST-2700-37, UST-2700-38, and UST-2700-39) and a total of 500 cubic yards of potentially contaminated soil were removed in 1998. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
18	UST-2700-61	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and potentially contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 18 and Shrewsbury Creek.
19	UST-2337-65	Former #2 Fuel oil UST	0.17	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 19 and Shrewsbury Creek.
20	along SW portion Parkers Creek	SW portion Parkers Creek	8.30	No	This is the undisturbed, wooded area surrounding Parkers Creek in the southwest portion of the CWA. No release or disposal of hazardous substances or petroleum products has occurred; a BEE is not required.
21	FTMM-25 (CW-3A)	Suspected former landfill	2.08	Yes	The suspected former landfill located in the southwestern portion of the CWA north of Building 2707 is being addressed under the Fort Monmouth IRP as Site FTMM-25 (CW-3A). Construction debris and coal ash were identified during the excavation of exploratory test pits. No contaminants of concern were identified in soil or groundwater at this site during RIs conducted under the IRP, and an NFA determination was submitted for NJDEP approval. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Shrewsbury Creek.
22	UST-2707-40	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1998. A closure report was submitted to the NJDEP requesting an NFA determination in 1999, and an NFA approval letter was received from the NJDEP on 2/24/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
23	UST-2500-53 UST-2500-54 UST-2500-55	Former Gasoline USTs	0.05	No	Five former gasoline USTs and petroleum-contaminated soil were removed in 1993. A closure report was submitted to the NJDEP requesting an NFA determination in 1996, and an NFA approval letter was received from the NJDEP on 4/20/2001. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
24	UST-2502-13	Former #2 Fuel oil UST	0.03	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1996. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
25	UST-2503-14	Former #2 Fuel oil UST	0.03	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1996. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 7/10/1998. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
26	UST-2504-15	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1995. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
27	2501 2503 2506 2507 2624 2625 2630 2632 2704 2707 2708 2709 2710 2713 Former Watson Laboratories	Southwest portion of CWA that includes the former Pulse Power Center, Machine Shop, Paint and Fabrication facility, Former Motor Pool, and portions of the former Watson laboratories	29.83	Yes	This parcel in the southwestern portion of CWA includes numerous current and former industrial and research operations. This area formerly housed the Pulse Power Center (2707, 2708, 2709, 2710, 2713), a paint shop (2506), a machine shop (2503), motor pool (2501), hazardous waste storage locations, and portions of the former Watson laboratories. 2501 - Former motor pool. 2503 - This facility is a machine shop and formerly contained a parts cleaner that utilized solvents. 2506 - Former paint and fabrication shop that utilized solvents and petroleum products. 2507 - Tactical Vehicle Repair Shop where petroleum and solvent use would be common during vehicle maintenance operations. 2624 - Former Hazardous Waste Storage Facility; 1980 U.S. Army Toxic and Hazardous Materials Agency reported that this facility was used for storage of bulk research chemicals. 2704 - Environmental testing of electronic equipment. Floor drains shown as connected to storm sewer. Former Watson Laboratories - this former complex of laboratories included Buildings 2532, 2533, 2534, and 2538. Operations at these former facilities occurred in the early to mid-1950s. The buildings have been demolished. Four aboveground storage tanks currently in use. Twelve (12) USTs removed from 1993 to 2002. No releases noted. NJDEP Closure Approval Letters received for seven closures. Awaiting NJDEP response for five tanks closed in 2002. Metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential discharges from floor drains and storm sewers from Buildings 2507 and 2704 into Shrewsbury Creek.
28	2525 2535 2539 2540 Former Motor Pool NW of 2566	Former Eatontown Laboratory, Battery Test Facility, Safety calibration laboratory office, Former Motor Pool	37.78	Yes	This parcel encompasses Buildings 2525, 2535, 2539, 2540, and all land within this area. Numerous demolished buildings located to the east and southeast of 2525. Industrial operations include the battery test facility (2535), former Eatontown laboratory (2525), and the Safety office calibration laboratory. Outdoor storage and ground staining were identified in the area of the former motor pool in aerial photographs from 1947, 1957, 1963, 1974, and 1991. Ten (10) former fuel oil USTs have been removed; no contamination was identified during closure; and NFA approval letters were received from the NJDEP. Chromium was identified as a constituent of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential historic discharges from former floor drains to outfalls that were associated with Building 2525 into Shrewsbury Creek.
29	UST-2561-31	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1995. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 7/10/98. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
30	UST-2562-41	Former gasoline UST	0.05	No	A former gasoline UST and potentially contaminated soil were removed in 1993. All confirmatory soil analytical results were below NJDEP criteria. Methyl-tertiary-butyl ether (MTBE) and lead were previously detected in groundwater above NJDEP criteria, but have been below the standards since November 1998. A closure report requesting NFA was submitted to the NJDEP on 01/02/02. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
31	UST-2537-27	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and 15 cubic yards of petroleum-contaminated soil were removed in 1997. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
32	Former Indoor Small Arms Range (Bldg T-2537) FTMM-26 (CW-4)	Former Indoor Small Arms Range (Bldg T-2537)	0.33	No	The former indoor small arms firing range located west of Building 2566 was investigated under the Fort Monmouth IRP as Site FTMM-26 (CW-4). Lead identified in soil above NJDEP Direct Contact Soil Cleanup Criteria, spent rounds, and casings were removed in 1997. An RI report requesting an NFA determination from the NJDEP was submitted in October 2005. An NFA was issued on April 26, 2007. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas. A BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
33	UST-2534-24	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST was removed in 1994. Petroleum-related contaminants were detected in post-excavation soil samples at concentrations below the NJDEP cleanup criteria. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
34	2567 FTMM-58	Army & Air Force Exchange Service (AAFES) Gasoline Station (FTMM-58)	1.26	No	This parcel is being addressed under the Fort Monmouth IRP as Site FTMM-58 (Building 2567). Site FTMM-58 is an active gasoline service station operated by the AAFES organization. Three modern gasoline USTs are in use at Building 2567. The station is located at the corner of Hope Road and Laboratory Road. Five single-walled steel USTs and 1,000 cubic yards of petroleum-contaminated soil were removed as part of a renovation project that was initiated in 1991. Gasoline-related contaminants were detected in groundwater above NJDEP groundwater quality criteria. Due to groundwater contamination from volatile organic compounds, vapor intrusion is a recognized environmental condition in this area. A Classification Exception Area was filed with the NJDEP; and in situ bioremediation (Oxygen Release Compound [ORC] injection) and monitored natural attenuation, including groundwater monitoring, were selected as the remedial approach. Groundwater contamination is restricted to the immediate vicinity of Building 2567 and no evidence of migration to environmentally sensitive areas has been detected; a BEE is not required.
35	Child Development Center (2290) Residential Housing (2231-2240, 2260) FTMM-27 Former sewage treatment plant	2290, 2231 - 2240, 2260	58.88	No	This parcel includes the Child Development Center (2290), existing residential housing (2231 - 2240, 2260), the former sewage treatment plant, and the wooded portion of CWA south of 2566. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. The former Charles Wood Sanitary Treatment Plant (STP) is addressed under the Fort Monmouth IRP as Site FTMM-27 (CW-5). The former STP was located in the center of the CWA, bounded by Hope Road to the east, Corregidor Road to the north, Guam Lane to the west, and Laboratory Road to the south. The STP was closed on October 29, 1975, and demolished in 1983. No compounds of concern were detected above NJDEP criteria, and an NFA determination was approved by the NJDEP in 1994. Eleven former residential fuel oil USTs have been removed; no contamination was identified during closure; and no regulatory concurrence is required. Since no contamination is present, a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
36	1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1230 1231 1152 170 200 FTMM-09, 47	Current use is administrative and government tenant activities, electrical substation (1231), Military Academy Prep School (1204, 1230), former Signal School (1200)	118.54	No	This parcel is the western portion of Main Post. Batteries associated with Uninterrupted Power Supplies (UPSs) are present in association with electrical substations and computer/mission activities throughout the area. Two aboveground storage tanks (ASTs), one located at Building 200 and one located at Building 127, are in use with secondary containment in place. One underground storage tank (UST) with leak detection and secondary containment in place is located at Building 1203. FTMM-09 (M-9 Former Polychlorinated Biphenyl [PCB] Transformer Site) and FTMM-47 (Buildings 1002, 1208, and 1209 former PCB transformer site) were investigated under the Intallation Restoration Program (IRP) and it was determined no transformers were leaking and all transformers are considered non-PCB class equipment. Staining of concrete and elevated concentrations of PCBs in concrete samples collected below existing transformers at Buildings 1208 and 1209 were determined to be minor in nature and will be addressed accordingly upon removal or replacement of existing transformers. A No Further Action (NFA) determination was approved by the New Jersey Department of Environmental Protection (NJDEP) in 1994. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas; therefore, no Baseline Ecological Evaluation (BEE) is required.
37	1220 FTMM-10	Boiler Plant	1.06	No	This parcel includes the boiler plant (Building 1220), small amounts of various chemicals utilized during operation of the facility, and associated current and former petroleum storage locations. Ten former fuel oil USTs and petroleum-contaminated soil were removed, and NFA approval letters were received from the NJDEP in 2000 and 2003. FTMM-10 (Asbestos Storage Area) was inspected under the IRP, no asbestos containing material was found, and an NFA determination was approved by the NJDEP in 1994. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
38	Former Outdoor Firing Range (1940-1955 Pistol Range) FTMM-21	Former Outdoor Small Arms Firing Range	0.59	No	This parcel is the 1940-1955 Small Arms Training Range and is included in the Fort Monmouth Military Munitions Response Program (MMRP). The area has been a maintained grass-covered area for over 40 years. Due to the historic use of this site as a small arms firing range, metals contamination in soil was investigated and no metals were found above NJDEP soil criteria. The former pistol range is overlain by maintained grass areas and asphalt pavement. No contaminants were identified during the 2008 Site Investigation; therefore, no BEE is required.
39	1150	Vail Hall - Communications back up and administrative offices	0.60	Yes	This parcel is the area between Building 1150 and Parkers Creek. Floor drains and a sump pump are present in the basement of 1150 for high water table intrusion and ultimately discharge to Parkers Creek via a basin behind the building. Building 1150 houses a large UPS room in the basement for communications backup and previous activities included film developing. Base/Neutrals (B/Ns) and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential discharges to Parkers Creek.
40	FTMM-02	Former Landfill	8.10	Yes	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-02. This is the location of former landfill M-2. An NFA recommendation was submitted to the NJDEP for near surface soil; NJDEP's response in June 2009 included a request for additional sediment samples from Mill Creek and a BEE. An equivalent to a Declaration of Environmental Restriction has been incorporated into the Fort Monmouth Master Plan for PCB contamination in below grade soil. A Groundwater CEA was established with the NJDEP. Volatile organic compounds present in groundwater at concentrations above NJDEP Groundwater Quality Criteria (NJ GWQC) are being remediated via enhanced bioremediation (Oxygen Release Compound [ORC] injection) through FY08. Long-term monitoring of groundwater and surface water continues on a quarterly basis. Potential migration pathways may exist for contaminants to enter Mill Creek from the Landfill; a BEE is recommended.
41	FTMM-59	Groundwater in vicinity of Building 1122	0.34	No	This parcel was investigated under the Fort Monmouth IRP as IRP Site FTMM-59. A Groundwater Classification Exception Area (CEA) was submitted to the NJDEP. Volatile organic compounds present in groundwater at concentrations above NJ GWQC are being remediated via enhanced bioremediation (Hydrogen Release Compound [HRC] injection). Long-term monitoring of groundwater and surface water continues on a quarterly basis. The identification of volatile organic compounds in the groundwater in excess of criteria and the potential for migration into overlying buildings qualifies vapor intrusion as a recognized environmental concern in this area. The contaminated groundwater will be evaluated through the BEE for Parcel 43 (Building 1122).
42	UST-1122-171	Former UST	0.02	No	A fuel oil tank and potentially contaminated soil were removed in 1994. Metals were detected in groundwater above criteria. Agreement was reached with the NJDEP in 1998 to conduct 4 rounds of sampling and close out the groundwater monitoring due to high background metals. Report was submitted and no response has been received from the NJDEP; monitoring is ongoing. The metals in groundwater will be evaluated through the BEE for Parcel 43 (Building 1122).
43	1122	Do-it-Yourself Auto Repair and Craft Shop	1.54	Yes	This parcel encompasses Building 1122 (Do-it-yourself auto repairs) and Building 1124 (Car wash). Building 1122 is a hazardous waste generator and numerous areas of patched asphalt and old concrete pads have been noted. An oil/water separator (w/vessel) and floor drains confirmed to be connected to sanitary system per 1993 floor plans. Surface drainage from this area may have had the potential to allow contaminants to migrate into Mill Creek and B/Ns and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
44	Former Skeet Range FTMM-03, 04, 05, 06, and 08	Former Skeet Range and Former Landfills	25.30	Yes	This parcel includes one MMRP site (1940-1955 Skeet Range) and IRP sites FTMM-03, 04, 05, 06, and 08. The IRP sites are former landfill areas (M-3, M-4, M-5, M-8) and a post burning area (M-6). Extensive soil evaluation has been conducted throughout this parcel, and an NFA determination has been requested from the NJDEP in relation to near surface soils throughout the parcel. No response has been received from the NJDEP. The Department of Public Works incorporated an equivalent to a Declaration of Environmental Restriction into the Fort Monmouth Master Plan for PCB below grade soil contamination at M-8. FTMM-03 - Groundwater - CEA currently being prepared for subsequent submission to the NJDEP. A Monitored Natural Attenuation (MNA) program is approved by the NJDEP and is currently under way. Long-term monitoring of groundwater and surface water continues on a quarterly basis. FTMM-05 - Groundwater - CEA currently being prepared for subsequent submission to the NJDEP. An HRC injection program is approved by the NJDEP and is currently under way through FY08 to address volatile organic compounds in groundwater. Long-term monitoring of groundwater and surface water continues on a quarterly basis throughout the parcel. BEE recommended for Former Landfills since a potential migration pathway may exist for contaminants to enter either Lafetra Creek, Mill Creek or Parkers Creek from the Landfills.
45	UST-697-194 UST-697-195 UST-697-195	Former USTs	0.04	No	Three 1,000-gallon waste oil tanks were removed on June 1, 1990. No documentation existed on condition of tanks or adjacent soils during removal. A site assessment was initiated at the suspected locations of the former USTs in November 1992. Petroleum-related compounds were detected in soil samples below State criteria. Initial groundwater samples exceeded NJ GWQC for chlorinated volatile organic compounds and pesticides. Closure Report submitted to NJDEP on 02/26/96 recommending additional groundwater sampling. Quarterly groundwater samples were collected from August 1997 to December 2001. Groundwater concentrations in the 2001 samples were below the NJ GWQC. Revised Closure Report submitted to NJDEP on 5/15/02. NJDEP closure approval letter received 01/10/2003. No contamination remains at the site and no migration to environmentally sensitive areas has been detected; therefore, no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 45 and Parkers Creek.
46	FTMM-07	Former Incinerator	0.03	No	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-07 (M-7 Burning Area). The M-7 burning area was a former incinerator located within Building 697. The incinerator was used until 1990 for burning classified documents. The Incinerator was dismantled in 1993; NFA determination approved by NJDEP in 1994. There is no contamination present at Parcel 46 or evidence of migration to environmentally sensitive areas; therefore, no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 46 and Parkers Creek.
47	FTMM-19	Former Pistol Range	2.23	No	This parcel includes a former pistol range and the former sanitary treatment plant (FTMM-19). The firing range was used from 1935 to 1940 for small arms. The sewage treatment plant closed in 1975. No compounds of concern detected above NJDEP criteria for soil or sediment. NFA approved by NJDEP in 1996. Since no contaminants were found at Parcel 47, no BEE is required.
48	FTMM-18	Former Training Area	4.85	Yes	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-18 - Near Surface Soils (Cover Soil). A geophysical survey and subsequent trenching identified buried waste materials at the site. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Parkers Creek.
49	283, 288, 291, 292, 293, 295	Former Squier Laboratory Complex, Museum, Battery Test Facility	9.09	Yes	Building 283 is currently administrative space. Previous use included the Squier laboratory - primary R&D laboratory until 1954 (when the laboratory operations were transferred to Building 2700). Former repair/experimental work within this parcel included photographic equipment, a battery test facility (which was destroyed by fire in the 1980s and subsequently rebuilt), climatic testing lab, plastics research and development. Numerous former buildings existed in this parcel that were associated with Squier laboratory operations in the 1950s. B/Ns and PCBs were identified as constituents of concern in soil and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. Migration of contaminants from UST at Building 283 or discharges from former septic and sump systems associated with Squier Complex to Parkers Creek may have occurred, so a BEE is recommended.
50	FTMM-54 Building 296) FTMM-55 (Building 290) FTMM-61 (Building 283)	Former fuel distribution facility, Former USTs	2.18	No	Three sites within this parcel are included in the Fort Monmouth IRP. Site FTMM-54 is a former abandoned fuel distribution facility that was removed during a renovation project at Building 296. Benzene and lead are present in groundwater above criteria and are being addressed through the implementation of MNA, which includes quarterly groundwater monitoring. Site FTMM-55 is the site of a former UST system which was located at Building 290. Petroleum-contaminated soil has been removed; lead and arsenic detections in groundwater are being addressed through MNA (including quarterly groundwater monitoring), while a request for an NFA determination is under review by the NJDEP. FTMM-61 is a former 3,000-gallon UST site at which petroleum-contaminated soil was removed and petroleum-related contaminants are present in groundwater. In situ bioremediation (ORC injection) is being conducted through FY08 to address groundwater, long-term monitoring of groundwater is ongoing. In total within this parcel, 15 USTs that were removed had evidence of petroleum release during closure and were properly addressed via removal of contaminated soil, and NFA approval letters were received for all 15 USTs. Contaminated groundwater is addressed through the Fort Monmouth IRP as summarized above. The identification of volatile organic compounds in the groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area. Contaminated soils have been removed and no pathways to environmentally sensitive areas are present; no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 50 and Parkers Creek.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
51	750 Area 787, 788, 789 500 Area 600 Area 1100 former Barracks FTMM-11	Motor Pool Administrative Barracks Former USTs	87.00	No	This parcel includes the 750 motor pool; the area around Buildings 787, 788, and 789; the 600 Area Buildings; 500 Area Buildings; former barracks along Semaphore Ave, and IRP Site FTMM-11. Per communications with facility personnel involved with the 750 Motor Pool construction project in the 1980s, multiple former USTs associated with former barracks in the area were removed during construction. Extensive soil sampling and three UST removals were conducted in the area of Buildings 787, 788, and 789 as part of the U.S. Army's Residential Communities Initiative (RCI) and Enhanced Use Leasing (EUL) programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site. Numerous UST removals and extensive investigation of the 600 Area were conducted under the 600 Area Work Plan that was approved by the NJDEP. A petroleum release was documented to have potentially occurred at 24 of the removed USTs in this parcel. An NFA approval letter was obtained from the NJDEP for all 24 locations where evidence of a petroleum release was identified. Current operations in the 600 Area include dry metal fabrication of vehicle equipment shelters (no solvents used). Small amounts of chemicals are utilized in this area, and lead acid batteries are present in association with emergency generators and UPSs. FTMM-11 (M-11 Elevated Water Tank) was investigated unde the IRP. Site reconnaissance work revealed no visible stains, stressed vegetation or soil at the site and an NFA determination was approved by the NJDEP in 1994. Eleven suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation and are currently being addressed. This parcel consists of maintained grass and pavement associated with residential housing and the 750 motor pool. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
52	FTMM-53, Bldg 699	gasoline service station	1.38	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-53 (Building 699). Site FTMM-53 is an active gasoline service station operated by the Army & Air Force Exchange Service (AAFES) organization. On November 5, 1984, a tank tightness test identified a leak in two USTs. No action was taken until 1989 when a line leak was identified; subsequently, the piping was excavated and replaced. Volatile organic compounds were identified in soil and groundwater at concentrations exceeding NJDEP cleanup criteria. Since that time, a groundwater treatment system (to recover free product and to control plume migration) has been operating in conjunction with a quarterly groundwater monitoring program. The cleanup strategy is to continue remedial action activities and monitoring efforts at the Building 699 site. Shut-down of the treatment system is expected in FY08 and quarterly groundwater monitoring of 13 wells will be performed for 2 years after shut-down. A CEA is currently being prepared for subsequent submission to the NJDEP. The identification of volatile organic compounds in the soil and groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area and tetrachloroethene was identified as a constituent of concern in soil gas during the 2008 Site Investigation. Contaminated soil has been removed and contaminated groundwater is contained in the immediate vicinity of Building 699; no migration to environmentally sensitive areas had been detected; a BEE is not required.
53	700 Area	former housing	11.53	No	Extensive soil sampling and numerous UST removals were conducted as part of the U.S. Army's RCI and EUL programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site and there are no migration pathways to environmentally sensitive areas; therefore, no BEE is recommended.
54	700 Area 800 Area	Lane Hall (Social events and food service) Former Dental Clinic	44.74	No	This parcel includes a sewage lift station (Building 752) at which antifreeze is stored for an emergency generator, former dental clinic and photoprocessing facility currently utilized as a locker room (Building 814); and Lane Hall (Building 702) which is utilized for social events and food service. No release or disposal of hazardous substances or petroleum products has occurred; therefore, no BEE is required.
55	876 FTMM-47	Former Motor Pool Former Medical and Veterinarian Laboratory	11.80	No	Medical and veterinarian laboratories were previously located in former Building 876 and a 1999 Chemical Inventory recorded storage of hazardous substances in this former building. A motor pool formerly existed within this parcel. FTMM-47 (Buildings 1002, 1208, and 1209 former PCB transformer site) was investigated under the IRP and it was determined the staining of concrete and elevated concentrations of PCBs in concrete samples collected below existing transformers at Building 1002 was minor in nature and will be addressed accordingly upon removal or replacement of existing transformers. An NFA determination was approved by the NJDEP. There are no migration pathways to environmentally sensitive areas; a BEE is not required.
56	800 Area RCI Project	Former housing	15.18	No	Extensive soil sampling and numerous UST removals were conducted as part of the U.S. Army's RCI and EUL programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
57		Former Coal Storage and RR Unloading area	8.71	No	Former coal storage and unloading area along former railroad in south central portion of Main Post. B/Ns were identified as constituents of concern in soil and metals were identified as constituents of concern in groundwater during the 2008 Site Investigation and are being further evaluated. No migration pathway to ecological receptors has been identified. There are no migration pathways to environmentally sensitive areas; a BEE is not required. BEE and sampling being conducted related to M-14 also addresses Parcel 57 and Husky Brook.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
58	UST-800-127 UST-801-129	Former #2 fuel oil USTs	1.04	No	Two #2 fuel oil USTs and associated petroleum-contaminated soil were removed. Initial groundwater results showed one semi-volatile organic compound exceeded the NJ GWQC. A monitoring well was installed and no compounds were detected above NJ GWQC in four rounds of sampling. Closure Reports requesting NFA were submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
60	1077, 1078	Residential Housing	4.22	No	Residential housing area southwest of Patterson Army Health Clinic. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Since no contaminants are present and no release has occurred, no BEE is required.
61	810, 1075, 1076	Medical Facility Veterinary Clinic	14.66	Yes	This parcel includes the veterinary clinic (Building 810), Patterson Army Health Clinic (Building 1075), and former Patterson Boiler Plant (former Building 1076). Former X-ray operations were conducted with film development at 1075; over the counter medicines stored on site; medical waste disposed through 1075. Based on extensive previous medical activities within this parcel, potential for historic release of developing chemicals and other waste associated with medical operations exists. B/Ns were identified as constituents of concern in soil and B/Ns and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. Stormwater discharges to a tributary to Oceanport Creek from Building 1075 may have occurred; a BEE is recommended.
62	FTMM-13	Former Pathogenic Waste Incinerator	0.13	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-13 (M-13 Pathogenic Waste Incinerator). The pathogenic waste incinerator formerly located on the west side of former Building 1076 was constructed in 1975. The pathogenic waste incinerator was taken out of service in December 1992. Site reconnaissance work revealed no ash or debris in or around the incinerator unit and the incinerator was dismantled in November 1993. An NFA determination was approved by the NJDEP in 1994. No contaminants have been identified and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
63	UST-810-131	Former #2 fuel oil UST	0.12	No	A former #2 fuel oil UST was removed in 1998. Visible petroleum contamination of soil was observed during the removal of the UST, and potentially contaminated soil was removed. No detections in groundwater or soil samples were above NJDEP criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 8/29/2000. No pathway to environmentally sensitive areas is present, so no BEE is required.
64	FTMM-64 (Building 812)	former gasoline distribution area	3.18	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-64 (Building 812). This parcel is a former gasoline distribution area. Volatile organic compounds and metals are present in groundwater above the NJ GWQC; no contaminants identified in soil above criteria. Treatment of groundwater is underway via enhanced bioremediation (HRC/ORC injection). A CEA was submitted with the NJDEP, awaiting response. Long-term monitoring of groundwater continues on a quarterly basis. The identification of volatile organic compounds in the groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area. There is no migration pathway to environmentally sensitive areas, so no BEE is required.
65	FTMM-66 (Building 886)	former fuel oil storage area	3.15	No	This parcel is addressed under the Fort Monmouth IRP as FTMM-66 (Building 886). Based upon historical records, Site FTMM-66 was identified as a former fuel oil storage area. Aerial photos indicate a former AST was located adjacent to Building 886, located off Murphy Drive on the Main Post. The AST had a storage capacity of 250,000 gallons and stored #2 fuel oil. The AST was removed in the 1970s. Soil contamination was identified at the site during the removal of a 1,000-gallon steel, fuel oil UST located on the west side of Building 886. Soils contained petroleum contamination exceeding NJDEP residential direct contact soil cleanup criteria, and free product was observed in groundwater. 4,000 tons of soil were removed in February 2003. A CEA was filed with the NJDEP and MNA, including groundwater monitoring, was selected as the remedial approach. Long-term groundwater monitoring continues on a quarterly basis. There is no migration pathway to environmentally sensitive areas, so no BEE is required.
66	900 Building Area	Electrical Substation General Storage Police Station	28.92	No	This parcel includes general storage (Buildings 908, 975 and 976), the police station (977), and an electrical substation (Building 978). The electrical substation (Building 978) houses 18 lead acid batteries and non-PCB transformers, all contained within secondary containment. Building 977 houses lead acid batteries associated with an emergency generator. Building 901, currently used in an administrative capacity, formerly housed radar training. Chemicals utilized in this operation included alcohols and freon 113. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Therefore, no BEE is required.
67	UST-949-203	Former #2 fuel oil UST	0.12	No	A former diesel UST and potentially contaminated soil were removed in 1998. One volatile organic compound was detected above the NJ GWQC during the initial round of groundwater sampling. Subsequent quarterly samples collected in 9/2000, 10/2000, 1/2001, and 4/2001 showed no compounds above NJ GWQC. Closure Report requesting NFA submitted to NJDEP on 07/17/2001. NJDEP Closure Approval Letter received on 01/10/2003. No contaminants remain at the site and there is no pathway to environmentally sensitive areas, so no BEE is required.
68	900 Building Area former USTs	Former #2 fuel oil USTs	4.74	No	This parcel includes 12 former USTs. Petroleum discharges were identified at five of the USTs and associated petroleum-contaminated soil was remediated. NFA approval letters were received in 2000 (UST-909-147, UST-914-152, UST-977-204, and UST-979-205) and 2003 (UST-905-145). Lead acid batteries associated with an emergency generator are present at Building 979. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
69	900	Former vehicle repair/motor pool	0.31	Yes	This facility is a former vehicle repair/motor pool facility where solvent-based parts cleaners were previously utilized as part of routine vehicle maintenance activities. This building has been used as general storage for the past 10 years. Metals and B/Ns were identified as constituents of concern in sediment during the 2008 Site Investigation. Stormwater outfalls discharging into Oceanport Creek may have the potential to have led to migration of contaminants to Oceanport Creek, so a BEE is recommended.
70	551	Classroom, former (early 1950s) photoprocessing	1.73	No	Former industrial processes included the use of carbon tetrachloride, benzol, acids, and photographic chemicals in an adjacent Quonset hut in the early 1950s. This facility is currently used for administrative and classroom activities. No constituents of concern were identified in sediment or soil during the 2008 Site Investigation. Though Husky Brook is adjacent to Parcel 70, no contaminants have been found in environmental media, so a BEE is not required.
71	FTMM-12, FTMM-14	Former Landfill	14.65	Yes	This parcel was investigated under the Fort Monmouth IRP as FTMM-12 (M-12 Landfill) and FTMM-14 (M-14 Landfill). A remedial action that addressed soil erosion problems along Husky Brook was completed in June of 2001. An NFA recommendation for near surface soil was submitted to the NJDEP; NJDEP's response in July 2007 included a request for additional sediment samples from Husky Brook and a BEE. Metals and volatile organic compounds have been detected in groundwater slightly above the NJ GWQC. Long-term monitoring of groundwater and surface water continues on a quarterly basis, and a CEA request has been submitted to the NJDEP for groundwater. An NFA recommendation was submitted to the NJDEP. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Husky Brook.
72	200 Area 300 Area	Residential Housing Parade Grounds Administrative	101.38	No	This parcel is located in the north-central portion of Main Post and includes residential housing along Gosselin Ave., Sherrill Ave., Allen Ave., and Signal Ave.; the parade grounds; administrative offices in Building 286 (Russell Hall), and electronic research facilities in the northeastern portion of the parcel. Hospital facilities were formerly located in Building 209 prior to the construction of Patterson Army Health Clinic. Building 209 is now used for administrative purposes. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Forty-five (45) former fuel oil USTs have been removed and no contamination was identified during closure. Approval of an NFA recommendation was received from the NJDEP for six USTs, the remaining 39 removed USTs were residential USTs for which no regulatory concurrence is required. Since no contamination is present related to Parcel 72, no BEE is required.
73	UST-286-60	Former #2 fuel oil UST	0.12	No	A former #2 fuel oil UST and 3 cubic yards of petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 1999, and an NFA approval letter was received from the NJDEP on 2/24/2000. Additionally, there are no migration pathways to environmentally sensitive areas, so no BEE is required.
74	205, 206, 207, 208, 257, 282, 287	Residential Housing, Fire House, and former fuel oil USTs	10.74	No	This parcel includes the fire house and existing housing southeast of Hidreth Ave. Eight former residential fuel oil USTs and associated petroleum-contaminated soil have been removed. No regulatory concurrence is required for residential USTs. Despite no requirement for regulatory concurrence, an NFA approval letter was obtained for 7 of the 8 USTs. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
75	FTMM-20	Pre-1941 Sewage Treatment Plant	0.28	Yes	This parcel is addressed under the Fort Monmouth IRP as FTMM-20 (Pre-1941 Sewage Treatment Plant). During the RI, metals were detected in sediment samples above criteria. Though these metals may be comparable to background levels; a BEE is recommended.
76	200 Area 300 Area	Residential Housing Former Barracks	12.06	No	This parcel includes the existing residential housing buildings north of Housing Ave. and the former 300 Area Barracks. Numerous USTs are illustrated on historic maps associated with the 300 Area Barracks that are not documented to have been removed. Thirteen (13) residential USTs and associated petroleum-contaminated soil (for which no NJDEP closure approval is required) were removed in association with existing residential housing in this parcel as well. Seven suspected USTS were identified during a geophysical survey conducted as part of the 2008 Site Investigation; however, no constituents of concern were identified in soil or groundwater. The 7 suspected USTs are currently being investigated. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
77	UST-210-8	Former #2 fuel oil UST	0.37	No	A former #2 fuel oil UST and 10 cubic yards of petroleum-contaminated soil were removed in 1994, and no contaminants were detected in groundwater above NJDEP criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1996. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
78	FTMM-15	Elevated Water Tank	0.30	Yes	This parcel is addressed under the Fort Monmouth IRP as Site FTMM-15 (M-15 Water Tank). Two pesticides and three metals were identified above NJDEP direct contact soil cleanup criteria. A corrective action was implemented in 1999 involving the removal of the contaminated soil from the site. A Remedial Action report will be submitted to NJDEP with an NFA recommendation from the Army. RI sampling had confirmed that horizontal migration towards Parkers Creek had occurred prior to Remedial Action, so BEE is recommended.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
79	142 494 Bldg 75 Former Tank Farm	Box/Crate Shop Marina Former Bulk Petroleum Storage Tanks	43.64	No	This parcel includes the Box/Crate shop (all hazmat packaged and shipped through this building, but not stored at this location), the water supply treatment building (Building 494), former Building 75 Tank Area adjacent to the railroad, the marina, and the former 400 area housing. There were 38 USTs removed from this parcel. Eight of the tanks had leaked and soil removals were conducted. Some of the USTs were residential and did not require closure documentation. Twenty-five (25) approval letters for the UST removals were received from the NJDEP. Four suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation; however, no constituents of concern were identified in soil or groundwater. The four suspected USTs are currently being investigated. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
80	Former Buildings 105 and 106		0.93	No	This parcel includes former Buildings 105 and 106 - former photoprocessing facilities located northeast of Oceanport Ave., directly southeast of the current credit union (Building 495). These building served as photoprocessing facilities from the 1940s until they were demolished in the 1980s. No constituents of concern wer idetified during the 2008 Site Investigation and the parcel consists of maintained lawn, pavement, and buildigns. No migration pathway to sensitive environmental resource is present; a BEE is not required.
81	FTMM-16 (Bldg 498)	Former Pesticide Storage Area	0.12	Yes	A former pesticide storage and mixing area was located at the M-16 site on Main Post. The facility (Building 498) is a brick structure and was constructed in 1939. Pesticide management practices were conducted at the site until the late 1950s. Remedial actions were completed in 1999 under the Fort Monmouth IRP to remove pesticide-contaminated soil. A Remedial Action report will be submitted to NJDEP with an NFA recommendation from the Army. Sampling prior to Remedial Action confirmed that migration horizontally in the direction of Oceanport Creek had occurred, so a BEE is recommended.
82	400 Area RCI	Remediated soil contamination in 400 Area	0.13	No	PCB-contaminated soil was excavated to below NJDEP cleanup criteria and disposed off site in 2005 as part of the U.S. Army's RCI and EUL programs. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
83	109	Former photoprocessing Current and former maintenance shops (carpentry, plumbing, heating, HVAC, electrical) Former coal storage	35.34	No	This parcel is located in the northeastern portion of the Main Post and is associated with numerous current and former industrial processes and vehicle operations including former vehicle wash platforms, former photoprocessing and printing plants, current and former vehicle maintenance areas, former heating plants, former refrigerant repair, former coal storage, and current and former carpentry, plumbing, and electrical shops. Three modern USTs are currently in use at Building 273 (Garrison Motor Pool), three waste oil ASTs are present at Building 484, one waste oil AST is present at Building 481, and one waste oil AST is present at Building 121. All existing USTs and ASTs have secondary containment in place. Numerous former USTs have been removed throughout this parcel, and petroleum-contaminated soil was addressed when encountered at each UST location. Lead and B/Ns were identified as constituents of concern in surface soil during the 2008 Site Investigation. The entire parcel consists of maintained lawn, pavement, and buildings. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
84	FTMM-56 (Former Building 80)	Former #2 fuel oil UST	0.29	No	This parcel is addressed under the Fort Monmouth IRPas Site FTMM-56 (Building 80). A former #2 fuel oil UST and 56 cubic yards of petroleum-contaminated soil were removed in 1993. Although a discharge was identified during the UST closure, the discharge is believed to have come from activities prior to and not related to the UST removal (pre-1984). Gasoline-related constituents and one pesticide were detected at concentrations above the NJ GWQC. MNA (which includes quarterly groundwater monitoring) has been implemented as the remedial approach for this parcel pending approval of an NFA recommendation by the NJDEP. An RI report requesting an NFA determination was submitted to the NJDEP in May 2005. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
85	UST-116-9	Former #2 fuel oil UST	0.13	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
86	UST-117-72	#2 fuel oil UST	0.13	No	A former #2 fuel oil UST was removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998. There are no migration pathways to environmentally sensitive areas; a BEE is not required.
87	UST-64-4 (#2 fuel oil) UST-65-5 (#2 fuel oil) UST-161-14 (#2 fuel oil) UST-161-68 (waste oil) UST-173-19 (#2 fuel oil)	5 former USTs	0.45	No	This parcel includes 5 former USTs and associated petroleum-contaminated soil that were removed. Closure Reports requesting NFA have been submitted for all 5 USTs. NFA approval letters were received from NJDEP for UST-64-4 on 10/23/00, UST-65-5 on 8/29/2000, and UST-173-19 on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
88	FTMM-17 (Former Building 65)	Former Pesticide Storage Area	0.27	No	This parcel was included in the Fort Monmouth IRP under Site FTMM-17 (M-17 Former Pesticide Storage Area, Bldg 65). Building 65 has been demolished; chlordane was detected in the soil 6-12 inches below grade consistent with termite control practices in the 1980s; no chlordane was detected in groundwater. An NFA determination was approved by the NJDEP in 1994. There are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
89	UST-64-3 'UST-485-57	2 former #2 fuel oil USTs	0.14	No	Two former #2 fuel oil tanks (UST-64-3, UST-485-57) and petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
90	FTMM-57 (Former Bldg 108 USTs)	5 former #2 fuel oil USTs	0.38	No	Five former USTs associated with former Building 108 are addressed under the Fort Monmouth IRP as Site FTMM-57. The 5 USTs were removed in 1993; volatile organic compounds and metals have been detected in groundwater above NJ GWQC. A CEA for site groundwater, which restricts the use of groundwater within a defined area until such time that contaminants of concern achieve compliance with the NJ GWQC, was filed with the NJDEP. An RI report requesting an NFA determination has been submitted to the NJDEP. Currently, as part of a monitoring program, four groundwater monitoring wells are sampled on a quarterly basis. Contaminated groundwater is restricted to the area in the vicinit of the former USTs and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
91	UST-280-25	Former #2 Fuel oil UST	0.14	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1997. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
92	UST-484-56	Former #2 Fuel oil UST	0.04	No	A former #2 fuel oil UST and 13 cubic yards of petroleum-contaminated soil were removed in 1995. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
93	UST-482-54	Former #2 Fuel oil UST	0.04	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria and groundwater results were below the NJ GWQC. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
94	UST-164-15 UST-277-24	Former #2 Fuel oil USTs	0.17	No	Two former #2 fuel oil tanks (UST-164-15, UST-277-24) and petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
95	PCB Transformer leak near Bldgs 454 and 456	Pole Mounted PCB Transformer leak	0.44	No	This parcel is located northeast of Oceanport Ave. in the vicinity of Buildings 454 and 456. Three pole-mounted 50 KVA transformers (PCB-contaminated class) were knocked to the ground as a result of a storm in 1992 and the contents of two of the transformers leaked onto the ground. The transformers were properly disposed of along with 50 cubic yards of PCB-contaminated soil. Final post-excavation samples were non-detect for PCBs and showed levels of total petroleum hydrocarbons (TPH) below the NJDEP standard. An additional 20 surface soil samples were collected from the perimeter of the entire excavation. These samples were analyzed for TPH. None of these samples contained TPH in excess of the NJDEP soil standard. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_021_Fig2-1_High_Tide_Salinity_BEE_rpt.mxd (4/20/2011)

LEGEND

- **Surface Water Sampling Point** — High Tide Salinity Measurements (ppt)
- **BEE Sampling Location** — High Tide Salinity Measurement (ppt)
- Water Feature
- Road Centerline
- IRP Site
- ECP Parcel
- Building
- Water Body
- Installation Boundary
- Municipal Boundary

N

0 500 1,000 2,000

Scale: Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

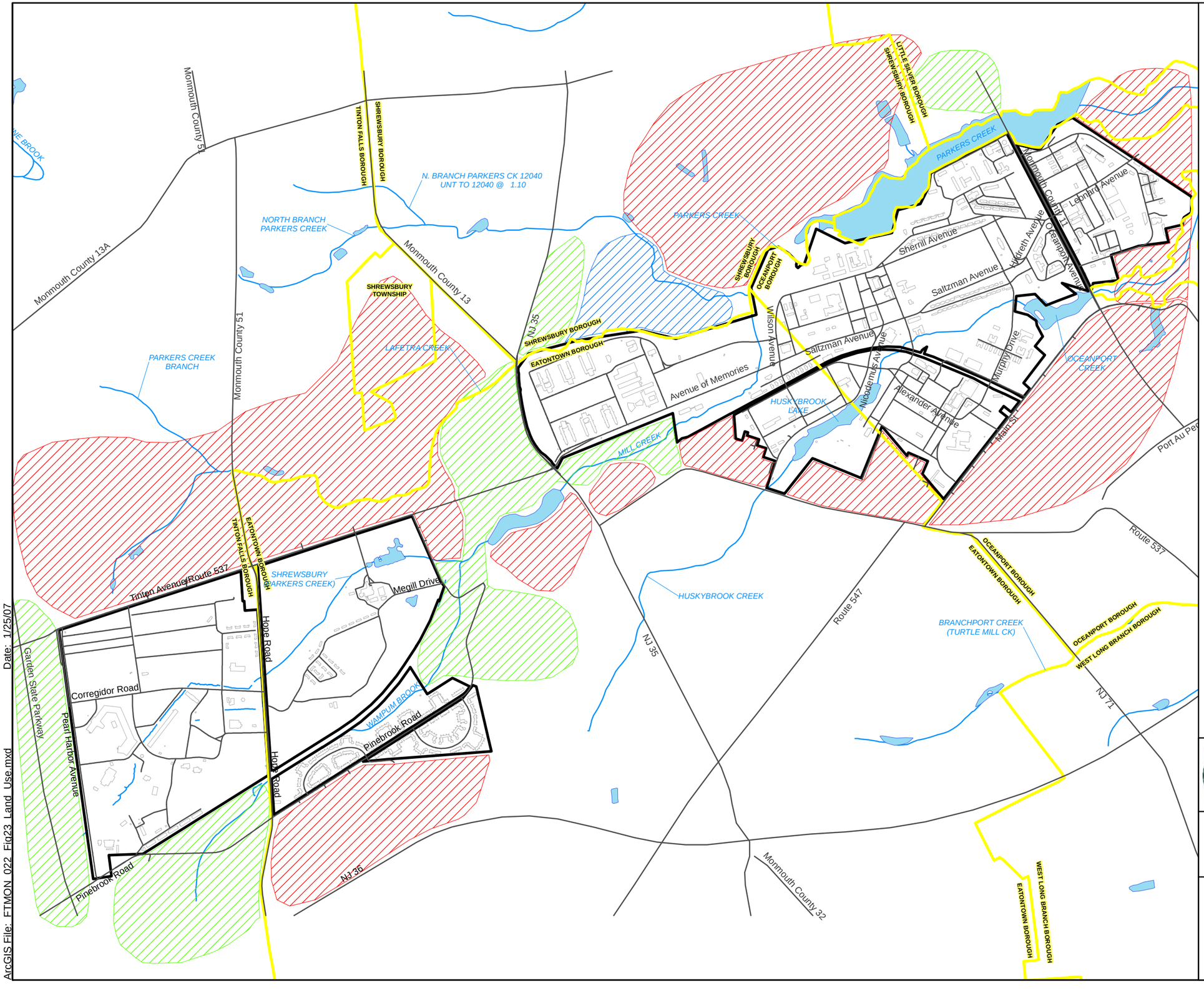
Shaw® Shaw Environmental, Inc.

FIGURE 2-1

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

HIGH TIDE SALINITY RESULTS

MAIN POST
FORT MONMOUTH
NEW JERSEY



Date: 1/25/07

ArcGIS File: FTMON_022_Fig23_Land_Use.mxd

LEGEND

- Road Centerline
- Water Feature
- Building
- Water Body
- Installation Boundary
- Municipal Boundary

Land Use

- Industrial/Commercial
- Residential/Recreational
- Undeveloped

N

Scale:

0 750 1,500 3,000 Feet

Note: Schematic representation of prevalent surrounding land use only. Boundaries of surrounding land use designations are not exact.

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-2

ADJACENT LAND USE MAP

FORT MONMOUTH
NEW JERSEY

3.0 DATA EVALUATION

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was a review of the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact. The following sections describe these steps in detail.

3.1 REVIEW OF AVAILABLE SITE DATA

Site data addressed in this BEE include data previously collected for RIs (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE. The data evaluated in this BEE appear in **Appendix A** (RI data), **Appendix B** (ECP SI data), **Appendix C** (groundwater monitoring data), and **Appendix D** (BEE investigation data).

Exposure of ecological receptors to contaminants in soil predominantly occurs within the surface soils. Ecological receptors are not frequently exposed to subsurface soils; therefore, subsurface soils collected at 2 feet bgs and below are not evaluated in this BEE. Near-surface soil data are available for most IRP sites in RI reports [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Former Training Area/Landfill (FTMM-18), and Landfill CW-3A (FTMM-25)] and most ECP Parcels in the SI report (Parcel 15, Parcel 27, Parcel 5, Parcel 39, Parcel 49, Parcel 61, Parcel 69). Contaminated soils have been excavated and removed and the areas backfilled and graded at Building 283, Building 1122, the Water Tank FTMM-15, the pre-1941 STP (FTMM-20), and Building 498 (FTMM-16); soils at these sites are not addressed in the BEE. Only subsurface soil sample data was previously available for the Former Pesticide Storage Area, CW-6 (FTMM-28); soils samples were collected as part of the BEE investigation from this site to support the BEE.

Though ecological receptors are not exposed directly to contaminants in groundwater, pathways may exist by which groundwater may flow to potential exposure points (e.g., discharge of groundwater into surface water bodies). Therefore, the most recent 2-year period of readily available groundwater data from routine environmental monitoring are evaluated in this BEE to best represent current conditions; this constitutes the 2008 and 2009 calendar years. Though groundwater may discharge to surface water bodies, groundwater contaminant concentrations are not meant to represent potential surface water concentrations. It should be noted also that, though the CEAs are meant to minimize the potential human health exposure to contaminants in groundwater, they do not inhibit potential ecological exposures. Groundwater data are available from the routine environmental monitoring for applicable IRP sites [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), and Building 283 (FTMM-61)] and from the SI Report (Shaw, 2008) for applicable ECP sites (Parcel 15, Parcel 28, Parcel 49, and Parcel 69). No groundwater samples were collected as part of the BEE.

Ecological receptors may be exposed directly to contaminants in surface water and sediment of the various creeks and ponds that drain the sites. As with soils, ecological receptors are not frequently exposed to contaminants in subsurface sediments. The top 6.0 inches of sediment is usually considered to be the biotic zone, and only data from the top 6 inches of sediments is evaluated in this BEE. Previous sediment data for most IRP sites addressed only PCBs. Sediment samples were collected as part of the BEE from applicable IRP sites for an expanded analytical program [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Water Tank/FTMM-15, Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Pre-1941 STP/FTMM-20, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), and Building 283 (FTMM-61)]. The data from the samples collected as part of this BEE, and not the previous IRP sediment samples, are evaluated in this BEE. Sediment data are also

available from the SI Report (Shaw, 2008) for applicable ECP sites (Parcel 15, Parcel 27, Parcel 28, Parcel 39, Parcel 43, Parcel 49, Parcel 61, and Parcel 69) and are evaluated in this BEE.

As with sediment, surface water analysis in previous samples, particularly for IRP sites, has been for a limited suite of parameters. Surface water samples evaluated in this BEE were collected as part of the BEE for an expanded analytical program; surface water samples were collected for applicable IRP and ECP sites [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Water Tank/FTMM-15, Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Pre-1941 STP/FTMM-20, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), Building 283 (FTMM-61), Parcel 15, Parcel 27, Parcel 28, Parcel 39, Parcel 43, Parcel 49, Parcel 61, and Parcel 69).

3.2 BEE SITE INVESTIGATION METHODOLOGIES

This section describes the methods utilized in conducting the BEE field activities. This work included the following:

- Surface soil sampling.
- Sediment sampling.
- Surface water sampling.

This section also describes the collection procedures for field quality control (QC) samples, the decontamination procedures for sampling equipment, and the management procedures for investigation-derived wastes (IDW). **Table 3-1** and **Table 3-2** present a list of all samples collected and parameters analyzed as part of the BEE field activities. The sample locations are presented on **Figure 3-1** for the MP and on **Figure 3-2** for the CWA. The 2010 sampling and analysis activities were conducted to meet NJDEP requirements (N.J.A.C. 7:26E-3.11; NJDEP, 2009b) for a BEE. Though a BEE is often performed as part of an SI, this work is not intended to satisfy the general requirements of an SI or RI as presented in the TRSR (N.J.A.C. 7:26E; NJDEP, 2009b) nor is it intended to provide data necessary for a sediment quality evaluation (NJDEP, 1998). Previous reports and comments were reviewed to identify previous data gaps and data needs, and surface water, sediment, and surface soil samples were collected to fill data gaps and gather enough information to satisfy the requirements of a BEE.

3.2.1 SURFACE SOIL SAMPLING

Surface soil samples collected during the BEE were collected from the top 6 inches of the soil. Soil samples were collected from the surface through use of a decontaminated hand trowel. The surficial vegetative material was first removed from the sampling location prior to sample collection. A decontaminated stainless steel trowel was than manually inserted in the soil to extract the sample and transfer it into a decontaminated stainless steel bowl for homogenization.

Once collected all surface soil samples were field screened with a properly calibrated photoionization detector (PID) instrument. To field screen the soil sample, a decontaminated stainless-steel trowel was used to make a cross-sectional slice of the soil sample in order to expose the porous surface.

During the sampling, samples collected for VOCs analysis were collected in accordance with TRSR, N.J.A.C. 7:26E-2.1(a)4 (NJDEP, 2009b) and NJDEP sampling procedures (NJDEP, 2005) using the En Core® method. For this method, laboratory prepared sample bottles are used but do not contain preservatives, and the following procedures were followed:

- Surface soil was trimmed away from the soil boring and the sample was collected immediately from the exposed surface using the coring device.
- The En Core® sampler was loaded according to manufacturer's instructions.
- The lid was secured immediately and the container was placed within the designated resealable bag.
- No additional tape/adhesive labels were affixed to the sample container but the resealable bags were properly labeled.

- Samples were placed upright into an iced cooler.
- An additional aliquot was collected from each sample location to determine percent moisture content.

The remaining soil was used for other analyses, which included SVOCs, pesticides, PCBs, metals, grain size, and organic carbon content. The procedure for homogenizing and sampling for these analyses was as follows:

- Any rocks or large organic matter was removed from the sample.
- The sample was thoroughly mixed within the stainless steel bowl by turning the entire sample over at least three times using a stainless steel trowel or scoop.
- The entire sample was then homogenized using the coning and quartering procedure.
- The required soil volume was then placed into the appropriate sample bottles.
- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

The latitude and longitude of each sample location was recorded with a hand-held global positioning system (GPS) unit. Disposable latex gloves were used during all sampling activities and were changed between each sample location. The chain-of-custody (COC) was completed after sample collection and sealed in a plastic bag and taped to the lid inside the sample cooler for transport to the analytical laboratory.

3.2.2 SURFACE WATER SAMPLING

The collection of surface water samples proceeded from downstream to upstream locations so that disturbances related to prior sampling would not affect sample quality. In tidal waters where downstream and upstream is dependent on the predominant direction of flow of the surface water at the time of collection, surface water samples were collected during outgoing tides for consistency between samples. At each location, the surface water sample was collected prior to sediment sample collection to reduce sediment load in the samples.

Surface water samples were collected by simple immersion of laboratory cleaned sample bottles in accordance with the Field Sampling Procedures Manual (FSPM) (NJDEP, 2005). This was accomplished by gently dipping an unpreserved, pre-cleaned bottle in the water with the mouth of the bottle facing the upgradient direction to eliminate the collection of resuspended sediments from lowering the bottle. Where sample bottles could not be dipped without disturbing underlying sediment, an extendable pole was used to dip the sample bottles. The sample water was then transferred to the appropriate (preserved, if applicable) sample containers.

The following steps were taken during the sample water collection:

- For samples taken from a boat, the boat was anchored or secured in an appropriate location to enable the boat to drift over the desired sample location.
- The water depth was measured and the state of the tide was estimated.
- The probe of the calibrated multi-parameter water quality meter was lowered to mid-depth of the water column and the field parameters were recorded after stabilization of the readings.
- A clean, sample-dedicated bottle was then dipped below the surface.
- All appropriate sample containers were carefully filled by pouring the surface water from the sampling bottle into the appropriate sample containers.
- For dissolved metals, a peristaltic pump equipped with dedicated tubing and an in-line 0.45 micrometer filter was used to transfer surface water samples directly into appropriate preserved sample containers.

- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

The latitude and longitude of each sample location was recorded with a hand-held GPS unit. Disposable latex gloves were used during all sampling activities and were changed between each sample location. The COC was completed after sample collection and sealed in a plastic bag and taped to the lid inside the sample cooler for transport to the analytical laboratory.

3.2.3 SEDIMENT SAMPLING

The collection of sediment samples proceeded from downstream to upstream locations so that disturbances related to prior sampling would not affect sample quality. The sampling of tidal waters was completed from the predominant downgradient flow of the surface water at the time of collection. Sediment samples were collected from previous sample locations, depositional zones, or potential migration pathways. Areas where stream bank stabilization efforts disturbed sediments were avoided during sediment sampling; in these areas, sediment sampling was conducted when tides were low enough to visually identify undisturbed sediments. At each location where applicable, sediment samples were collected after surface water samples.

Sediment sampling was conducted, whenever possible, from the shoreline. Sediment samples were collected from the 0- to 6-inch interval. Sediment samples from wetland areas without overlying water (e.g., sediments in the wetlands near the Former Pesticide Storage Area/CW-6) were collected with a hand trowel. Submerged sediments were collected with a hand auger. All sampling locations were GPS located.

The following steps were taken during sample collection:

- For samples taken from a boat, the boat was anchored or secured in an appropriate location to enable the boat to drift over the desired sample location.
- The water depth was measured and the state of the tide was estimated.
- The probe of the calibrated multi-parameter water quality meter was lowered to mid-depth of the water column and the field parameters were recorded after stabilization of the readings.
- The sediment sample was collected and the top 6 inches of material was transferred to a stainless steel bowl.
- Once collected, the sediment samples were field screened with a properly calibrated PID.
- The sample for VOC analysis was immediately collected from the stainless steel bowl using En Core methods previously described for soil samples.
- The remaining sample was then homogenized using the coning and quartering method described for soil samples.
- All appropriate sample containers were carefully filled using a dedicated soil sampling scoop.
- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

3.2.4 DECONTAMINATION PROCEDURES

All equipment that came into contact with potentially contaminated material was decontaminated prior to use at each sampling location. Given that surface water samples were collected through immersion of dedicated sampling bottles and filtered samples used dedicated tubing and in-line filters, decontamination was not applicable to surface water sampling. Decontamination procedures for field equipment were in accordance with the NJDEP FSPM (NJDEP, 2005) three-step decontamination procedure for non-aqueous samples, which is detailed below. All equipment was thoroughly decontaminated before use and between sampling locations.

All decontaminated equipment was stored on plastic sheeting or wrapped in aluminum foil. Stainless steel hand augers, bowls, trowels, and other sampling equipment were decontaminated as follows:

- Equipment was cleaned with a brush in a tap water and Alconox wash.
- Equipment was rinsed with tap water.
- Equipment was rinsed with distilled and deionized water.

3.2.5 INVESTIGATION-DERIVED WASTE

Sampling activities performed as part of the BEE generated a variety of IDW including used person protective equipment (PPE), decontamination fluids, and disposable sampling equipment. The procedures and practices of handling IDW generated during the BEE site activities were consistent with the NJDEP FSPM (NJDEP, 2005) and the guide "Management of Investigation-Derived Waste During Site Inspections" (USEPA, 1991).

Decontamination of sampling equipment generated IDW consisting of decontamination waters. Decontamination water was re-applied to the ground surface since all of the following criteria were met:

- The water was not permitted to migrate off site.
- There was no potential for contaminating a previously uncontaminated aquifer.
- The discharge would not cause contamination to the ground surface soil.
- There was no immediate threat to human health or the environment.
- There was no indication from field instrumentation or visual observations to indicate that the material is a potential RCRA hazardous waste.

IDW was also generated from use of PPE (e.g., gloves) and disposable equipment (filters, tubing, soil scoops) during the BEE. This material was stored in plastic garbage bags and taken off site for proper disposal.

3.2.6 QUALITY CONTROL

To ensure the quality of the data collected during the 2010 BEE sampling event, all field procedures were conducted in accordance with methodologies outlined in **Section 3.1** and the BEE WP (Shaw, 2010). The field sampling methodologies utilized were developed based on the NJDEP FSPM, N.J.A.C. 7:14 – Technical Requirements for Site Remediation, and N.J.A.C 7:14B – USTs. All laboratory analyses were conducted by NJDEP certified and National Environmental Laboratory Accreditation Program approved laboratories. Included within **Appendix E** is a table that provides the minimum of ESC for each contaminant included in the analytical program and the subcontract laboratory's expected Method Detection Limits (MDLs).

3.2.6.1 COMPLETENESS

Completeness is a measure of the amount of information that must be collected during a field investigation to allow for a successful achievement of the sampling activities. Sampling completeness for this BEE was assessed through the evaluation of the total number of samples proposed in the WP versus the actual number of samples collected and analyzed. A total of 151 samples were proposed for collection in the WP and 152 samples were collected. Thus, the resulting sampling completeness for this project was 100.6 percent for all matrices. One proposed surface water sample (CW3-SW8) was not collected because there was no water existing in Shrewsbury Creek at the proposed location. The furthest upgradient location on Shrewsbury Creek at which surface water existed and a sample was able to be collected was location CW3-SW8. One surface water and one sediment sample (CWA-SD1 and CWA-SW1) were added to the sampling and analysis program during field operations. The samples added were collected within Shrewsbury Creek at the furthest point downstream on the CWA property.

3.2.6.2 REPRESENTATIVENESS AND DOCUMENTATION QUALITY REVIEW

Representativeness is a measure of the degree to which the results accurately reflect the media that were sampled. Procedures based on NJDEP protocol were utilized to ensure that samples collected were representative of their respective media. These procedures contained sampling protocols (e.g., sediment sampling) and field handling protocols (e.g., storage, shipping) which were designed to protect the representativeness of the collected samples. Field activities were audited and documentation of sample collection, shipment, and receipt activities were reviewed for accuracy and completeness and to ensure the implementation of standard operating procedures (SOPs).

Review of accuracy, precision, and completeness of sample documentation and observations from field audits suggest that the designed sampling program for the BEE was followed and resulted in the collection of representative samples.

3.2.6.3 REVIEW OF QC SAMPLES

Standard QC checks were implemented during all field and laboratory activities conducted during the 2010 BEE. These included field checks such as the collection of field/rinse blanks, trip blanks, and duplicate samples for laboratory analysis, as well as laboratory QC checks such as method blanks. Laboratory reports included in **Appendix F** contain a full description of the final results, methods of analysis, levels of detection, and method blank data.

Analytical data were evaluated against method blank, trip blank, and field blank data in order to evaluate the contribution of constituents detected in QC samples to the analytical results. Results of the analyses of field/rinse blanks were used to assess the effectiveness of equipment decontamination procedures in preventing cross-contamination between samples and to determine if compounds detected in the collected samples were attributable to the sampling equipment. One field/rinse blank was collected on each day of sampling and analyzed for all parameters.

Trip blanks were used to determine if any on-site atmospheric contaminants were seeping into the sample bottles, or if cross-contamination of samples was occurring during shipment or storage of the sample containers. Trip blanks are applicable to aqueous VOC samples. The trip blanks accompanied the samples into the field prior to sampling, remained with the collected samples during the sampling sequence, accompanied all aqueous VOC sample bottles shipped to the laboratory, and remained with the samples at the off-site laboratory prior to analysis. Trip blanks were analyzed from each day of sampling and analyzed for VOCs, except for on the second day of sampling when a trip blank was not supplied by the laboratory with the sample bottles. Due to the low frequency and concentrations of VOCs detected in aqueous samples, this did not impact the analyses; in most instances, the trip blanks were demonstrated analyte-free. Results of method blank analyses were used to determine if constituents detected in samples were introduced during sample extraction and analysis.

A summary of constituents detected in blank samples (field/rinse blanks and trip blanks) is included in **Appendix F**. Most of the analytes detected in blank samples are common laboratory contaminants and were likely introduced into the samples during laboratory extraction/analysis. The low concentrations of constituents identified in field/rinsate blanks indicate that no significant cross-contamination occurred between samples.

Field duplicates were collected to identify the cumulative precision of the sampling and analytical process and sent to the laboratory blind. The Relative Percent Difference (RPD) was calculated only for those analytes which were detected in both samples of the duplicate pair. Analytes that were non-detect in either or both of the samples of the duplicate pair were excluded from the duplicate assessment. Precision control criterion was established at 50% RPD for the aqueous and solid samples. All analytes exceeding criteria are treated as estimated (“J” qualified) for the field duplicate pair based upon high RPD(s). Most of the high RPDs were observed for analytes that were detected at very low concentrations that were laboratory qualified as estimated due to low concentrations at or below the MDL. The poor precision is probably due to sample non-homogeneity and/or sample matrix effects with the given analysis. A summary of RPDs for duplicate sample pairs collected during the 2010 BEE is included in **Appendix F**.

Full data validation was not required to achieve the BEE objectives.

3.2.6.4 WORK PLAN VARIANCES

Overall, the sampling and analyses performed were sufficient to meet project objectives and comply with the WP. Variances that occurred during implementation of the field and laboratory efforts were minimal. One proposed surface water sample (CW3-SW8) was not collected because there was no water existing in the creek at the proposed location. The furthest upgradient location at which surface water existed was sampled (location CW3-SW8) as prescribed in the WP. One surface water and one sediment sample (CWA-SD1 and CWA-SW1) were added to the sampling and analysis program during field operations. The two samples were collected within Wampum Brook at the furthest point downstream on the CWA property.

3.2.6.5 REVIEW OF TENTATIVELY IDENTIFIED COMPOUNDS

The VOC+15 and SVOC+15 lists of organic compounds designated for analysis included up to 30 non-targeted organic compounds as detected by GC/MS analysis. A summary of total TICs in samples collected during the 2010 BEE sampling event is provided in **Appendix F**. All detected non-targeted compounds are reported as TICs in the laboratory deliverables, also included in **Appendix F**.

A qualitative review was conducted and TICs were identified at low concentrations in one or more soil, sediment, and surface water samples. TICs are commonly observed in soil, surface water, and sediment samples and are likely attributable to naturally-occurring organic constituents due to elevated carbon content. The majority of observed TICs are commonly detected constituents that were present at low concentrations.

3.2.6.6 METHOD DETECTION LIMITS

In order to accurately identify COPECs in environmental media, it is useful to be able to detect potential contaminants that are present at concentrations greater than the ESC. Thus, one data quality objective (DQO) of the analytical program is to have MDLs at concentrations at or less than the ESC wherever possible. Unfortunately, for some parameters, the conservative benchmarks used as ESC are less than normal laboratory MDLs. The DQO for surface water samples was set at the lower of the freshwater ESC and the saltwater ESC, the DQO for sediment samples was set at the lower of the freshwater sediment ESC and the saltwater sediment ESC, and the DQO for soil was set at the soil ESC (**Section 3.3**). Included within **Appendix E** is a table that provides the minimum of ESC for each contaminant included in the analytical program and the subcontract laboratory's expected MDLs.

In surface water, MDLs for hexachlorobenzene, toxaphene, 4,4′-DDE, cadmium, copper, and silver were greater than the DQOs in all samples. The MDL for benzo(*a*)anthracene was greater than the DQO in one sample and the MDLs for Aroclor 1016 and Aroclor 1254 were greater than the MDLs in some of the samples.

In sediments, MDLs for acrylonitrile, methylene bromide, diethyl phthalate, 2-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, pentachlorophenol, 4-nitrophenol, and toxaphene were greater than the DQOs in all samples. The MDLs for several PAHs [acenaphthene, acenaphthylene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and naphthalene], phthalates [bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, and di-*n*-butyl phthalate)], phenolic compounds (phenol and 2-4-dimethylphenol), other SVOCs (2,4-dinitrotoluene, hexachlorobutadiene, hexachloroethane, and nitrobenzene), pesticides (toxaphene, 4,4′-DDT, and heptachlor), PCBs (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1248, Aroclor 1260), and metals (antimony, selenium, and silver) were greater than the MDLs in some of the samples.

It should be noted that a MDL greater than the DQO does not imply that the MDL is greater than the media-specific ESC. Additionally, many of the elevated MDLs were in samples in which the parameter was detected; thus, the elevated MDL has no impact on the ability to detect the parameter. The evaluation of COPECs with regard to elevated MDLs is discussed in more detail in **Section 3.4**.

3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS

The TRSR references several sources for ESC for use in a BEE. This includes ESC sources for sediment, surface water, and soil. The NJDEP also maintains a table of current recommended ESC based on those aforementioned sources as well as others (NJDEP, 2009c). The SRP's Environmental

Toxicology and Risk Assessment Unit has developed this table from various sources to allow ease of reference for selection of ESC for surface water, sediment, and soil.

Not all contaminants have listed ESC for all media; contaminants detected in environmental media without ESC are identified in this BEE report, but the development of ESC is beyond the scope of the BEE. The most recent version of the cited ESC is used in this BEE. The NJDEP ESC table, which was last updated on March 10, 2009, is presented in **Appendix E**. Also included within **Appendix E** is a table that provides the minimum of those ESC for each contaminant and the subcontract laboratory's MDLs.

Some contaminants for some media have multiple values provided. The following sections describe the process used in selection of appropriate ESC for this BEE and is meant to provide a systematic approach which maintains appropriate conservativeness in this screening level assessment.

3.3.1 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SEDIMENT

For sediments, the TRSR referenced sources are the following:

- USEPA Briefing Report to the EPA Science Advisory Board on the Equilibrium Partitioning Approach to Generate Sediment Quality Criteria (USEPA, 1989b).
- USEPA Technical Basis for Deriving Sediment Quality Criteria for Nonionic Organic Contaminants for the Protection of Benthic Organisms by Using Equilibrium Partitioning (USEPA, 1993).
- Effects Range-Low (ER-L) and Effects Range-Median (ER-M) values (Long et al., 1995).
- Lowest Effect Level (LEL) and Severe Effect Level (SEL) values (Persaud et al., 1993).

The first two sources provide a method for determining screening criteria based on the equilibrium partitioning approach which uses applicable surface water screening criteria organic carbon partitioning coefficients. As such, these criteria are a function of the site-specific organic carbon content in the sediment and are usually presented based on 1% total organic carbon content.

The ER-L and ER-M values were developed for marine environments and are based on evaluation of data from numerous studies including equilibrium partitioning modeling, laboratory bioassays, and field studies. The ER-L values represent a concentration at which adverse effects are only found in approximately 10% of the studies. The ER-M values represent a concentration at which adverse effects are found in approximately 50% of the studies.

The LEL and SEL values were developed for freshwater environments and are also based on evaluation of data from numerous studies and include equilibrium partitioning modeling, laboratory bioassays, and field studies, as well as sediment background levels. The LEL values represent a level of contamination that has no effect on the majority of sediment-dwelling organisms. The SEL values represent a level of contamination which is likely to affect the health of sediment-dwelling organisms.

NJDEP (1998) recommends using benchmarks listed in the TRSR from Long et al. (1995) and Persaud et al. (1993) as well as chronic values from MacDonald et al. (1992) for several VOCs.

The NJDEP maintains a table of current recommended ESC based on these aforementioned sources as well as others (NJDEP, 2009c). This table often has more than one value for a given parameter and a given medium (e.g., sediment, surface water, soil). For this BEE, the three sources listed above (Long et al., 1995; Persaud et al., 1993; MacDonald et al., 1992) as presented in the NJDEP table (NJDEP, 2009c) are used as the primary source of ESC.

For saltwater sediments, the ER-L (Long et al., 1995) is used as the ESC. If an ER-L is not available, but a chronic value based on equilibrium partitioning (MacDonald et al., 1992) is available, then the chronic value is used. If no values are provided from one of these two primary sources, then values available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003)] are used.

For freshwater sediments, the LEL (Persaud et al., 1993) is used as the ESC. If an LEL is not available, but the table recommends the use of either the saltwater chronic value based on equilibrium

partitioning (MacDonald et al., 1992) or the saltwater ER-L (Long et al., 1995), then the saltwater chronic value or saltwater ER-L is used. It should be noted that though the table may list a value as an LEL it may not actually be the LEL as determined by Persaud et al. (1993). If no values are provided from one of these three primary sources, then values available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003), NOAA Quick Screening Reference Tables (Buchman, 2008)] are used.

3.3.2 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SURFACE WATER

For surface water, the TRSR referenced sources are the following:

- USEPA Ambient Water Quality Criteria, 40 CFR Part 131 (USEPA, 2006; 2010).
- New Jersey Surface Water Quality Standards (N.J.A.C., 2010).

These sources contain values for freshwater and saltwater and include values for the protection of human health and protection of aquatic organisms from effects due to both acute and chronic exposures. The NJDEP table (NJDEP, 2009c) includes values from these sources and they are used as the primary source of surface water ESC. Values developed for the protection of human health are never used as ESC for an ecological evaluation. If provided, values used for the protection from chronic effects are used as ESC. Acute values are only used as ESC if, values used for the protection of aquatic life from chronic effects are not available.

The freshwater surface water ESC for several metals are functions of site-specific hardness. The equations used for these calculations are provided with the NJDEP table (**Appendix E**). The minimum hardness detected in a surface water body during the BEE investigation near an individual site where freshwater criteria are potentially applicable was used to calculate the site-specific BEE for the individual site. Freshwater hardness-dependent criteria were not calculated for individual sites where only saltwater criteria are applicable and the magnitude of the measured hardness render the calculated criteria irrelevant.

For chromium, values may be presented for total chromium, trivalent chromium, or hexavalent chromium. When available from primary sources, the value for total chromium is used as the ESC for this BEE. If not available from a primary source for total chromium, then the value for trivalent chromium is used for this BEE. Values provided for hexavalent chromium are used as ESC in this BEE if, and only if, values from primary sources for total chromium and trivalent chromium are not available. The freshwater ESC used in this BEE is based on total chromium and the saltwater ESC is based on hexavalent chromium.

The freshwater surface water ESC for pentachlorophenol is a function of pH. A pH value of 6 was used to determine an ESC for surface water bodies at the MP and a value of 5.76 was used at the CWA; these represent the minimum pH values measured during the BEE investigation.

If no values are provided from one of these primary sources, then values available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003)] are used. The NJDEP table also provides some values that were developed specific to Shell Oil at an active remediation site. These values are not used as ESC in this BEE, since other sources were available.

3.3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SOIL

For soil, the TRSR referenced sources are the following:

- Fish and Wildlife Service Contaminant Hazard Reviews (Eisler, 1999).
- Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants (Will and Suter, 1995).

The contaminant hazard reviews available from the Fish and Wildlife Service do not necessarily provide values to use as soil ESC but provide information related to toxicity, bioaccumulation, and bioavailability of contaminants to wildlife. This information is utilized by others (USEPA, 2005; Efroymson et al., 1997a; Sample et al.,1996) in developing appropriate values.

The toxicological benchmarks for plants cited above have been revised (Efroymson et al., 1997b) and, like the 1994 revision, were developed for Oak Ridge National Laboratory (ORNL) using a method similar to that used for calculating the ER-L and ER-M values (Long and Morgan, 1990; Long et al., 1995). Other benchmarks for the protection of wildlife for contaminants in soil have also been derived for ORNL (Sample et al., 1996). In this document, several species-specific benchmarks are determined based on food chain modeling for different contaminants. The NJDEP table provides the minimum of the plant toxicity and wildlife benchmarks as wildlife preliminary remediation goals (PRGs) for potential use as soil ESC.

The USEPA (2005) developed ecological soil screening levels (Eco-SSLs). These represent the result of a multi-stakeholder group consisting of federal, state, consulting, industry, and academic participants performed in order to conserve resources by limiting the need for EPA and other risk assessors to perform repetitious toxicity data literature searches and data evaluations for the same contaminants at every site. The general approach to develop these Eco-SSLs involved a literature search, screening the literature for acceptability, evaluating the results for applicability in deriving the Eco-SSLs, and deriving the value. These values represent a broad spectrum of wildlife and include mammals, birds, plants, and soil invertebrates. The literature screened in this process included that used by ORNL in developing wildlife PRGs.

The USEPA Eco-SSLs (USEPA, 2005), the ORNL wildlife PRGs (Sample et al., 1996), and the ORNL plant toxicity benchmarks (Efroymson et al., 1997b), are considered the primary source of values for ESC in this BEE. The most conservative (i.e., minimum) values from the NJDEP tables (2009c) that represent either the USEPA Eco-SSLs or the ORNL wildlife PRGs or plant toxicity benchmarks are used as ESC for this BEE. If values are not available from either of these sources, then secondary sources are used for ESC. These include the USEPA Region V ecological screening values (USEPA Region 5, 2003). Though developed from food chain models, as were those for Eco-SSLs and wildlife PRGs, these values did not involve as comprehensive an effort in either the literature review or screening for acceptability and do not provide sufficient supporting documentation.

3.4 IDENTIFICATION OF COPECS

COPECs are defined for the purposes of this BEE as those constituents that were detected at concentrations greater than the appropriate screening benchmarks in any of the samples from a given medium from a site. For some parameters, the conservative benchmarks used as ESC are lower than normal laboratory method detection limits (MDLs). If these parameters are not detected, it is possible that they are present at a concentration exceeding the ESC. This is particularly important for surface water and sediment, the two media to which ecological receptors may be directly and routinely exposed. Therefore, for parameters not detected in samples from either surface water or sediment, the MDLs were also compared to the ESC. These parameters were not identified as possible COEPCs if any of the following were true:

- These parameters were not identified as COPECs in other site media.
- These parameters were not detected exceeding the ESC in samples for which the MDL was not greater than the conservative ESC.
- The MDLs for these parameters were only marginally greater than the conservative ESC, or related parameters (e.g., other chlorinated benzenes, other related pesticides) were not detected above ESC in these samples.
- These parameters are not expected to found as site-related contaminants.

For surface water, MDLs for a few SVOCs, pesticides, PCBs, and metals were above one or both ESC in some or all samples.

- The MDLs for hexachlorobenzene exceeded the freshwater ESC in all surface water samples; there is no saltwater ESC. However, this organic compound was not identified as a COPEC in other media at the sites and is not considered a COPEC in surface water. The MDL for benzo(*a*)pyrene exceeded the freshwater ESC in one sample at one site; it was, however, detected in that sample and is considered a COPEC at that site.

- The MDLs for toxaphene exceeded the freshwater and saltwater ESC in all surface water samples; however, this pesticide was not identified as a COPEC in other media at the sites and is not considered a COPEC in surface water. The MDLs for 4,4′-DDE exceeded the freshwater ESC in all surface water samples; there is no saltwater ESC. Though 4,4′-DDE was identified as a COPEC in soil, groundwater, or sediment at some sites, 4,4′-DDE is not considered to be mobile in abiotic media and is expected to adsorb strongly to organic matter; however, based on the extremely low ESC for 4,4′-DDE in surface water [0.00000000451 micrograms/liter (µg/L)], 4,4′-DDE is considered a possible COPEC in surface water if it is identified as a COPEC in sediment.
- The MDLs for Aroclor 1016 and Aroclor 1254 were marginally greater than the freshwater ESC at some sites, but less than the saltwater ESC. These Aroclors are considered possible COPECs in surface water only if they are detected at concentrations exceeding the ESC.
- The MDLs for cadmium, copper, and silver were greater than one or both ESC in some or all samples. The MDLs for cadmium and silver exceeded the freshwater ESC in all samples but were below the saltwater ESC. The MDLs for copper exceeded the saltwater ESC but were below the freshwater ESC. Cadmium, copper, and zinc are identified as possible COPECs in surface water if they are identified as COPECs in other site media.

For sediment, MDLs for some VOCs, SVOCs, pesticides, PCBs, and metals were greater than one or both ESC in some or all samples. It should be noted that organic parameters that were not detected in the BEE investigation sediment samples were reported at the MDL. Those in the SI data are presented as non-detect at a reporting limit; organic parameters were routinely presented detectable to a detection limit concentration of one-tenth this reporting limit.

- The MDLs for acrylonitrile and methyl bromide exceeded the freshwater sediment ESC in all samples; there are no saltwater sediment ESC. These were not identified as COPECs in other media and are not considered COPECs in sediment. The MDL for 1,1-dichloroethene exceeded the freshwater ESC in one sample at one site in the BEE investigation and in all samples in the SI. It was not detected at the BEE investigation site in the other samples nor was it identified as a COPEC in other media at these sites; and it is not considered a COPEC in sediment at the site. The MDL for 1,2-dichloro-benzene exceeded the saltwater ESC in all SI samples; it was not identified as a COPEC in other media at those sites and is not considered a COPEC in sediment.
- The MDLs for nine PAHs [acenaphthene, acenaphthylene, anthracene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and naphthalene] were only marginally greater than the ESC in some or all samples from some sites. In samples where MDLs exceeded applicable ESC in only some samples, these PAHs were either detected in samples at the sites and considered COPECs or not detected in the samples at the site for which MDLs met the ESC and are not considered COPECs. In samples where MDLs exceeded applicable ESC in all samples, these PAHs were considered possible COPECs in sediment if identified as COPECs in other site media.
- The MDLs for four phthalates [bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, diethyl phthalate, and di-*n*-butyl phthalate) exceeded the ESC in some or all samples at some sites. Most of these MDLs were only marginally greater than the ESC, and these phthalates were not detected in sediment samples for which the MDLs met the ESC or identified as COPECs in other site media. These phthalates are not considered COPECs in sediment.
- The MDLs for several phenolic compounds (phenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, pentachlorophenol, 2,4-dimethylphenol, 4-nitrophenol, and 2,4-dinitrophenol) exceeded the ESC in some or all samples at some sites. Of these, only 2,4-dintirophenol was detected in any sediment samples and it is considered a COPEC at those sites. The other phenolic compounds were not identified as COPECs in other media at these sites and were not detected in other samples for which the MDLs met the ESC; these phenolic compounds are not considered COPECs at the sites.

- The MDLs for four other SVOCs (2,4-dinitrotoluene, hexachlorobutadiene, hexachloroethane, 1,2,4-trichlorobenzene, hexachlorobenzene, and nitrobenzene) exceeded the ESC in some or all samples at some sites. Of these, hexachlorobutadiene was detected in sediment at one site and it is considered a COPEC at that site and was identified as a COPEC in surface water at another site; it is considered a possible COPEC in sediment at that site. The other SVOCs were not identified as COPECs in other media at these sites, were not detected in other samples for which the MDLs met the ESC, and related compounds were not identified as COPECs at the sites; these SVOCs are not considered COPECs at the sites.
- The MDLs for three pesticides (toxaphene, 4,4′-DDT, and heptachlor) exceeded the ESC in some or all samples at some sites. The MDLs for toxaphene exceeded the freshwater sediment ESC in all samples; there is no saltwater sediment ESC for toxaphene. Toxaphene was not identified as a COPEC in other media and it is not considered a COPEC in sediment. The MDL for 4,4′-DDT exceeded the freshwater sediment ESC in one samples; it was, however, detected in that sample and is considered a COPEC at the site. The MDLs for heptachlor only marginally exceeded the saltwater sediment ESC in some samples but were all below the freshwater sediment ESC.
- The MDLs for five PCB mixtures (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1248, and Aroclor 1260) marginally exceeded the ESC in some or all samples at some sites. The Aroclor 1221 and Aroclor 1232 MDLs slightly exceeded the saltwater ESC in some samples at one site, but were below the freshwater ESC; these Aroclors were not detected in the samples where the MDLs met the ESC and are not considered COPECs at the sites. The MDL for Aroclor 1248 in one sample marginally exceeded the freshwater ESC; Aroclor 1248 was not detected in the other samples and it is not considered a COPEC at the site. The MDLs for Aroclor 1016 and Aroclor 1260 marginally exceeded the ESC in samples at several sites. Aroclor 1260 was detected in samples at three sites and is considered a COPEC at those sites. Aroclor 1016 and Aroclor 1260 were not detected in any of the other sediment samples at the other sites where MDLs met the ESC and they were not identified as COPECs in other media; Aroclor 1016 and Aroclor 1260 are not considered COPECs in sediment at these sites.
- The MDLs of three metals (antimony, selenium, and silver) exceeded the ESC at a few sites. Where selenium MDLs exceeded the ESC, selenium was detected exceeding the ESC and selenium is considered a COPEC. The MDLs for antimony and silver exceeded the ESC in only one sample at one site. Antimony and silver were not detected at concentrations exceeding the ESC in the other samples at the site where the MDLs met the ESC and these metals are not considered COPECs in sediment at the site.

The following sections present the concentrations measured in background media during the BEE investigation and address the identification of COPECs, as well as possible COPECs based on MDL review, for each of the sites and parcels addressed in this BEE.

3.4.1 CONSTITUENTS IN BACKGROUND MEDIA

As noted in **Section 2.4.7**, the local geology and soil types determine the levels of naturally-occurring constituents present in soil. These natural background levels (**Table 2-3**) are meant to be inclusive of naturally-occurring levels in soil as well as those from regional deposition but not those from point source contamination. The local geology and soil types determine the levels of naturally-occurring constituents present in soil (Dooley, 2001; Sanders, 2003; BEM Systems, Inc., 1998).

Background levels for FTMM were reported by Weston (1995) in the SI report (**Appendix H**). FTMM-specific background levels were reported for soil, groundwater, surface water, and sediment, and background levels were reported for Monmouth County for soil and groundwater for select constituents. In addition to characterizing background levels related to soil geology and regional deposition, the FTMM-specific levels also incorporate effects from local land use (**Section 2.4.9**).

Background concentrations of constituents were also investigated during the BEE investigation. Surface water and sediment samples were analyzed for the same constituents as were site samples.

Nine surface water and sediment samples were collected from locations upgradient of the MP on Husky Brook, Mill Creek, Lafetra Creek, and Northern Branch of Parkers Creek. One surface water and two sediment samples were collected from locations upgradient of the CWA on Shrewsbury Creek. One surface water and sediment sample were collected from Wampum Brook in the CWA, but upgradient of site activities. Additionally, one surface water and one sediment sample each were collected from both Shrewsbury Creek and Wampum Brook in the CWA at points near the downgradient (eastern) border of the CWA. All background sampling locations were in freshwater areas, the following discussions compare results to both freshwater and saltwater criteria since background concentrations can affect both freshwater and saltwater areas on site.

3.4.1.1 MAIN POST BACKGROUND

3.4.1.1.1 Main Post Surface Water Background

Nine surface water samples were collected from locations upgradient of the MP activities. Two were collected from Husky Brook, three were collected from Mill Creek, three were collected from Lafetra Creek, and one was collected from the North Branch of Parkers Creek. Parameters detected in surface water samples are presented in **Table D-1**.

VOCs. Three VOCs were detected in surface water from MP background samples. Chloroform and PCE were detected in one sample each, and *cis*-1,2-dichloroethene was detected in three samples. All detected concentrations were less than the available freshwater and saltwater ESC.

Pesticides/PCBs. No pesticides or PCBs were detected in surface water from MP background samples.

SVOCs. Four SVOCs were detected in surface water from MP background samples. Benzoic acid and 1,2,4-tetrachlorobenzene were detected in one sample each; anthracene and benzo(*a*)anthracene were detected in two samples each. The detected concentrations of anthracene and benzo(*a*)anthracene were greater than the applicable freshwater or saltwater ESC.

Metals. A total of 14 metals were detected in surface water from MP background samples: aluminum, arsenic, barium, calcium, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, thallium, and zinc. Only lead was detected at concentrations greater than the applicable freshwater or saltwater ESC.

A summary of the MP background surface water concentrations is presented in **Table 3-3**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.1.2 Main Post Sediment Background

Nine sediment samples were collected from locations upgradient of the MP activities. Two were collected from Husky Brook, three were collected from Mill Creek, three were collected from Lafetra Creek, and one was collected from the North Branch of Parkers Creek. Parameters detected in surface sediment samples are presented in **Table D-2**.

VOCs. Four VOCs were detected in sediment from MP background samples. Acetone was detected in six samples, methylene chloride was detected in four samples, toluene was detected in one sample, and 2-butanone was detected in two samples. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

Pesticides. Two pesticides (4,4′-DDD and 4,4′-DDE) were detected in sediment from MP background samples. 4,4′-DDD and 4,4′-DDE were detected in samples from Mill Creek and Husky Brook and most detected concentrations exceeded the saltwater sediment ESC but not the freshwater sediment ESC.

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1254) were detected in sediment from MP background samples. PCBs were detected in samples from Mill Creek. Most detected concentrations exceeded the fresh water or saltwater sediment ESC.

SVOCs. A total of 20 SVOCs were detected in sediment from MP background samples. Bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, and dimethyl phthalate were detected in some sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from MP background samples were acenaphthene, acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, dibenzo(*a,h*)anthracene, dibenzofuran, 3,3′-dichlorobenzidine, fluoranthene, fluorene, indeno(1,2,3-*cd)*pyrene, phenanthrene, and pyrene. Most were found at concentrations that were greater than the freshwater or saltwater sediment ESC.

Metals. A total of 23 metals were detected in sediment from MP background samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. Most of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample exceeding the ESC: antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc.

A summary of the MP background sediment concentrations is presented in **Table 3-4**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.2 CHARLES WOOD AREA BACKGROUND

3.4.1.2.1 Charles Wood Area Surface Water Background

Two surface water samples were collected from locations upgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface water samples are presented in **Table D-3**.

VOCs. One VOC was detected in surface water from CWA background samples. Methyl *tert*-butyl ether (MTBE) was detected in one sample. The detected concentration was less than the freshwater and saltwater ESC.

Pesticides. One pesticide was detected in surface water from CWA background samples. 4,4′-DDD was detected in one surface water sample. There are no available freshwater or saltwater ESC for 4,4′-DDD.

PCBs. One PCB mixture was detected in surface water from CWA background samples. Aroclor 1242 was detected in one surface water sample at a concentration greater than both the freshwater and saltwater ESC.

SVOCs. One SVOC was detected in surface water from CWA background samples. Anthracene was detected in one surface water sample; the concentration was greater than the applicable freshwater ESC.

Metals. A total of 19 metals were detected in surface water from CWA background samples: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc. The detected concentrations of total cadmium, total chromium, total copper, total lead, total vanadium, and total zinc exceeded the applicable freshwater ESC in one or both samples; however, only the dissolved concentrations of cadmium, cobalt, and lead were above the applicable freshwater ESC. These exceedances of dissolved concentration ESC were all from the surface water sample from Wampum Brook. Concentrations of total nickel and dissolved nickel exceeded the saltwater ESC. Total chromium, copper, lead, and zinc also exceeded the saltwater ESC in at least one sample.

A summary of the CWA background surface water concentrations is presented in **Table 3-5**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.2.2 Charles Wood Area Sediment Background

Three sediment samples were collected from locations upgradient of the CWA activities. Two were collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface sediment samples are presented in **Table D-4**.

VOCs. Five VOCs were detected in sediment from CWA background samples. Acetone, methylene chloride, and 2-butanone were detected in one or two samples from Shrewsbury Creek. Styrene and toluene were detected in the sample from Wampum Brook. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

Pesticides. One pesticide (4,4′-DDD) was detected in sediment from CWA background samples. 4,4′-DDD was detected in one sample from Shrewsbury Creek. The detected concentration was less than the applicable freshwater sediment ESC but above the saltwater sediment ESC.

PCBs. No PCBs were detected in sediment from CWA background samples.

SVOCs. A total of 18 SVOCs were detected in sediment from CWA background samples. Dimethyl phthalate was detected in all sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from CWA background samples were acenaphthene, acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene. Though all 18 were detected in Wampum Brook, dimethyl phthalate and three of the PAHs [anthracene, benzo(*a*)anthracene, and benzo(*a*)pyrene] were also detected in Shrewsbury Creek. Most of the PAHs in Wampum Brook were found at concentrations that were greater than the freshwater or saltwater sediment ESC.

Metals. A total of 20 metals were detected in sediment from CWA background samples: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc. Seven of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample greater than the ESC: barium, cadmium, chromium, lead, mercury, nickel, and selenium.

A summary of the CWA background sediment concentrations is presented in **Table 3-6**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.3 CHARLES WOOD AREA DOWNGRADIENT SURFACE WATER

Two surface water samples were collected from locations downgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface water samples are presented in **Table D-5**.

VOCs. VOCs were not detected in surface water from CWA downgradient samples.

Pesticides. No pesticides were detected in surface water from CWA downgradient samples.

PCBS. One PCB mixture was detected in surface water from CWA downgradient samples. Aroclor 1242 was detected in the sample from Wampum Brook at a concentration less than that from the Wampum Brook background sample. The detected concentration was above both the freshwater and saltwater ESC.

SVOCs. One SVOC was detected in surface water from CWA background samples. Hexachlorobutadiene was detected in the Shrewsbury Creek downgradient sample at a concentration greater than the applicable freshwater ESC.

Metals. A total of 15 metals were detected in surface water from CWA downgradient samples: aluminum, arsenic, barium, calcium, cadmium, cobalt, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, and zinc. The detected concentrations of total cadmium exceeded the

freshwater ESC in Wampum Brook but not in Shrewsbury Creek; the dissolved concentrations were below the ESC. Total lead and dissolved lead exceeded the freshwater ESC in both samples. Dissolved selenium also slightly exceeded the freshwater ESC in the Shrewsbury Creek sample.

A summary of the CWA downgradient surface water concentrations is presented in **Table 3-7**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.4 CHARLES WOOD AREA DOWNGRADIENT SEDIMENT

Two sediment samples were collected from locations downgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface sediment samples are presented in **Table D-6**.

VOCs. Two VOCs were detected in sediment from CWA downgradient samples. Acetone was detected in both sediment samples and methylene chloride was detected in the sample from Shrewsbury Creek. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

PCBs. Aroclor 1242 was detected in sediment from CWA downgradient samples. Aroclor 1242 was detected in the sample from Wampum Brook. The detected concentration was below the applicable freshwater sediment ESC but above the saltwater sediment ESC. No other PCBs were detected in sediment from CWA downgradient samples.

SVOCs. A total of eight SVOCs were detected in sediment from CWA downgradient samples. Dimethyl phthalate was detected in both sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from CWA downgradient samples were anthracene, benzo(*a*)anthracene, and benzo(*a*)pyrene which were detected in both samples, acenaphthene and phenanthrene which were detected in the Shrewsbury Creek sample, and fluoranthene and pyrene which were detected in the Wampum Brook sample. The concentrations of acenaphthene and phenanthrene in the Wampum Brook sample were greater than the freshwater sediment ESC.

Metals. A total of 21 metals were detected in sediment from CWA downgradient samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc. Seven of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample exceeding the ESC: cadmium, chromium, and selenium in both samples; arsenic, mercury, and lead in Shrewsbury Creek; and nickel in Wampum Brook.

A summary of the CWA downgradient sediment concentrations is presented in **Table 3-8**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.2 MAIN POST

3.4.2.1 LANDFILL 2 (FTMM-2)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 2 (FTMM-2).

3.4.2.1.1 COPECs for Soil at Landfill 2 (FTMM-2)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 2 (FTMM-2) as part of the IRP RI investigation (Versar, 2001). A total of 195 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-1**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Landfill 2 (FTMM-2). Of these 22 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)pyrene was detected in five samples at concentrations exceeding the 1.52 mg/kg ESC. Benzo(*a*)anthracene, chrysene, naphthalene and bis(2-ethylhexyl) phthalate were detected at concentrations exceeding the soil ESC in one or two samples each. Bis(2-ethylhexyl) phthalate is

commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. These four PAHs, benzo(*a*)pyrene, benzo(*a*)anthracene, chrysene, and naphthalene, are considered COPECs in soil at Landfill 2 (FTMM-2).

Pesticides. Eight pesticides were detected in near surface soil samples from Landfill 2 (FTMM-2). Six of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the soil samples and the majority of these contained 4,4′-DDT at concentrations that were greater than the 0.00035 mg/kg ESC. 4,4′-DDD was detected in two samples at concentrations that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in only one sample at a concentration that exceeded the 0.596 mg/kg ESC. Dieldrin was detected in several samples with concentrations exceeding the 0.0049 mg/kg ESC. Endrin was detected in one sample at a concentration exceeding the 0.0101 mg/kg ESC. gamma-BHC was also detected in one sample at a concentration exceeding the 0.005 mg/kg ESC. These six pesticides (4,4′-DDD, 4,4′-DDT, 4,4′-DDE, dieldrin, endrin, and gamma-BHC) are considered COPECs at Landfill 2 (FTMM-2).

PCBs. Four Aroclors were detected in near surface soil samples from Landfill 2 (FTMM-2). These were detected infrequently. Aroclor 1242 and Aroclor 1248 were detected in one sample each. Aroclor 1254 was detected in four samples and Aroclor 1260 was detected in three samples. Most of these concentrations exceeded the ESC. These PCB mixtures (Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260) are considered COPECs in soil at Landfill 2 (FTMM-2).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 2 (FTMM-2) of which most metals were detected in the majority of the samples. Thallium and silver were detected in 1 and 10 samples, respectively. Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 2 (FTMM-2). The other 17 metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) are considered COPECs in soil at Landfill 2 (FTMM-2).

3.4.2.1.2 COPECs for Groundwater at Landfill 2

Sixteen groundwater monitoring wells at Landfill 2 (FTMM-2) have been monitored during the 2008-2009 time period. Mill Creek could receive groundwater discharge from Landfill 2 (FTMM-2). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-1**.

VOCs. A total of nine VOCs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of these 16 VOCs, one (chlorobenzene) was detected at concentrations exceeding the freshwater ESC (47 µg/L); these samples were all collected from one monitoring well (M2MW03). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is freshwater. Chlorobenzene is considered a COPEC in groundwater at Landfill 2 (FTMM-2).

SVOCs. A total of four SVOCs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. No SVOCs were detected at concentrations exceeding the freshwater ESC; SVOCs are not considered COPECs in groundwater at Landfill 2 (FTMM-2).

PCBs. No PCBs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. PCBs are not considered COPECs in groundwater at Landfill 2 (FTMM-2).

Pesticides. A total of 19 pesticides were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of the 19 pesticides, nine pesticides were detected exceeding the freshwater ESC in at least one sample. Aldrin, alpha-chlordane, gamma-chlordane, 4,4′-DDE, 4,4′-DDT, endrin, heptachlor, heptachlor epoxide, and methoxychlor were detected at concentrations above their ESC. Of these, aldrin and endrin were detected exceeding the ESC in only one of the wells, and alpha-chlordane and heptachlor epoxide were detected exceeding the ESC in only two of the monitoring wells. These nine pesticides (aldrin, alpha-chlordane, gamma-chlordane, 4,4′-DDE,

4,4′-DDT, endrin, heptachlor, heptachlor epoxide, and methoxychlor) are considered COPECs in groundwater at Landfill 2 (FTMM-2).

Metals. A total of eight metals were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of these eight, five (antimony, barium, cadmium, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. One sample had an antimony concentration exceeding the freshwater ESC of 80 µg/L. Barium concentrations in four of the monitoring wells had concentrations exceeding the 220 µg/L freshwater ESC. Cadmium was detected at a concentration exceeding the freshwater ESC (0.16 µg/L) in one well. Lead and selenium were detected at concentrations exceeding the ESC (5.4 and 5 µg/L, respectively) in most, if not all, of the wells. Antimony, barium, cadmium, lead, and selenium are considered COPECs in groundwater at Landfill 2 (FTMM-2).

3.4.2.1.3 COPECs for Surface Water at Landfill 2 (FTMM-2)

Two surface water samples were collected from Mill Creek adjacent to Landfill 2 (FTMM-2) as part of the 2010 BEE. One sample was collected immediately downstream of a storm water outfall from the area of Building 1150 in Parcel 39 and the other sample was downstream of all storm water outfalls from Parcel 39 (**Appendix K**). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-7**.

Pesticides. No pesticides were detected in surface water samples at Landfill 2 (FTMM-2). Pesticides are not considered COPECs in surface water at Landfill 2 (FTMM-2).

PCBs. No PCBs were detected in surface water samples at Landfill 2 (FTMM-2). PCBs are not considered COPECs in surface water at Landfill 2 (FTMM-2).

VOCs. Three VOCs were detected in at least one of the two surface water samples. PCE, TCE, and *cis*-1,2-dichloroethene were detected at concentrations less than the ESC. VOCs are not considered COPECs in surface water at Landfill 2 (FTMM-2).

SVOCs. Three SVOCs were detected in at least one of the two surface water samples. Anthracene (0.10 and 0.11 µg/L) and benzo(*a*)anthracene (0.22 and 0.23 µg/L) were detected exceeding the freshwater ESC (0.035 and 0.025 µg/L, respectively); 1,2,4-trichlorobenzene was detected in one surface water sample at a concentration less than the ESC. Anthracene and benzo(*a*)anthracene are considered COPECs in surface water at Landfill 2 (FTMM-2).

Metals. A total of 12 metals were detected in surface water samples at Landfill 2 (FTMM-2). One metal was detected at concentrations exceeding the freshwater ESC. Total lead (6.2 and 6.36 µg/L) and dissolved lead (7.86 and 10.1 µg/L) were detected at concentrations exceeding the freshwater ESC for dissolved lead (5.4 µg/L). Lead is considered a COPEC in surface water at Landfill 2 (FTMM-2).

3.4.2.1.4 COPECs for Sediment at Landfill 2 (FTMM-2)

Thirteen sediment samples (including one duplicate sample) were collected from Mill Creek adjacent to Landfill 2 (FTMM-2) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek in the vicinity of Landfill 2 (FTMM-2) from the area of Building 1150 and Parcel 39 (**Section 3.4.2.13**). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-8**.

VOCs. Three VOCs (acetone, methylene chloride, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the ESC.

Pesticides. Four pesticides (4,4'-DDT, 4,4'-DDE, 4,4'-DDD, and alpha-chlordane) were detected in at least one sediment sample each from Landfill 2. None were detected at concentrations exceeding the freshwater sediment ESC and pesticides are not considered COPECs in sediment at Landfill 2 (FTMM-2).

PCBs. Three PCBs mixtures (Aroclor 1242, Aroclor 1254, and Aroclor 1260) were detected in at least one sediment sample each from Landfill 2 (FTMM-2); each was detected at a concentration greater

than the freshwater sediment ESC in at least one sample. Aroclor 1242 was detected in one sample (0.12 mg/kg) greater than the ESC for PCBs of 0.07 mg/kg. Aroclor 1254 was detected in one sample (0.064 mg/kg) greater than the 0.06 mg/kg freshwater sediment ESC for Aroclor 1254, and Aroclor 1260 was detected in two samples (0.01 and 0.04 mg/kg) greater than the 0.005 mg/kg freshwater sediment ESC for Aroclor 1260. Aroclor 1242, Aroclor 1254, and Aroclor 1260 are considered COPECs in sediment at Landfill 2 (FTMM-2).

SVOCs. A total of 20 SVOCs were detected in surface sediment samples at Landfill 2 (FTMM-2). Of the 20 detected SVOCs, six were detected in at least one sediment sample at concentrations exceeding the ESC. Bis(2-ethylhexyl) phthalate was detected in one sediment sample at a concentration (0.28 mg/kg) which exceeds the freshwater sediment ESC of 0.182 mg/kg. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 2 (FTMM-2). Chrysene (0.37 mg/kg), dibenzo(*a,h*)anthracene (0.1 mg/kg), 2,4-dinitrophenol (1.1 mg/kg), and pyrene (0.71 mg/kg) were detected in one sample each above the freshwater sediment ESC. Fluoranthene (0 0.92 mg/kg) was detected above the ESC in one sample. All SVOC exceedances were detected in only 2 of the 12 sediment samples (M2-SD7 and M2-SD13). Chrysene, dibenzo(*a,h*)anthracene, 2,4-dinitrophenol, fluoranthene, and pyrene are considered COPECs in sediment at Landfill 2 (FTMM-2).

Metals. Of the 22 metals detected in sediment at Landfill 2 (FTMM-2), seven (arsenic, cadmium, chromium, copper, lead, mercury, and nickel) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in one sample (8.09 mg/kg), cadmium concentrations in all 12 samples (1.44 to 2.76 mg/kg), chromium concentrations in all 12 samples (31.8 to 125 mg/kg), copper concentrations in one sample (22.5 mg/kg), lead in four samples (31.2 to 52.8 mg/kg), mercury in one sample (0.21 mg/kg), and nickel in one sample (29.2 mg/kg) exceeded the freshwater sediment ESC (6 mg/kg arsenic, 0.6 mg/kg cadmium, 26 mg/kg chromium, 16 mg/kg copper, 31 mg/kg lead, 0.2 mg/kg mercury, and 16 mg/kg nickel). Though there are no freshwater sediment ESC for barium and selenium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC in some sediment samples. These metals were identified as COPECs in soil and groundwater at Landfill 2 (FTMM-2) and are considered COPECs in sediment. Arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and selenium are considered COPECs in sediment at Landfill 2 (FTMM-2).

3.4.2.1.5 Summary of COPECs for Landfill 2 (FTMM-2)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 2 (FTMM-2) at concentrations greater than the applicable ESC are identified as COPECs for the site. Though cadmium and 4,4′-DDE were not detected in surface water at Landfill 2 (FTMM-2), their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in soil, groundwater, and sediment and 4,4′-DDE is considered a COPEC in soil and groundwater (though not sediment), they are considered possible COPECs in surface water. The COPECs, and possible COPECs, identified for Landfill 2 (FTMM-2) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Chlorobenzene	None	None
Pesticides			
Gamma-BHC 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin	Aldrin gamma-Chlordane alpha-Chlordane DDE DDT Endrin Heptachlor Heptachlor epoxide Methoxychlor	None	None
PCBs			
Aroclor 1242 Aroclor 1248	None	None	Aroclor 1242 Aroclor 1254

Soil	Groundwater	Surface Water	Sediment
Aroclor 1254 Aroclor 1260			Aroclor 1260
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene	None	Anthracene Benzo(*a*)anthracene	Chrysene Dibenzo(*a,h*)anthracene 2,4-Dinitrophenol Fluoranthene Pyrene
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Antimony Barium Cadmium Lead Selenium	Lead	Arsenic Barium Cadmium Chromium Copper Lead Mercury Nickel Selenium
Possible COPECs			
		DDE Cadmium	

3.4.2.2 LANDFILL 3 (FTMM-3)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 3.

3.4.2.2.1 COPECs for Soil at Landfill 3 (FTMM-3)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 3 (FTMM-3) as part of the IRP RI investigation (Versar, 2004a). A total of 205 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-2**.

SVOCs. A total of 23 SVOCs were detected in near surface soil samples from Landfill 3 (FTMM-3). Of these 23 SVOCs, 13 were detected at concentrations exceeding the soil ESC in at least one sample. Phenanthrene, fluoranthene, pyrene, benzo(*b*)fluoranthene, indeno(1,2,3-*cd)*pyrene, dibenzo(*a,h*)anthracene, and benzo(*g,h,i*)perylene were detected exceeding the ESC in one soil sample each; most of these exceedances occurred in the same soil sample. In addition, benzo(*a*)anthracene, naphthalene, and chrysene were detected in several soil samples at concentrations exceeding the ESC. Benzo(*a*)pyrene was detected at concentrations exceeding the ESC in more than 10% of the soil samples. Bis(2-ethylhexyl) phthalate and di-*n*-butyl phthalate were also detected at concentrations greater than the ESC. As noted elsewhere, phthalates are commonly found in field and laboratory QC samples, and these phthalates are not considered COPECs. Benzo(*a*)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(*g,h,i*)perylene, chrysene, dibenzo(*a,h*)anthracene, fluoranthene, indeno(1,2,3-*cd*)pyrene, naphthalene, phenanthrene, and pyrene are considered COPECs in soil at Landfill 3 (FTMM-3).

Pesticides. Ten pesticides were detected in near surface soil samples from Landfill 3 (FTMM-3). Nine of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the samples and the majority of the concentrations exceeded the 0.0035 mg/kg ESC. 4,4′-DDD was detected in two samples at concentrations that were greater than the 0.758 mg/kg ESC. 4,4′-DDE, dieldrin, and gamma-BHC were detected in several samples at

concentrations that were exceeding the ESC. Endrin was detected in one sample at a concentration above the 0.0101 mg/kg ESC. Heptachlor was detected in one sample at a concentration above the 0.00598 mg/kg ESC. Gamma- and alpha-chlordane were detected in two samples each above the 0.224 mg/kg chlordane ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, endrin, gamma-BHC, alpha-chlordane, gamma-chlordane, and heptachlor are considered COPECs at Landfill 3 (FTMM-3).

PCBs. One PCB Aroclor was detected in near surface soil samples from Landfill 3 (FTMM-3). Aroclor 1260 was detected in six samples. These concentrations were above the 0.371 mg/kg ESC. Aroclor 1260 is considered a COPEC in soil at Landfill 3 (FTMM-3).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 3 (FTMM-3) of which most metals were detected in the majority of the samples. Thallium and silver were detected infrequently, being detected in 2 and 25 samples, respectively; antimony was detected in less than half the samples (102 of 205). Sixteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 3 (FTMM-3). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in soil at Landfill 3 (FTMM-3).

3.4.2.2.2 COPECs for Groundwater at Landfill 3 (FTMM-3)

Eight groundwater monitoring wells at Landfill 3 (FTMM-3) have been monitored for VOCs during the 2008-2009 time period. Lafetra Creek could receive groundwater discharge from Landfill 3 (FTMM-3). Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-2**.

VOCs. A total of 11 VOCs were detected in groundwater samples from Landfill 3 (FTMM-3) during the 2008-2009 time period. None of the detected VOCs were at concentrations greater than the applicable saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 3 (FTMM-3).

3.4.2.2.3 COPECs for Surface Water at Landfill 3 (FTMM-3)

Two surface water samples were collected from Lafetra Creek adjacent to Landfill 3 (FTMM-3) as part of the 2010 BEE. Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-9**.

VOCs. No VOCs were detected in surface water samples at Landfill 3 (FTMM-3). VOCs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

SVOCs. No SVOCs were detected in surface water samples at Landfill 3 (FTMM-3). SVOCs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

Pesticides. No pesticides were detected in surface water samples at Landfill 3 (FTMM-3). Pesticides are not considered COPECs in surface water at Landfill 3 (FTMM-3).

PCBs. No PCBs were detected in surface water samples at Landfill 3 (FTMM-3). PCBs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

Metals. A total of 13 metals were detected in surface water samples at Landfill 3 (FTMM-3). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 3 (FTMM-3).

3.4.2.2.4 COPECs for Sediment at Landfill 3 (FTMM-3)

Twelve sediment samples (including one duplicate sample) were collected from Lafetra Creek adjacent to Landfill 3 (FTMM-3) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways. Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-10**.

VOCs. A total of seven VOCs were detected in sediment samples at Landfill 3 (FTMM-3). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 3 (FTMM-3).

PCBs. No PCBs were detected in sediment samples at Landfill 3 (FTMM-3). PCBs are not considered COPECs at Landfill 3 (FTMM-3).

Pesticides. Three pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in one or two sediment samples each at Landfill 3 (FTMM-3). Only one sample had concentrations exceeding the ESC. Sample M3-SD10 had a concentration of 0.0095 mg/kg 4,4′-DDD, which is greater than the saltwater sediment ESC (0.002 mg/kg) and a concentration of 0.18 mg/kg 4,4′-DDT, which is greater than the saltwater sediment ESC (0.001 mg/kg). 4,4′-DDD and 4,4′-DDT are considered COPECs in sediment at Landfill 3 (FTMM-3).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 3 (FTMM-3). Of the 15 detected SVOCs, one was detected in one sediment sample at a concentration greater than the saltwater ESC. Bis(2-ethylhexyl) phthalate was detected in one sediment sample at a concentration (5.5 mg/kg) exceeding the saltwater sediment ESC of 0.18216 mg/kg. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 3 (FTMM-3).

Metals. Of the 23 metals detected in sediment at Landfill 3 (FTMM-3), 13 (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc) were detected in at least one sample at concentrations greater than the saltwater sediment ESC and are considered COPECs in sediment at Landfill 3 (FTMM-3).

3.4.2.2.5 Summary of COPECs for Landfill 3 (FTMM-3)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 3 (FTMM-3) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 3 (FTMM-3), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 3 (FTMM-3) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Gamma-BHC alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin Heptachlor	Not Applicable	None	DDD DDT
PCBs			
Aroclor 1260	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*b*)fluoranthene Benzo(*g,h,i*)perylene Chrysene Dibenzo(*a,h*)anthracene Fluoranthene Indeno(1,2,3-*cd*)pyrene	Not Applicable	None	None

Soil	Groundwater	Surface Water	Sediment
Naphthalene Phenanthrene Pyrene			
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.3 LANDFILL 4 (FTMM-4)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 4 (FTMM-4).

3.4.2.3.1 COPECs for Soil at Landfill 4 (FTMM-4)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 4 (FTMM-4) as part of the IRP RI investigation (Versar, 2004b). A total of 63 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-3**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Landfill 4 (FTMM-4). Of these 22 SVOCs, three were detected at concentrations exceeding the soil ESC in at least one sample. Bis(2-ethylhexyl) phthalate was detected frequently and several samples had concentrations that were greater than the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC. Benzo(*a*)pyrene was detected in more than half of the 63 samples and two samples had concentrations (3.5 and 1.6 mg/kg) greater than the 1.52 mg/kg ESC. Naphthalene was detected in four samples at concentrations exceeding the 0.0994 mg/kg ESC. Benzo(*a*)pyrene and naphthalene are considered COPECs in soil at Landfill 4 (FTMM-4).

Pesticides. Four pesticides were detected in near surface soil samples from Landfill 4 (FTMM-4). Three of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 63 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected in one sample at a concentration that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in three samples at concentrations that were greater than the 0.596 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs at Landfill 4 (FTMM-4).

PCBs. No PCBs were detected in near surface soil samples from Landfill 4 (FTMM-4). PCBs are not considered COPECs in soil at Landfill 4 (FTMM-4).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 4 (FTMM-4) of which most metals were detected in the majority of the samples. Cadmium, thallium, selenium, and silver were detected infrequently. Thallium and selenium were detected in one sample each, cadmium was detected in four samples, and selenium was detected in 13 samples. Sixteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like

iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 4 (FTMM-4). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 4 (FTMM-4).

3.4.2.3.2 COPECs for Groundwater at Landfill 4 (FTMM-4)

Four monitoring wells at Landfill 4 (FTMM-4) have been monitored for metals during the 2008-2009 time period. Sampling for SVOCs, pesticides, PCBs, and VOCs was discontinued after the October 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, PCBs, and VOCs are not considered COPECs in groundwater at Landfill 4 (FTMM-4). Mill Creek could receive groundwater discharge from Landfill 4 (FTMM-4). Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-3**.

Metals. A total of 12 metals were detected in groundwater samples from Landfill 4 (FTMM-4) during the 2008-2009 time period. Of these 12, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic was detected at concentrations greater than the saltwater ESC in three monitoring wells. Selenium was detected at concentrations greater than the saltwater ESC in two wells. Cadmium, copper, and lead were detected at concentrations exceeding the saltwater ESC in one sample each. Arsenic, cadmium, copper, lead, and selenium are considered COPECs in groundwater at Landfill 4 (FTMM-4).

3.4.2.3.3 COPECs for Surface Water at Landfill 4 (FTMM-4)

One surface water sample was collected from Mill Creek adjacent to Landfill 4 (FTMM-4) as part of the 2010 BEE. One sample was collected downstream of the storm water outfall at the northern end of Landfill 4 (FTMM-4) and the other sample was collected downstream of the storm water outfall at the southern end of Landfill 4 (FTMM-4) (**Appendix K**). Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-11**.

PCBs. No PCBs were detected in surface water samples at Landfill 4 (FTMM-4). PCBs are not considered COPECs in surface water at Landfill 4 (FTMM-4).

Pesticides. No pesticides were detected in surface water samples at Landfill 4 (FTMM-4). Pesticides are not considered COPECs in surface water at Landfill 4 (FTMM-4).

VOCs. Two VOCs were detected in the surface water sample. PCE (0.6 µg/L) and *cis*-1,2-dichloroethene (1.1 µg/L) were detected at concentrations less than the ESC. VOCs are not considered COPECs in surface water at Landfill 4 (FTMM-4).

SVOCs. Four SVOCs were detected in the surface water sample. There are no saltwater ESC four these SVOCs; they are not considered COPECs in surface water at Landfill 4 (FTMM-4).

Metals. A total of 12 metals were detected in the surface water sample at Landfill 4 (FTMM-4). None of these were detected at concentrations greater than the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 4 (FTMM-4).

3.4.2.3.4 COPECs for Sediment at Landfill 4 (FTMM-4)

Six sediment samples were collected from Mill Creek adjacent to Landfill 4 (FTMM-4) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek in the vicinity of Landfill 4 (FTMM-4) from the surrounding areas including Buildings 689, 1123, and 1221. Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the sediment samples are presented in **Table D-12**.

VOCs. A total of two VOCs (acetone and methylene chloride) were detected in sediment samples at Landfill 4 (FTMM-4). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 4 (FTMM-4).

PCBs. Three PCB mixtures (Aroclor 1232, Aroclor 1242, and Aroclor 1260) were detected in at least one sediment sample each from Landfill 4 (FTMM-4); all were detected at concentrations greater than the saltwater sediment ESC in at least one sample. Aroclor 1232 was detected in one sample (0.093 mg/kg) and Aroclor 1242 was detected in two samples (0.055 mg/kg and 0.075 mg/kg) greater than the ESC for PCBs in saltwater sediment of 0.023 mg/kg. Aroclor 1260 was detected in five samples (0.010 mg/kg to 0.036 mg/kg) above the 0.005 mg/kg saltwater sediment ESC for Aroclor 1260. These three PCBs are considered COPECs in sediment at Landfill 4 (FTMM-4).

Pesticides. Three pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in one to three sediment samples each at Landfill 4 (FTMM-4). 4,4′-DDD in two samples and 4,4′-DDT in one sample were at concentrations exceeding the saltwater ESC. 4,4′-DDD and 4,4′-DDT are considered COPECs in sediment at Landfill 4 (FTMM-4).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 4 (FTMM-4). Of the 15 detected SVOCs, six were detected in one sediment sample (M4-SD4) at concentrations exceeding the ESC. Acenaphthene (0.12 mg/kg), anthracene (0.15 mg/kg), benzo(*a*)anthracene (0.31 mg/kg), fluoranthene (0.70 mg/kg), fluorene (0.097 mg/kg), and phenanthrene (0.62 mg/kg) were detected above the saltwater sediment ESC at M4-SD4. Acenaphthene, anthracene, benzo(*a*)anthracene, fluoranthene, fluorene, and phenanthrene are considered COPECs in sediment at Landfill 4 (FTMM-4).

Metals. Of the 23 metals detected in sediment at Landfill 4 (FTMM-4), seven (arsenic, cadmium, cobalt, lead, mercury, and selenium) were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic concentration in one sample (10.2 mg/kg), cadmium concentrations in three samples (1.26 to 1.49 mg/kg), cobalt concentrations in four samples (13.9 to 24.6 mg/kg), lead in two samples (52.3 to 65.1 mg/kg), mercury concentrations in three samples (0.188 to 0.257 mg/kg), and selenium concentrations in all six samples (1.63 to 3.67 mg/kg) exceeded the freshwater sediment ESC (8.2, 1.2, 10, 47, 0.15, and 1 mg/kg, respectively). Arsenic, cadmium, lead, mercury, nickel, and selenium are considered COPECs in sediment at Landfill 4 (FTMM-4).

3.4.2.3.5 Summary of COPECs for Landfill 4 (FTMM-4)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 4 (FTMM-4) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 4 (FTMM-4), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and groundwater (though not in sediment), it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 4 (FTMM-4) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
4,4′-DDD 4,4′-DDE 4,4′-DDT	None	None	DDD DDT
PCBs			
None	None	None	Aroclor 1232 Aroclor 1242 Aroclor 1260
SVOCs			
Benzo(*a*)pyrene Naphthalene	None	None	Acenaphthene Anthracene Benzo(a)anthracene Fluoranthene Fluorene

Soil	Groundwater	Surface Water	Sediment
			Phenanthrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Arsenic Cadmium Copper Lead Selenium	None	Arsenic Cadmium Cobalt Lead Mercury Selenium
Possible COPECs			
		Copper	

3.4.2.4 LANDFILL 5 (FTMM-5)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 5 (FTMM-5).

3.4.2.4.1 COPECs for Soil at Landfill 5 (FTMM-5)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 5 (FTMM-5) as part of the IRP RI investigation (Versar, 2004c). A total of 173 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-4**.

SVOCs. A total of 27 SVOCs were detected in near surface soil samples from Landfill 5 (FTMM-5). Of these 27 SVOCs, six were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)anthracene, 2-methylnaphthalene, and chrysene were detected in one or two samples each at concentrations exceeding the ESC. Benzo(*a*)pyrene was detected in eight samples at concentrations exceeding the 1.52 mg/kg ESC. Naphthalene was detected in 16 samples at concentrations exceeding the 0.0994 mg/kg ESC. Bis(2-ethylhexyl) phthalate was detected in two samples at concentrations exceeding the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC. Benzo(a)anthracene, benzo(a)pyrene, 2-methylnaphthalene, naphthalene, and chrysene are considered COPECs in soil at Landfill 5 (FTMM-5).

Pesticides. Twelve pesticides were detected in near surface soil samples from Landfill 5 (FTMM-5). Eight of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected at concentrations that were greater than the 0.0035 mg/kg ESC in about 20% of the samples. 4,4′-DDD was detected in three samples at concentrations that were greater than the 0.758 mg/kg ESC. 4,4′-DDE was detected in five samples at concentrations that were greater than the 0.596 mg/kg ESC. Dieldrin was detected in one sample at a concentration greater than the 0.0049 mg/kg ESC. Endosulfan sulfate was detected in one sample at a concentration greater than the 0.0358 mg/kg ESC. Endrin aldehyde was detected in one sample at a concentration greater than the 0.0105 mg/kg ESC. Heptachlor was detected in one sample at a concentration greater than the 0.00598 mg/kg ESC. Heptachlor epoxide was detected in one sample at a concentration greater than the 0.152 mg/kg ESC. Gamma- and alpha-chlordane were detected in one sample each at concentrations exceeding the 0.224 mg/kg chlordane ESC. alpha-Chlordane, gamma-chlordane, 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, endosulfan sulfate, endrin aldehyde, heptachlor, and heptachlor epoxide are considered COPECs at Landfill 5 (FTMM-5).

PCBs. One PCB mixture (Aroclor 1254) was detected in near surface soil samples from Landfill 5 (FTMM-5). Aroclor 1254 was detected in two samples. One concentration was greater than the 0.371 mg/kg ESC. Aroclor 1254 is considered a COPEC in soil at Landfill 5 (FTMM-5).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 5 (FTMM-5) and most metals were detected in the majority of the samples. Thallium, selenium, and silver were detected infrequently, being detected in 41, 32, and 17 samples, respectively; cadmium was detected in less than half the samples (68 of 173). Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 5 (FTMM-5). Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 5 (FTMM-5).

3.4.2.4.2 COPECs for Groundwater at Landfill 5 (FTMM-5)

Ten groundwater monitoring wells at Landfill 5 (FTMM-5) have been monitored for VOCs during the 2008-2009 time period. Mill Creek could receive groundwater discharge from Landfill 5 (FTMM-5). Mill Creek, in the vicinity of Landfill 5 (FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-4**.

VOCs. A total of six VOCs were detected in groundwater samples from Landfill 5 (FTMM-5) during the 2008-2009 time period. No VOCs were found at concentrations exceeding the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 5 (FTMM-5).

3.4.2.4.3 COPECs for Surface Water at Landfill 5 (FTMM-5)

One surface water sample was collected from Mill Creek adjacent to Landfill 5 (FTMM-5) as part of the 2010 BEE. The surface water sample was collected at an approximate mid-point of Landfill 5 and downstream of potential storm water outfalls located immediately upstream of Landfill 5 (**Appendix K**). Additionally, one surface water sample collected in relation of Landfill 8 (FTMM-8) was collected at the northern end of Landfill 5 just upstream of the confluence of Mill Creek with Lafetra Creek (**Section 3.4.2.5**). Mill Creek, in the vicinity of Landfill 5 (FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-13**.

PCBs. No PCBs were detected in surface water samples at Landfill 5 (FTMM-5). PCBs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

Pesticides. No pesticides were detected in surface water samples at Landfill 5 (FTMM-5). Pesticides are not considered COPECs in surface water at Landfill 5 (FTMM-5).

VOCs. Two VOCs were detected in the surface water sample. PCE (0.69 µg/L) and *cis*-1,2-dichloroethene (0.97 µg/L) were detected at concentrations below the available ESC. VOCs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

SVOCs. Two SVOCs were detected in the surface water sample. None were detected at concentrations exceeding the saltwater ESC. SVOCs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

Metals. A total of 13 metals were detected in the surface water sample at Landfill 5 (FTMM-5). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 5 (FTMM-5).

3.4.2.4.4 COPECs for Sediment at Landfill 5 (FTMM-5)

Seven sediment samples (including one duplicate sample) were collected from Mill Creek adjacent to Landfill 5 (FTMM-5) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways. Mill Creek, in the vicinity of Landfill 5

(FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the sediment samples are presented in **Table D-14**.

VOCs. A total of five VOCs were detected in sediment samples at Landfill 5 (FTMM-5). None were detected at concentrations exceeding the available freshwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 5 (FTMM-5).

PCBs. No PCBs were detected in sediment samples at Landfill 5 (FTMM-5). PCBs are not considered COPECs in sediment at Landfill 5 (FTMM-5).

Pesticides. Four pesticides (alpha-chlordane, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in four sediment samples each at Landfill 5 (FTMM-5). Three of these pesticides, 4,4'-DDD (0.0036 to 0.016 mg/kg), 4,4'-DDE (0.003 to 0.0072 mg/kg), and 4,4'-DDT (0.0011 to 0.0021 mg/kg), were detected in three to four sediment samples at concentrations greater than the saltwater sediment ESC of 0.002 mg/kg for 4,4′-DDD, 0.0022 mg/kg for 4,4′-DDE, and 0.001 mg/kg for 4,4′-DDT. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs in sediment at Landfill 5 (FTMM-5).

SVOCs. A total of 16 SVOCs were detected in surface sediment samples at Landfill 5 (FTMM-5). Of the 16 detected SVOCs, nine were detected in at least one sediment sample at concentrations exceeding the saltwater sediment ESC. Acenaphthylene (0.15 mg/kg), anthracene (0.15 to 0.23 mg/kg), benzo(*a*)anthracene (0.34 mg/kg), fluoranthene (0.67 mg/kg), fluorene (0.27 mg/kg), 2-methylnaphthalene (0.40 mg/kg), naphthalene (0.26 mg/kg), phenanthrene (0.36 and 0.96 mg/kg), and pyrene (0.58 and 0.70 mg/kg) were detected at concentrations exceeding the freshwater sediment ESC. Acenaphthylene, anthracene, benzo(*a*)anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene are considered COPECs in sediment at Landfill 5 (FTMM-5).

Metals. Of the 23 metals detected in sediment at Landfill 5 (FTMM-5), 12 (arsenic, barium, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, vanadium, and zinc) were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic concentrations in three samples (11.0 to 43.5 mg/kg), barium in one sample (50.7 mg/kg), cadmium concentrations in three samples (1.72 to 6.65 mg/kg), chromium in one sample (119 mg/kg), cobalt in one sample (13.3 mg/kg), lead in one sample (62.4 mg/kg), mercury in one sample (0.155 mg/kg), nickel in one sample (27.6 mg/kg), selenium in all seven samples (1.33 to 13.2 mg/kg), silver in one sample (1.29 mg/kg), vanadium in one sample (71.6 mg/kg), and zinc in two samples (150 and 203 mg/kg) exceeded the saltwater sediment ESC (8.2, 48, 1.2, 81, 10, 47, 0.15, 21, 1, 1, 57, and 150 mg/kg, respectively). Arsenic, barium, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 5 (FTMM-5).

3.4.2.4.5 Summary of COPECs for Landfill 5 (FTMM-5)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 5 (FTMM-5) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 5 (FTMM-5), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil (but not in sediment), it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 5 (FTMM-5) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endosulfan sulfate Endrin aldehyde	Not Applicable	None	DDD DDE DDT

Soil	Groundwater	Surface Water	Sediment
Heptachlor Heptachlor epoxide			
PCBs			
Aroclor 1254	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene 2-Methylnaphthalene	Not Applicable	None	Acenaphthylene Anthracene Benzo(*a*)anthracene Fluoranthene Fluorene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.5 LANDFILL 8 (FTMM-8)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 8 (FTMM-8).

3.4.2.5.1 COPECs for Soil at Landfill 8 (FTMM-8)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 8 (FTMM-8) as part of the IRP RI investigation (Versar, 2004d). A total of 291 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-5**.

SVOCs. A total of 35 SVOCs were detected in near surface soil samples from Landfill 8 (FTMM-8). Of these 35 SVOCs, 20 were detected at concentrations exceeding the soil ESC in at least one sample. Twelve of these SVOCs exceeded the soil ESC in the same two or three samples; these were 2,4-dimethylphenol, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(*b*)fluoranthene, benzo(*k*)fluoranthene, indeno(1,2,3-*cd*)pyrene, dibenzo(*a,h*)anthracene, and benzo(*g,h,i*)perylene. Benzo(*a*)anthracene, chrysene, benzo(*a*)pyrene, and 2-methylnaphthalene were detected exceeding the ESC in less than 5 percent of the soil samples and naphthalene was detected above the ESC in about 10% of the soil samples. The highest concentrations of these four PAHs were detected in the same three samples as the exceedances of the other PAH ESC. Hexachlorobenzene was detected in one sample at a concentration greater than the 0.199 mg/kg ESC. Butyl benzyl phthalate and bis(2-ethylhexyl) phthalate were detected in several samples at concentrations exceeding the ESC of 0.239 and 0.925 mg/kg, respectively. As noted elsewhere, phthalates are commonly found in field and laboratory QC samples, and phthalates are not considered COPECs. Naphthalene, 2-methylnaphthalene, 2,4-dimethylphenol, acenaphthene, fluorene, phenanthrene, anthracene,

fluoranthene, pyrene, benzo(*b*)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-*cd*)pyrene, dibenzo(a,h)anthracene, benzo(*g,h,i*)perylene, benzo(*a*)anthracene, chrysene, and benzo(*a*)pyrene are considered COPECs in soil at Landfill 8 (FTMM-8).

Pesticides. Ten pesticides were detected in near surface soil samples from Landfill 8 (FTMM-8). Each of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 291 samples and these concentrations greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected at concentrations greater than the 0.758 mg/kg ESC in less than 5 percent of the samples. 4,4′-DDE was detected in one sample at a concentration that was above the 0.596 mg/kg ESC. Dieldrin was detected at concentrations exceeding the 0.049 mg/kg ESC in about 20% of the samples. Endrin, heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and gamma-BHC were detected in one sample each at concentrations that were exceeding the ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and gamma-BHC are considered COPECs at Landfill 8 (FTMM-8).

PCBs. Three PCB Aroclors were detected in near surface soil samples from Landfill 8 (FTMM-8) in less than 5% of the samples and most of these concentrations were exceeding the ESC. Aroclor 1016, Aroclor 1254, and Aroclor 1260 are considered COPECs in soil at Landfill 8 (FTMM-8).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 8 (FTMM-8) of which most metals were detected in the majority of the samples. Thallium was detected infrequently, being detected in only two samples; silver was detected in less than half the samples (83 of 291). Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 8 (FTMM-8). Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 8. (FTMM-8)

3.4.2.5.2 COPECs for Groundwater at Landfill 8 (FTMM-8)

Monitoring for VOCs and pesticides have occurred at 14 groundwater monitoring wells at Landfill 8 (FTMM-8) during the 2008-2009 time period. Sampling for SVOCs, PCBs, and metals was discontinued after the March 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, PCBs, and metals are not considered COPECs in groundwater at Landfill 8 (FTMM-8). Parkers Creek could receive groundwater discharge from Landfill 8 (FTMM-8). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-5**.

VOCs. A total of 15 VOCs were detected in groundwater samples from Landfill 8 (FTMM-8) during the 2008-2009 time period. None of these were detected in concentrations that exceeded the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 8 (FTMM-8).

Pesticides. A total of 12 pesticides were detected in groundwater samples from Landfill 8 (FTMM-8) during the 2008-2009 time period. Eight of these (alpha- and gamma-chlordane, 4,4′-DDT, dieldrin, endosulfan I, endrin, heptachlor, and methoxychlor) were detected in concentrations that exceeded the saltwater ESC, and they are considered COPECs in groundwater at Landfill 8 (FTMM-8).

3.4.2.5.3 COPECs for Surface Water at Landfill 8 (FTMM-8)

Three surface water samples were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8) as part of the 2010 BEE. One surface water sample was collected at the upstream end Landfill 8 (FTMM-8), at the northern end of Landfill 5 (FTMM-5), just upstream of the confluence of Mill Creek with Lafetra Creek. The other two samples were collected adjacent to Landfill M-8 on the west and east side near existing groundwater monitoring well locations. Additionally, another surface water sample was collected in relation to Site FTMM-18 (**Section 3.4.2.10**) to the east of Landfill 8 (FTMM-8) and near potential storm water outfalls (**Appendix K**). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-15**.

PCBs. No PCBs were detected in surface water samples at Landfill 8 (FTMM-8). PCBs are not considered COPECs in surface water at Landfill 8.

Pesticides. No pesticides were detected in surface water samples at Landfill 8 (FTMM-8). Pesticides are not considered COPECs in surface water at Landfill 8 (FTMM-8).

VOCs. No VOCs were detected in surface water samples at Landfill 8 (FTMM-8). VOCs are not considered COPECs in surface water at Landfill 8 (FTMM-8).

SVOCs. One SVOC, dimethyl phthalate, was detected in one surface water sample. There are no available ESC for dimethyl phthalate, and it is not considered a COPEC for surface water at Landfill 8 (FTMM-8).

Metals. A total of 14 metals were detected in surface water samples at Landfill 8 (FTMM-8). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 8 (FTMM-8).

3.4.2.5.4 COPECs for Sediment at Landfill 8 (FTMM-8)

Twelve sediment samples (including one duplicate sample) were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Parkers Creek in the vicinity of Landfill 8 (FTMM-8) and Site FTMM-18 (**Section 3.4.2.10**). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-16**.

VOCs. A total of seven VOCs were detected in sediment samples at Landfill 8 (FTMM-8). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 8 (FTMM-8).

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1260) were detected in one or two sediment samples each at Landfill 8 (FTMM-8). Aroclor 1242 was detected at concentrations greater than the saltwater sediment ESC for PCBs in two samples (0.05 and 0.17 mg/kg) and Aroclor 1260 was detected greater than both the saltwater sediment ESC for Aroclor 1260 in one sample (0.011 mg/kg). Aroclor 1242 and Aroclor 1260 are considered COPECs in sediment at Landfill 8 (FTMM-8).

Pesticides. Two pesticides (4,4'-DDD and 4,4'-DDE) were detected in two to three sediment samples each at Landfill 8 (FTMM-8). Three samples had detected concentrations (0.0021 to 0.0033 mg/kg) of 4,4'-DDD exceeding the saltwater sediment ESC. Detected concentrations of 4,4'-DDE were less than the ESC. Therefore, 4,4'-DDD is considered a COPEC in sediment at Landfill 8 (FTMM-8).

SVOCs. A total of nine SVOCs were detected in surface sediment samples at Landfill 8 (FTMM-8). None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Landfill 8 (FTMM-8).

Metals. Of the 23 metals detected in sediment at Landfill 8 (FTMM-8), 14 were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Barium in six samples (59.6 to 103 mg/kg), selenium in all 12 samples (2.64 to 13.8 mg/kg), and vanadium in four samples (60.9 to 99.1 mg/kg) exceeded the saltwater sediment ESC of 48, 1, and 57 mg/kg, respectively. One sample had a concentration of manganese (364 mg/kg) greater than the saltwater sediment ESC (260 mg/kg). Concentrations of the other 10 metals (arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, silver, and zinc) exceeded the saltwater sediment ESC in at least three samples each. Arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 8 (FTMM-8).

3.4.2.5.5 Summary of COPECs for Landfill 8 (FTMM-8)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 8 (FTMM-8) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 8 (FTMM-8), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and sediment, it is considered a possible COPEC in

surface water. The COPECs, and possible COPECs, identified for Landfill 8 (FTMM-8) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
gamma-BHC alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin Heptachlor Heptachlor epoxide	alpha-Chlordane gamma-Chlordane 4,4′-DDT Dieldrin Endrin Endosulfan I Heptachlor Methoxychlor	None	DDD
PCBs			
Aroclor 1016 Aroclor 1254 Aroclor 1260	None	None	Aroclor 1242 Aroclor 1260
SVOCs			
Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*b*)fluoranthene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Hexachlorobenzene Indeno(1,2,3-*cd*)pyrene 2-Methylnaphthalene 2,4-Dimethylphenol Naphthalene Phenanthrene Pyrene	None	None	None
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	None	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.6 LANDFILL 12 (FTMM-12)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 12 (FTMM-12).

3.4.2.6.1 COPECs for Soil at Landfill 12 (FTMM-12)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 12 (FTMM-12) as part of the IRP RI investigation (Versar, 2003). A total of 147 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-6**.

SVOCs. A total of 23 SVOCs were detected in near surface soil samples from Landfill 12 (FTMM-12). Of these 23 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)anthracene was detected in four samples at concentrations exceeding the 5.21 mg/kg ESC. Chrysene was detected in four samples at concentrations exceeding the 4.73 mg/kg ESC. Benzo(*a*)pyrene and naphthalene were detected in several samples at concentrations exceeding the ESC of 1.52 and 0.0994 mg/kg, respectively. Bis(2-ethylhexyl) phthalate was detected in one sample at a concentration greater than the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC. Benzo(*a*)anthracene, benzo(*a*)pyrene, naphthalene, and chrysene are considered COPECs in soil at Landfill 12 (FTMM-12).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill 12 (FTMM-12). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 147 samples and the majority of these samples had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, and dieldrin were detected in a few samples each at concentrations that exceeded the ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, and dieldrin are considered COPECs at Landfill 12 (FTMM-12).

PCBs. No PCBs were detected in near surface soil samples from Landfill 12 (FTMM-12). PCBs are not considered COPECs in soil at Landfill 12 (FTMM-12).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 12 (FTMM-12) of which most metals were detected in the majority of the samples. Thallium and silver were detected infrequently, being detected in only one and 11 samples, respectively. Antimony and selenium were detected in less than half the samples. Fourteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 12 (FTMM-12). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc are considered COPECs in soil at Landfill 12 (FTMM-12).

3.4.2.6.2 COPECs for Groundwater at Landfill 12 (FTMM-12)

Eleven monitoring wells at Landfill 12 (FTMM-12) have been monitored for metals during the 2008-2009 time period. Husky Brook could receive groundwater discharge from Landfill 12 (FTMM-12). Husky Brook, in the vicinity of Landfill 12 (FTMM-12), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-6**.

Metals. A total of 11 metals were detected in groundwater samples from Landfill 12 (FTMM-12) during the 2008-2009 time period. Of these 11, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic, cadmium, copper, nickel, and selenium were detected at concentrations exceeding the saltwater ESC. Arsenic, cadmium, copper, nickel, and selenium are considered COPECs in groundwater at Landfill 12 (FTMM-12).

3.4.2.6.3 COPECs for Surface Water at Landfill 12 (FTMM-12)

Five surface water samples (including a duplicate sample) were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. One surface water sample was collected at the western end of Landfill 12 near a storm water outfall and drainage from Malterer Avenue and surrounding areas. One sample was collected near the confluence with the small

tributary to Husky Brook and a sample related to Parcel 61 (**Section 3.4.2.15**) was collected at the southern end of this tributary near storm water outfalls from the areas to the south. One sample was collected in Husky Brook downstream of all storm water outfalls in the vicinity of Landfill 12 and Landfill 14 (**Appendix K**), and the other sample was collected in Oceanport Creek downstream of both Landfill 12 and Landfill 14. The evaluation of surface water samples is discussed in **Section 3.4.1.6** with respect to Landfill 14 (FTMM-14).

3.4.2.6.4 COPECs for Sediment at Landfill 12 (FTMM-12)

Thirteen sediment samples were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Husky Brook in the vicinity of Landfill 12 and Landfill 14 from the surrounding areas including Building 1075 and Parcel 61 (**Section 3.4.2.15**). The evaluation of sediment samples is discussed in **Section 3.4.1.6** with respect to Landfill 14 (FTMM-14).

3.4.2.6.5 Summary of COPECs for Landfill 12 (FTMM-12)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 12 (FTMM-12) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 12 (FTMM-12), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil, groundwater, and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 12 (FTMM-12) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin	Not Applicable	None	4,4′-DDD 4,4′-DDE 4,4′-DDT
PCBs			
None	Not Applicable	None	Aroclor 1254
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene	Not Applicable	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Fluorene Fluoranthene Indeno(1,2,3-*cd*)pyrene Phenanthrene Pyrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese	Arsenic Cadmium Copper Nickel Selenium	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Selenium

Soil	Groundwater	Surface Water	Sediment
Mercury Selenium Vanadium Zinc			Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.7 LANDFILL 14 (FTMM-14)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 14 (FTMM-14).

3.4.2.7.1 COPECs for Soil at Landfill 14 (FTMM-14)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 14 (FTMM-14) as part of the IRP RI investigation (Versar, 2004e). A total of 119 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-7**.

SVOCs. A total of 21 SVOCs were detected in near surface soil samples from Landfill 14 (FTMM-14). Of these 21 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Phenanthrene was detected in one sample at a concentration above the ESC of 45.7 mg/kg. Naphthalene was detected in six samples at concentrations that were greater than the 0.0994 mg/kg ESC. Benzo(*a*)anthracene and chrysene were detected at concentrations exceeding the soil ESC in the same two samples. Benzo(*a*)pyrene was detected in five samples at concentrations exceeding the 1.52 mg/kg ESC. The highest concentrations of these PAHs were detected in the same soil sample. Benzo(*a*)pyrene, benzo(*a*)anthracene, chrysene, naphthalene, and phenanthrene are considered COPECs in soil at Landfill 14 (FTMM-14).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill 14 (FTMM-14). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 116 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected in one sample at a concentration that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in two samples at concentrations that were greater than the 0.596 mg/kg ESC. Dieldrin was detected in one sample at a concentration that exceeded the 0.049 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, and dieldrin are considered COPECs at Landfill 14 (FTMM-14).

PCBs. No PCBs were detected in near surface soil samples from Landfill 14 (FTMM-14). PCBs are not considered COPECs in soil at Landfill 14 (FTMM-14).

Metals. A total of 22 metals were detected in near surface soil samples from Landfill 14 (FTMM-14) of which most metals were detected in the majority of the samples. Silver was detected infrequently, being detected in only two samples. Thirteen metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 14 (FTMM-14). Antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, vanadium, and zinc are considered COPECs in soil at Landfill 14 (FTMM-14).

3.4.2.7.2 COPECs for Groundwater at Landfill 14 (FTMM-14)

Monitoring for VOCs and metals have occurred at six groundwater monitoring wells at Landfill 14 (FTMM-14) during the 2008-2009 time period. Sampling for SVOCs was discontinued after the August 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs are not considered COPECs in groundwater at Landfill 14 (FTMM-14). Husky Brook could receive groundwater discharge from Landfill 14 (FTMM-14). Husky Brook, in the vicinity of Landfill 14 (FTMM-14), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-7**.

VOCs. A total of three VOCs were detected in groundwater samples from Landfill 14 (FTMM-14) during the 2008-2009 time period. None of these were detected in concentrations that exceeded the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 14 (FTMM-14).

Metals. A total of 11 metals were detected in groundwater samples from Landfill 14 (FTMM-14) during the 2008-2009 time period. Of these 11, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic, cadmium, copper, nickel, and selenium were detected at concentrations exceeding the saltwater ESC. Arsenic, cadmium, copper, nickel, and selenium are considered COPECs in groundwater at Landfill 14 (FTMM-14).

3.4.2.7.3 COPECs for Surface Water at Landfill 14 (FTMM-14)

Five surface water samples (including a duplicate sample) were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. One surface water sample was collected at the western end of Landfill 14 near a storm water outfall and drainage from Malterer Avenue and surrounding areas. One sample was collected near the confluence with the small tributary to Husky Brook and a sample related to Parcel 61 (**Section 3.4.2.15**) was collected at the southern end of this tributary near storm water outfalls from the areas to the south (**Appendix K**). One sample was collected in Husky Brook downstream of all storm water outfalls in the vicinity of Landfill 12 and Landfill 14, and the other sample was collected in Oceanport Creek downstream of both Landfill 12 and Landfill 14. Husky Brook, in the vicinity of Landfill 12 (FTMM-12), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-17**.

PCBs. No PCBs were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). PCBs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Pesticides. No pesticides were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Pesticides are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

VOCs. Two VOCs, chloroform and *cis*-1,2-dichloroethene, were detected in surface water samples but none were detected at concentrations exceeding the available saltwater ESC. VOCs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

SVOCs. Five SVOCs [anthracene, benzo(*a*)anthracene, benzo(a)pyrene, 3,3′-dichlorobenzidine, and 1,2,4-trichlorobenzene] were detected in surface water samples. There are no saltwater ESC for the detected SVOCs. SVOCs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Metals. A total of 14 metals were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

3.4.2.7.4 COPECs for Sediment at Landfill 14 (FTMM-14)

Thirteen sediment samples were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14), is classified as saline estuarine (**Section 2.4.3**). Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Husky Brook in the vicinity of Landfill 12 and Landfill 14 from the surrounding areas including Building 1075 and Parcel 61 (**Section 3.4.2.15**). Parameters detected in sediment samples are presented in **Table D-18**.

VOCs. A total of four VOCs were detected in sediment samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

PCBs. One PCB mixture (Aroclor 1254) was detected in one sediment sample at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Aroclor 1254 was detected at a concentration greater than the

saltwater sediment ESC in one sample (0.23 mg/kg). Aroclor 1254 is considered a COPEC in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Pesticides. Four pesticides (alpha-chlordane, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in 4 to 10 sediment samples each at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). alpha-Chlordane concentrations did not exceed the saltwater sediment ESC. Nine samples had 4,4'-DDD concentrations (0.0031 to 0.0091 mg/kg) greater than the saltwater sediment ESC (0.002 mg/kg). Seven samples had 4,4'-DDE concentrations (0.0025 to 0.0071 mg/kg) greater than the saltwater sediment ESC (0.0022 mg/kg). Four samples had 4,4'-DDT concentrations (0.0014 to 0.013 mg/kg) greater than the saltwater sediment ESC (0.001 mg/kg). Therefore, 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Bis(2-ethylhexyl) phthalate was detected in one sediment sample; the concentration (0.84 mg/kg) was greater than the saltwater sediment ESC (0.18216 mg/kg). As noted previously, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Twelve PAHs were detected at concentrations exceeding the saltwater ESC in one to six samples each. These 12 PAHs, acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, phenanthrene, and pyrene, are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Metals. Of the 22 metals detected in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14), 12 were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Barium in one sample (54.0 mg/kg), selenium in 10 samples (1.04 to 5.99 mg/kg), and vanadium in one sample (61.1 mg/kg) exceeded the saltwater sediment ESC of 48, 1, and 57 mg/kg, respectively. One sample had a concentration of cobalt (13.7 mg/kg) greater than the saltwater sediment ESC (10 mg/kg). Concentrations of the other seven metals (arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc) exceeded saltwater ESC in one or two samples each. Arsenic, barium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

3.4.2.7.5 Summary of COPECs for Landfill 14 (FTMM-14)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 14 (FTMM-14) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 14 (FTMM-14), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil, groundwater, and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 14 (FTMM-14) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin	Not Applicable	None	4,4′-DDD 4,4′-DDE 4,4′-DDT
PCBs			
None	Not Applicable	None	Aroclor 1254
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene Phenanthrene	None	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,*i)perylene Benzo(*k*)fluoranthene

Soil	Groundwater	Surface Water	Sediment
			Chrysene Fluoranthene Fluorene Indeno(1,2,3-*cd*)pyrene Phenanthrene Pyrene
Metals			
Antimony Arsenic Cadmium Chromium Copper Lead Manganese Mercury Nickel Selenium Vanadium Zinc	Arsenic Cadmium Copper Nickel Selenium	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.8 WATER TANK (FTMM-15)

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the water tank at Site FTMM-15.

3.4.2.8.1 COPECs for Surface Water at Site FTMM-15

Three surface water samples were collected from Parkers Creek in relation to Site FTMM-15 as part of the 2010 BEE. Parkers Creek could receive groundwater discharge from Site FTMM-15. Parkers Creek, in the vicinity of Site FTMM-15, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-19**.

VOCs. No VOCs were detected in surface water samples at Site FTMM-15. VOCs are not considered COPECs in surface water at Site FTMM-15.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-15. Pesticides are not considered COPECs in surface water at Site FTMM-15.

PCBs. No PCBs were detected in surface water samples at Site FTMM-15. PCBs are not considered COPECs in surface water at Site FTMM-15.

SVOCs. Two SVOCs [anthracene and benzo(*a*)anthracene] were detected in surface water samples. There are no available saltwater ESC for the detected SVOCs. PAHs are not considered COPECs in surface water at Site FTMM-15.

Metals. A total of 15 metals were detected in surface water samples at Site FTMM-15. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Site FTMM-15.

3.4.2.8.2 COPECs for Sediment at Site FTMM-15

Four sediment samples were collected from Parkers Creek adjacent to Site FTMM-15 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-15, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-20**.

VOCs. A total of five VOCs were detected in sediment samples at Site FTMM-15. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-15.

PCBs. No PCBs were detected in sediment samples at Site FTMM-15. PCBs are not considered COPECs in sediment at Site FTMM-15.

Pesticides. One pesticide (4,4'-DDT) was detected in one sediment sample at Site FTMM-15. The detected concentration (0.0041 mg/kg) exceeded the saltwater sediment ESC (0.001 mg/kg). 4,4'-DDT is considered a COPEC in sediment at Site FTMM-15.

SVOCs. A total of six SVOCs were detected in surface sediment samples at Site FTMM-15. None of these were detected at concentrations exceeding the saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-15.

Metals. A total of 23 metals were detected in sediment at Site FTMM-15. Of these 23 metals, nine were detected in at least one sample at concentrations exceeding the applicable saltwater sediment ESC. Chromium was detected in one sample at a concentration (95.5 mg/kg) greater than the ESC (81 mg/kg). Vanadium was detected in one sample at a concentration (83.2 mg/kg) greater than the ESC (57 mg/kg). Lead was detected in two samples at concentrations (59.7 and 108 mg/kg) greater than the ESC (47 mg/kg). Zinc was detected in two samples at concentrations (178 and 262 mg/kg) greater than the ESC (150 mg/kg). Arsenic was detected in three samples at concentrations (10.6 to 14.9 mg/kg) greater than the ESC (8.2 mg/kg). Mercury was detected in three samples at concentrations (0.16 to 0.293 mg/kg) greater than the ESC (0.15 mg/kg). Silver was detected in three samples at concentrations (1.25 to 1.44 mg/kg) greater than the ESC (1 mg/kg). All four samples had cadmium concentrations (1.31 to 2.97 mg/kg) and selenium concentrations (3.79 to 6.98 mg/kg) exceeding the ESC of 1.2 mg/kg for cadmium and 1 mg/kg for selenium. Arsenic, cadmium, chromium, lead, mercury, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-15.

3.4.2.8.3 Summary of COPECs for Site FTMM-15

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-15 at concentrations greater than the applicable ESC were identified as COPECs for the site. Copper was not detected in surface water at Site FTMM-15 and its MDLs were greater than the saltwater ESC. However, since copper was not identified as a COPEC in other site media, it is not considered a COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-15 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	DDT
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	None
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Lead Mercury Selenium Silver Vanadium Zinc

3.4.2.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the Pesticide Storage, Building 498, at Site FTMM-16. No recent groundwater data is available for evaluation at Site FTMM-16.

3.4.2.9.1 COPECs for Surface Water at Site FTMM-16

Three surface water samples were collected from Oceanport Creek in relation to Site FTMM-16 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Site FTMM-16, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-21**.

VOCs. No VOCs were detected in surface water samples at Site FTMM-16. VOCs are not considered COPECs in surface water at Site FTMM-16.

SVOCs. No SVOCs were detected in surface water samples at Site FTMM-16. SVOCs are not considered COPECs in surface water at Site FTMM-16.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-16. Pesticides are not considered COPECs in surface water at Site FTMM-16.

PCBs. No PCBs were detected in surface water samples at Site FTMM-16. PCBs are not considered COPECs in surface water at Site FTMM-16.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-16. Metals are not considered COPECs for surface water at Site FTMM-16.

3.4.2.9.2 COPECs for Sediment at Site FTMM-16

Five sediment samples (including one duplicate sample) were collected from Oceanport Creek adjacent to Site FTMM-16 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Site FTMM-16, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-22**.

VOCs. A total of six VOCs were detected in sediment samples at Site FTMM-16. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-16.

PCBs. No PCBs were detected in sediment samples at Site FTMM-16. PCBs are not considered COPECs in sediment at Site FTMM-16.

Pesticides. One pesticide (4,4'-DDD) was detected in one sediment sample at Site FTMM-16. The detected concentration (0.0014 mg/kg) was not above the saltwater sediment ESC (0.002 mg/kg); 4,4'-DDD is not considered a COPEC in sediment at Site FTMM-16.

SVOCs. A total of seven SVOCs were detected in surface sediment samples at Site FTMM-16. Only one, hexachlorobutadiene, was detected in one sample at a concentration (0.008 mg/kg) greater than the saltwater sediment ESC (0.0013 mg/kg). Hexachlorobutadiene is considered a COPEC in sediment at Site FTMM-16.

Metals. A total of 23 metals were detected in sediment at Site FTMM-16. Of these 23 metals, 12 were detected in three or four samples each at concentrations exceeding the applicable saltwater sediment ESC. Arsenic was detected in four samples at concentrations (15.1 to 24.5 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in four samples at concentrations (9.71 to 12.3 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in four samples at concentrations (117 to 144 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in three samples at concentrations (12.5 to 13.6 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in four samples at concentrations (42.3 to 124 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in four samples at concentrations (74.5 to 212 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in three samples at concentrations (0.451 to 0.502 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in three samples at concentrations (30.7 to 35.2 mg/kg) greater than the ESC (21 mg/kg). Selenium was detected in four samples at concentrations (5.32 to 11.0 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in four samples at concentrations (3.78 to 6.44 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in three samples at concentrations (81.9 to 106 mg/kg) greater than the ESC (57 mg/kg). Zinc was detected in four samples at concentrations (160 to 500 mg/kg) greater than the ESC (150 mg/kg). Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-16.

3.4.2.9.3 Summary of COPECs for Site M-16

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-15 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-16, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-16 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	Hexachlorobutadiene
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Site FTMM-18.

3.4.2.10.1 COPECs for Soil at Site FTMM-18

Near surface (6-12 inches bgs) soil samples were collected from Site FTMM-18 as part of the IRP RI investigation (Versar, 2004f). A total of 62 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-8**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Site FTMM-18. Of these 22 SVOCs, two were detected at concentrations exceeding the soil ESC: benzo(a)pyrene was detected in two samples at concentrations exceeding the 1.52 mg/kg ESC and naphthalene was detected in five samples at concentrations exceeding the 0.0994 mg/kg ESC. Benzo(a)pyrene and naphthalene are considered COPECs in soil at Site FTMM-18.

Pesticides. Nine pesticides were detected in near surface soil samples from Site FTMM-18. Two of these pesticides was detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in several samples at concentrations that were greater than the 0.0035 mg/kg ESC and endrin aldehyde were detected in a sample at concentrations exceeding the ESC. 4,4′-DDT and endrin aldehyde are considered COPECs at Site FTMM-18.

PCBs. No PCBs were detected in near surface soil samples from Site FTMM-18. PCBs are not considered COPECs in soil at Site FTMM-18.

Metals. A total of 22 metals were detected in near surface soil samples from Site FTMM-18 of which most metals were detected in the majority of the samples. Silver was detected infrequently, being detected in only five samples. Twelve metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Site FTMM-18. Antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, vanadium, and zinc are considered COPECs in soil at Site FTMM-18.

3.4.2.10.2 COPECs for Groundwater at Site FTMM-18

Monitoring for VOCs and metals have occurred at three groundwater monitoring wells at Site FTMM-18 during the 2008-2009 time period. Sampling for SVOCs, pesticides, and PCBs was discontinued after the November 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, and PCBs are not considered COPECs in groundwater at Site FTMM-18. Parkers Creek could receive groundwater discharge from Site FTMM-18. Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-8**.

VOCs. One VOC, acetone, was detected in groundwater samples from Site FTMM-18 during the 2008-2009 time period. There are no freshwater or saltwater ESC available for acetone. VOCs are not considered COPECs in groundwater at Site FTMM-18.

Metals. A total of 12 metals were detected in groundwater samples from Site FTMM-18 during the 2008-2009 time period. Four of these metals (arsenic, copper, selenium, and cadmium) were detected at concentrations that exceeded the saltwater ESC. Arsenic, cadmium, copper, and selenium are considered COPECs in groundwater at Site FTMM-18.

3.4.2.10.3 COPECs for Surface Water at Site FTMM-18

Two surface water samples were collected from Parkers Creek adjacent to Site FTMM-18 as part of the 2010 BEE. One surface water sample was collected west of Site FTMM-18 between outfalls between Site FTMM-8 and FTMM-18 (**Appendix K**), and the other sample was collected on the western side of Site FTMM-18 downstream of these two outfalls. Additionally, two surface water samples were collected in relation to Building 283 (FTMM-61) and Parcel 49 (**Section 3.4.2.14**) near storm water outfalls at the eastern end of Site FTMM-18 (**Appendix K**). Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-23**.

PCBs. No PCBs were detected in surface water samples at Site FTMM-18. PCBs are not considered COPECs in surface water at Site FTMM-18.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-18. Pesticides are not considered COPECs in surface water at Site FTMM-18.

VOCs. No VOCs were detected in surface water samples at Site FTMM-18. VOCs are not considered COPECs in surface water at Site FTMM-18.

SVOCs. No SVOCs were detected in surface water samples at Site FTMM-18. SVOCs are not considered COPECs in surface water at Site FTMM-18.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-18. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs in surface water at Site FTMM-18.

3.4.2.10.4 COPECs for Sediment at Site FTMM-18

Five sediment samples were collected from Parkers Creek adjacent to Site FTMM-18 as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Parkers Creek in the vicinity of Site FTMM-18 from the surrounding areas including Buildings 291 to 296 and Building 283 (FTMM-61) in

Parcel 49 (**Section 3.4.2.14**). Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-24**.

PCBs. No PCBs were detected in sediment samples at Site FTMM-18. PCBs are not considered COPECs at Site FTMM-18.

Pesticides. No pesticides were detected in sediment samples at Site FTMM-18. Pesticides are not considered COPECs at Site FTMM-18.

VOCs. A total of three VOCs were detected in sediment samples at Site FTMM-18. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-18.

SVOCs. Four SVOCs were detected in surface sediment samples at Site FTMM-18. None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-18.

Metals. Of the 23 metals detected in sediment at Site FTMM-18, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Arsenic was detected in two samples at concentrations (11.9 and 22.8 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in four samples at concentrations (3.38 to 5.65 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in three samples at concentrations (84.6 to 132 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in two samples at concentrations (11.6 and 56 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in one sample at a concentration (82.9 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in two samples at concentrations (67.7 and 166 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in three samples at concentrations (0.591 to 0.669 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in two samples at concentrations (22.3 to 45.1 mg/kg) greater than the ESC (21 mg/kg). Selenium was detected in five samples at concentrations (2.47 to 12.3 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in two samples at concentrations (26.1 to 27.9 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in one sample at a concentration (63 mg/kg) which exceeds the ESC (57 mg/kg). Zinc was detected in three samples at concentrations (187 to 358 mg/kg) greater than the ESC (150 mg/kg). Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-18.

3.4.2.10.5 Summary of COPECs for Site FTMM-18

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-18 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-18, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil, groundwater, and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-18 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
4,4′-DDT Endrin aldehyde	None	None	None
PCBs			
None	None	None	None
SVOCs			
Benzo(a)pyrene Naphthalene	None	None	None
Metals			
Antimony Arsenic Cadmium Chromium	Arsenic Cadmium Copper Selenium	None	Arsenic Cadmium Chromium Cobalt

Soil	Groundwater	Surface Water	Sediment
Copper Lead Mercury Selenium Silver Vanadium Zinc			Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT, FTMM-20

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the Pre-1941 Former Sanitary STP, Site FTMM-20.

3.4.2.11.1 COPECs for Surface Water at the Pre-1941 Former Sanitary STP FTMM-20

Two surface water samples were collected from Parkers Creek adjacent to Site FTMM-20 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-20, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-25**.

PCBs. No PCBs were detected in surface water samples at Site FTMM-20. PCBs are not considered COPECs in surface water at Site FTMM-20.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-20. Pesticides are not considered COPECs in surface water at Site FTMM-20.

VOCs. No VOCs were detected in surface water samples at Site FTMM-20. VOCs are not considered COPECs in surface water at Site FTMM-20.

SVOCs. One SVOC, dimethyl phthalate was detected in the surface water samples at Site FTMM-20. There are no surface water ESC for dimethyl phthalate. SVOCs are not considered COPECs in surface water at Site FTMM-20.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-20. Parkers Creek, in the vicinity of Site FTMM-20, is saline. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Site FTMM-20.

3.4.2.11.2 COPECs for Sediment at the Pre-1941 Former Sanitary STP FTMM-20

Two sediment samples were collected from Parkers Creek adjacent to Site FTMM-20 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-20, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-26**.

PCBs. No PCBs were detected in sediment samples at Site FTMM-20. PCBs are not considered COPECs at Site FTMM-20.

Pesticides. No pesticides were detected in sediment samples at Site FTMM-20. Pesticides are not considered COPECs at Site FTMM-20.

VOCs. A total of two VOCs were detected in sediment samples at Site FTMM-20. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-20.

SVOCs. Four SVOCs were detected in surface sediment samples at Site FTMM-20. None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-20.

Metals. Of the 23 metals detected in sediment at Site FTMM-20, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Arsenic

was detected in both samples at concentrations (9.36 and 23.8 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in both samples at concentrations (1.31 to 2.87 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in one sample at a concentration (99.4 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in one sample at a concentration (11.4 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in one sample at a concentration (71.2 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in one sample at a concentration (59.4 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in one sample at a concentration (0.322 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in one sample at a concentration (21.6 mg/kg) marginally greater than the ESC (21 mg/kg). Selenium was detected in both samples at concentrations (4.04 and 6.86 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in both samples at concentrations (1.35 and 8.07 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in one sample at a concentration (60.9 mg/kg) greater than the ESC (57 mg/kg). Zinc was detected in one sample at a concentration (184 mg/kg) greater than the ESC (150 mg/kg). Though Parkers Creek is tidal in the vicinity of Site M-20, the greatest concentrations of these metals were detected in the upstream sample and the lower concentrations were detected in the downstream sample. Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-20.

3.4.2.11.3 Summary of COPECs for Site FTMM-20

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-20 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-20, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-20 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	None
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43)

Groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 1122, ECP Parcel 43.

3.4.2.12.1 COPECs for Groundwater at Building 1122, FTMM-59 (ECP Parcel 43)

Five groundwater monitoring wells were monitoring for VOCs during the 2008-2009 time period. Sampling for SVOCs, pesticides, PCBs, and metals was discontinued after the October 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, PCBs, and metals are not considered COPECs in groundwater at Building 1122, FTMM-59 and Parcel 43. Mill Creek could receive groundwater discharge at Building 1122, Site FTMM-59 and Parcel 43. Mill Creek, in the vicinity of Building 1122, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-9**.

VOCs. Six VOCs were detected in groundwater samples during the 20008-2009 period. None of the detected VOCs were at concentrations greater than the applicable freshwater ESC. VOCs are not considered COPECs for groundwater at Building 1122, FTMM-59 and Parcel 43.

3.4.2.12.2 COPECs for Surface Water at Building 1122, FTMM-59 (ECP Parcel 43)

Two surface water samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43 as part of the 2010 BEE. One surface water sample was collected in Mill Creek to the east of Building 1122 at a storm water outfall, and the other sample was collected in Mill Creek at a point closest to Building 1122. Mill Creek, in the vicinity of Building 1122, FTMM-59 and Parcel 43, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-27**.

PCBs. No PCBs were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43. PCBs are not considered COPECs in surface at Building 1122, FTMM-59 and Parcel 43.

VOCs. Two VOCs (*cis*-1,2-dichloroethene and PCE) were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43 but at concentrations less than the freshwater ESC. VOCs are not considered COPECs in surface at Building 1122, FTMM-59 and Parcel 43.

SVOCs. Six SVOCs, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzoic acid, 3,3′-dichlorobenzidine, and 1,2,4-trichlorobenzene, were detected in the surface water samples at Building 1122, FTMM-59 and Parcel 43. Anthracene, benzo(a)pyrene, and benzo(a)anthracene concentrations exceeded the applicable freshwater ESC. Both anthracene concentrations (0.12 µg/L) exceeded the 0.035 µg/L ESC. One benzo(*a*)pyrene concentration (0.31 µg/L) exceeded the 0.014 µg/L ESC. Benzo(*a*)anthracene concentrations (0.23 and 0.24 µg/L) exceeded the 0.025 µg/L ESC. Anthracene, benzo(*a*)pyrene, and benzo(*a*)anthracene are considered COPECs in surface water at Building 1122.

Metals. A total of 12 metals were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43. Only lead was detected at concentrations greater than the applicable freshwater ESC in the surface water samples. Total lead concentrations (6.8 and 7.76 µg/L) and dissolved lead concentrations (7.2 and 11.5 µg/L) exceeded the 5.4 µg/L freshwater ESC. Lead is considered a COPEC for surface water at Building 1122.

3.4.2.12.3 COPECs for Sediment at Building 1122, FTMM-59 (ECP Parcel 43)

Three surface sediment samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43 as part of the ECP SI (Shaw, 2008). These three sediment sample locations were selected to evaluate historical discharges from Building 1122 based on depositional characteristics and potential contaminant migration pathways and included the storm water outfall to the east of Building 1122 (**Appendix K**) into Mill Creek. Mill Creek, in the vicinity of Building 1122, FTMM-59 and Parcel 43, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-1**.

PCBs. No PCBs were detected in sediment samples at Building 1122, FTMM-59 and Parcel 43. PCBs are not considered COPECs at Building 1122, FTMM-59 and Parcel 43.

VOCs. Two VOCs (acetone and methylene chloride) were detected in sediment samples at Building 1122, FTMM-59 and Parcel 43. None were detected at concentrations exceeding the available freshwater sediment ESC. VOCs are not considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

SVOCs. Eleven SVOCs were detected in surface sediment samples at Building 1122, FTMM-59 and Parcel 43. Eight of the detected SVOCs exceeded the available freshwater sediment ESC. Benzo(*a*)anthracene was detected in all three samples and two concentrations (0.510 and 0.610 mg/kg) exceeding the 0.32 mg/kg freshwater sediment ESC. Benzo(*a*)pyrene was detected in all three samples and two concentrations (0.510 and 0.610 mg/kg) exceeding the 0.37 mg/kg freshwater sediment ESC. Benzo(*k*)fluoranthene was detected in all three samples and two concentrations (0.340 and 0.390 mg/kg) exceeding the 0.24 mg/kg freshwater sediment ESC. Chrysene was detected in all three samples and two concentrations (0.86 and 0.88 mg/kg) exceeding the 0.34 mg/kg freshwater sediment ESC. Fluoranthene was detected in all three samples and two concentrations (1.40 and 1.30 mg/kg) exceeding the 0.75 mg/kg freshwater sediment ESC. Phenanthrene was detected in all three samples and one concentration (0.700 mg/kg) exceeded the 0.56 mg/kg freshwater sediment ESC. Pyrene was detected in all three samples and two concentrations (1.60 and 1.40 mg/kg) exceeded the 0.49 mg/kg freshwater sediment ESC. Bis(2-ethylhexyl) phthalate was detected in all three samples at concentrations from 0.440 mg/kg to 1.40 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Building 1122, FTMM-59 and Parcel 43. Benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

Metals. Of the 18 metals detected in sediment at Building 1122, FTMM-59 and Parcel 43, eight were detected in at least one sediment sample each at concentrations exceeding the applicable freshwater sediment ESC. Arsenic was detected in all three samples and the concentrations (7.48 to 10.2 mg/kg) exceeded the ESC (6 mg/kg). Cadmium was detected in all three samples and two concentrations (1.67 and 1.86 mg/kg) were greater than the ESC (0.6 mg/kg). Chromium was detected in all three samples and the concentrations (155 to 161 mg/kg) exceeded the ESC (26 mg/kg). Copper was detected in all three samples and the concentrations (29.1 to 53.6 mg/kg) were greater than the ESC (16 mg/kg). Lead was detected in all three samples and the concentrations (45.0 to 116 mg/kg) were greater than the ESC (31 mg/kg). Mercury was detected in all three samples and the concentrations (0.25 to 0.47 mg/kg) were greater than the ESC (0.2 mg/kg). Nickel was detected in all three samples and the concentrations (23.7 to 36.4 mg/kg) were greater than the ESC (16 mg/kg). Zinc was detected in all three samples and two concentrations (252 and 286 mg/kg) exceeded the ESC (120 mg/kg). Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc are considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

3.4.2.12.4 Summary of COPECs for Building 1122, FTMM-59 and Parcel 43

Parameters detected in soil, groundwater, surface water, or sediment at Building 1122, FTMM-59 and Parcel 43 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium and silver were not detected in surface water at Building 1122, FTMM-59 and Parcel 43, their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in sediment, it is considered a possible COPEC in surface water. The sediment detection limits for several PAHs [acenaphthene, acenaphthylene, anthracene, dibenzo(*a,h*)anthracene, fluorene, and 2-methylnaphthalene] exceeded the freshwater sediment ESC. Of these, acenaphthene was identified as a COPEC in surface water. Therefore, anthracene is considered a possible COPEC in sediment. The COPECs, and possible COPECs, identified for Building 1122, FTMM-59 and Parcel 43 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	None	None	Not Applicable
PCBs			
Not Applicable	None	None	None
SVOCs			
Not Applicable	None	Anthracene Benzo(a)anthracene Benzo(a)pyrene	Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*k*)fluoranthene

Soil	Groundwater	Surface Water	Sediment
			Chrysene Fluoranthene Phenanthrene Pyrene
Metals			
Not Applicable	None	Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc
Possible COPECs			
		Cadmium	Anthracene

3.4.2.13 BUILDING 1150 (PARCEL 39)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 1150, ECP Parcel 39.

3.4.2.13.1 COPECs for Soil at Building 1150 (ECP Parcel 39)

One surface soil sample was collected as part of the ECP SI (Shaw, 2008). This sample was located at the outfall of a clay pipe leading from the direction of Building 1150. Parameters detected in the surface soil sample are presented in **Table B-2**.

VOCs. No VOCs were detected in the surface soil sample. VOCs are not considered COPECs at Parcel 39.

PCBs. No PCBs were detected in the surface soil sample. PCBs are not considered COPECs at Parcel 39.

SVOCs. Four SVOCs were detected in the surface soil sample at Parcel 39. No SVOCs were found at concentrations exceeding the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 69.

Metals. A total of 18 metals were detected in the surface soil sample. Of these 18, eight were found at concentrations exceeding the soil ESC. The concentration of aluminum (7450 mg/kg) was above the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 39. Cadmium, chromium, cobalt, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 39.

3.4.2.13.2 COPECs for Surface Water at Building 1150 (ECP Parcel 39)

One surface water sample was collected from Mill Creek adjacent to Building 1150 as part of the 2010 BEE; this surface water sample was also adjacent to Landfill 2, which is located south of Building 1150, across Mill Creek from Building 1150, and was collected immediately downstream of a storm water outfall from the area of Building 1150 in Parcel 39. Additionally, another surface water sample was collected downstream of all storm water outfalls from Parcel 39 (**Appendix K**) as part of the Landfill 2 (FTMM-2) sample collections (**Section 3.4.2.1.3**). Mill Creek, in the vicinity of Building 1150, Parcel 39, is classified as freshwater (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-28**.

PCBs. No PCBs were detected in surface water samples at Building 1150. PCBs are not considered COPECs in surface water at Building 1150.

Pesticides. No pesticides were detected in surface water samples at Building 1150. Pesticides are not considered COPECs in surface water at Building 1150.

SVOCs. Three SVOCs, anthracene, benzo(*a*)anthracene, and 1,2,4-trichlorobenzene, were detected in the surface water samples at Building 1150. Anthracene and benzo(*a*)anthracene concentrations exceeded the applicable freshwater ESC. The anthracene concentration (0.11 µg/L) exceeded the 0.035 µg/L ESC and the benzo(*a*)anthracene concentration (0.22 µg/L) exceeded the 0.025 µg/L ESC. Anthracene and benzo(*a*)anthracene are considered COPECs in surface water at Building 1150.

Metals. A total of 12 metals were detected in surface water samples at Building 1150. Mill Creek, in the vicinity of Building 1150, is freshwater. Only lead was detected greater than the applicable freshwater ESC in the surface water sample. The total lead concentration (6.2 µg/L) and the dissolved lead concentration (10.1 µg/L) exceeded the 5.4 µg/L freshwater ESC. Lead is considered a COPEC for surface water at Building 1150.

3.4.2.13.3 COPECs for Sediment at Building 1150 (ECP Parcel 39)

Two surface sediment samples were collected from Mill Creek adjacent to Building 1150 as part of the ECP SI (Shaw, 2008). These were collected from deposition locations immediately downgradient of the drainage basin located immediately behind Building 1150 (**Appendix K**). Additionally, four sediment samples were collected as part of the 2010 BEE for Landfill 2 are adjacent to Building 1150 (**Section 3.4.2.1.3**). These sediment sample locations were based on previous sediment sampling conducted for the RI for Landfill 2 (FTMM-2) and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek from the area of Building 1150 and Parcel 39. Mill Creek, in the vicinity of Building 1150, Parcel 39, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples as part of the ECP SI are presented in **Table B-3** and as part of the BEE are presented in **Table D-29**.

PCBs. One PCB mixture, Aroclor 1254, was detected in 2010 BEE sediment samples at Building 1150. Aroclor 1254 was detected in two samples and one concentration (0.064 mg/kg) exceeded the 0.06 mg/kg freshwater ESC. Aroclor 1254 is considered a COPEC at Building 1150.

VOCs. Three VOCs (acetone, methylene chloride, and 2-butanone) were detected in 2010 BEE sediment samples at Building 1150. None were detected at concentrations exceeding the available freshwater or saltwater sediment ESC. VOCs are not considered COPECs in sediment at Building 1150.

SVOCs. Eight SVOCs were detected in surface sediment samples at Building 1150 during the ECP SI and seven of these [benzo(*a*)anthracene, bis(2-ethylhexyl) phthalate, chrysene, di-*n*-butyl phthalate, fluoranthene, phenanthrene, and pyrene] were detected at concentrations exceeding the freshwater sediment ESC. Though 13 SVOCs were detected in surface sediment samples at Building 1150 during the 2010 BEE, only four of these [bis(2-ethylhexyl) phthalate, chrysene, fluoranthene, and pyrene] were detected at concentrations exceeding the freshwater sediment ESC. Concentrations detected during the 2010 BEE were less than those detected during the previous ECP SI. The concentrations of fluoranthene (0.92 mg/kg), chrysene (0.37 mg/kg), pyrene (0.71 mg/kg), and bis(2-ethylhexyl) phthalate (0.28 mg/kg) exceeded the ESC (0.75 mg/kg, 0.34 mg/kg, 0.49 mg/kg, and 0.182 mg/kg, respectively) in the BEE samples. In the SI samples, the concentrations of benzo(*a*)anthracene (0.54 mg/kg), bis(2-ethylhexyl) phthalate (2.1 and 1.3 mg/kg), chrysene (0.37 and 0.71 mg/kg), di-*n*-butyl phthalate (1.9 mg/kg), fluoranthene (0.99 mg/kg), phenanthrene (0.67 mg/kg), and pyrene (1.0 and 2.0 mg/kg) exceeded the ESC of 0.32, 0.182, 0.34, 1.114, 0.75, 0.56, and 0.49 mg/kg, respectively. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate and di-*n*-butyl phthalate are not considered COPECs in surface sediment at Building 1150. Benzo(*a*)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Building 1150.

Metals. During the ECP SI, 18 metals were detected in sediment at Building 1150 and eight of these (arsenic, cadmium chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations exceeding the freshwater sediment ESC. Though 22 metals were detected in surface sediment samples at Building 1150 during the 2010 BEE, only three of these (arsenic, cadmium, and chromium) were detected at concentrations exceeding the freshwater sediment ESC. Concentrations

detected during the BEE were generally less than those detected during the previous ECP SI. The concentrations of arsenic (8.09 and 8.89 mg/kg), cadmium (0.629 to 2.09 mg/kg), chromium (37.7 to 131 mg/kg), copper (27.7 to 41.0 mg/kg), lead (61.7 mg/kg), mercury (0.67 mg/kg), nickel (32.4 mg/kg), and zinc (210 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, 31, 0.2, 16, and 120 mg/kg, respectively in the BEE or SI samples. Vanadium was detected at concentrations exceeding the saltwater sediment ESC; there are no freshwater ESC for vanadium. Vanadium was identified as a COPEC in surface soil and is considered a COPEC in sediment. Arsenic, cadmium, chromium, copper, lead, mercury, nickel, vanadium, and zinc are considered COPECs in sediment at Building 1150.

3.4.2.13.4 Summary of COPECs for Building 1150

Parameters detected in soil, groundwater, surface water, or sediment at Building 1150 (Parcel 39) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium and silver were not detected in surface water at Building 1150, their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Building 1150 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
None	Not Applicable	None	Aroclor 1254
SVOCs			
None	Not Applicable	Anthracene Benzo(*a*)anthracene	Benzo(*a*)anthracene Chrysene Fluoranthene Phenanthrene Pyrene
Metals			
Cadmium Chromium Cobalt Lead Mercury Vanadium Zinc	Not Applicable	Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Vanadium Zinc
Possible COPECs			
		Cadmium	

3.4.2.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 283 (FTMM-61) and Buildings 283, 288, 291, 293, and 295 (Parcel 49).

3.4.2.14.1 COPECs for Surface Soil at FTMM-61 and Parcel 49

Ten surface soil samples were collected in relation to FTMM-61 and Parcel 49 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-4**.

PCBs. One PCB mixture, Aroclor 1260, was detected in three of the surface soil samples at FTMM-61 and Parcel 49. Two of the concentrations (0.47 and 8.85 mg/kg) exceeded the soil ESC (0.371 mg/kg). Aroclor 1260 is considered a COPEC in soil at Parcel 49.

SVOCs. Twenty-two SVOCs were detected in surface soil samples in at least one sample each at FTMM-61 and Parcel 49. Ten SVOCs were found at concentrations exceeding the soil ESC; nine of

these SVOCs are PAHs. The highest concentrations of these PAHs were found in one of the soil samples: benzo(*a*)anthracene (80 mg/kg), benzo(*a*)pyrene (54 mg/kg), benzo(*b*)fluoranthene (75 mg/kg), chrysene (79 mg/kg), fluoranthene (190 mg/kg), 2-methylnaphthalene (4.4 mg/kg), naphthalene (11 mg/kg), phenanthrene (170 mg/kg), and pyrene (160 mg/kg). Benzo(*a*)anthracene, benzo(a)pyrene, and chrysene were also detected exceeding the ESC in one or two other surface soil samples, but at much lower concentrations. Butyl benzyl phthalate was also detected in three samples at concentrations (0.52 to 1.8 mg/kg) exceeding the 0.239 mg/kg ESC. As noted previously, phthalates are commonly found in field and laboratory QC samples and are not considered COPECs in sediment at FTMM-61 and Parcel 49. Benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, chrysene, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene are considered COPECs in surface soil at Parcel 49.

Metals. A total of 19 metals were detected in surface soil samples; 10 (aluminum, arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc) of which were found at concentrations exceeding the soil ESC. Concentrations of aluminum (7,310 to 21,600 mg/kg) were greater than the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at FTMM-61 and Parcel 49. Arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc are considered COPECs in soil at FTMM-61 and Parcel 49.

3.4.2.14.2 COPECs for Groundwater at FTMM-61 and Parcel 49

Seven groundwater samples (including one duplicate sample) were collected from two distinct temporary wells and four monitoring wells as part of the ECP SI (Shaw, 2008). One of the temporary wells was located north of Building 283 and the other was located east of former Building 289. The monitoring wells were located along the northern perimeter of the former Squier Complex. Parkers Creek could receive groundwater discharge at FTMM-61 and Parcel 49. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-5**.

VOCs. Nine VOCs (acetone, benzene, bromodichloromethane, chloroform, ethylbenzene, methyl ethyl ketone, vinyl chloride, xylenes, and toluene) were detected in groundwater samples but at concentrations less than the ESC. VOCs are not considered COPECs at FTMM-61 and Parcel 49.

SVOCs. Four SVOCs were also detected in groundwater samples. One SVOC [bis(2-ethylhexyl) phthalate] was detected in the groundwater samples at concentrations exceeding the ESC. As noted previously, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with FTMM-61 and Parcel 49 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at FTMM-61 and Parcel 49.

Metals. A total of 18 metals were detected in groundwater samples at FTMM-61 and Parcel 49. Only one metal, zinc, was detected at concentrations in at least one sample exceeding the applicable saltwater ESC. Zinc was detected in three samples and two concentrations (103 and 107 µg/L) were greater than the 81 µg/L ESC. Zinc is considered a COPEC in groundwater at FTMM-61 and Parcel 49.

3.4.2.14.3 COPECs for Surface Water at FTMM-61 and Parcel 49

Two surface water samples were collected from Parkers Creek in relation to FTMM-61 and Parcel 49 as part of the 2010 BEE. These two surface water samples were collected at storm water line outfalls into Parkers Creek, to the east of Building 283 and north of Parcel 49. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-30**.

PCBs. No PCBs were detected in surface water samples at FTMM-61 and Parcel 49. PCBs are not considered COPECs in sediment at FTMM-61 and Parcel 49.

VOCs. No VOCs were detected in surface water samples at FTMM-61 and Parcel 49. VOCs are not considered COPECs in sediment at FTMM-61 and Parcel 49.

SVOCs. One SVOC, dimethyl phthalate, was detected in the surface water samples at FTMM-61 and Parcel 49. There are no surface water ESC for dimethyl phthalate. SVOCs are not considered COPECs in surface water at FTMM-61 and Parcel 49.

Metals. A total of 13 metals were detected in surface water samples at FTMM-61 and Parcel 49. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at FTMM-61 and Parcel 49.

3.4.2.14.4 COPECs for Sediment at FTMM-61 and Parcel 49

Seven surface sediment samples (including one duplicate sample) representing three sediment locations were collected from Parkers Creek in relation to FTMM-61 and Parcel 49 as part of the ECP SI (Shaw 2008). These three sediment sample locations were selected to evaluate historical discharges from Building 283 and Parcel 49 based on depositional characteristics and potential contaminant migration pathways and included the storm water outfalls in Parkers Creek to the east of Building 283 (**Appendix K**) associated with former septic systems at Building 78 and sump pump discharges related to Building 283. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-6**.

VOCs. No VOCs were detected in surface sediment samples at FTMM-61 and Parcel 49. VOCs are not considered COPECs at FTMM-61 and Parcel 49.

PCBs. No PCBs were detected in surface sediment samples at FTMM-61 and Parcel 49. PCBs are not considered COPECs at FTMM-61 and Parcel 49.

SVOCs. Ten SVOCs were detected in surface sediment samples at FTMM-61 and Parcel 49. One of the detected SVOCs exceeded the available saltwater sediment ESC. Di-*n*-butyl phthalate was detected in all samples at concentrations from 0.890 to 2.40 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Di-*n*-butyl phthalate is not considered a COPEC in surface sediment at FTMM-61 and Parcel 49.

Metals. Of the 20 metals detected in sediment at FTMM-61 and Parcel 49, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Aluminum was detected in two sediment samples at concentrations (2.92 and 1.85%) exceeding the saltwater sediment ESC (1.8%). Aluminum, like iron, is a major component of soil and sediment, and is usually not considered a COPEC except in very low pH environments. Aluminum is not considered a COPEC at FTMM-61 and Parcel 49. Arsenic was detected in all samples and the concentrations (14.8 to 29.7 mg/kg) exceeding the ESC (8.2 mg/kg). Barium was detected in all samples and the concentrations (65.3 to 96.4 mg/kg) greater than the ESC (48 mg/kg). Cadmium was detected in all samples and concentrations in three samples (1.65 to 5.55 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in all samples and the concentrations (149 to 353 mg/kg) were greater than the ESC (81 mg/kg). Copper was detected in all samples and three concentrations (76.5 to 111 mg/kg) were greater than the ESC (34 mg/kg). Lead was detected in three samples and one concentration (148 mg/kg) was greater than the ESC (47 mg/kg). Mercury was detected in three samples and the concentrations (0.23 to 0.53 mg/kg) were greater than the ESC (0.15 mg/kg). Nickel was detected in all samples and two concentrations (44.0 and 68.5 mg/kg) were greater than the ESC (21 mg/kg). Silver was detected in one sample and the concentration (1.40 mg/kg) was greater than the ESC (1 mg/kg). Vanadium was detected in all samples and the concentrations (79.3 to 125 mg/kg) were greater than the ESC (57 mg/kg). Zinc was detected in all samples and two concentrations (1320 and 2090 mg/kg) exceeded the ESC (150 mg/kg). Arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium, and zinc are considered COPECs in sediment at FTMM-61 and Parcel 49.

3.4.2.14.5 Summary of COPECs for FTMM-61 and Parcel 49

Parameters detected in soil, groundwater, surface water, or sediment at FTMM-61 and Parcel 49 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at FTMM-61 and Parcel 49, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil and sediment (though not in groundwater), it is considered a possible COPEC in surface water. The sediment detection limits for

several PAHs [acenaphthene, acenaphthylene, anthracene, benzo(*g,h,i*)perylene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and pyrene] were greater than the saltwater sediment ESC. These PAHs were not detected in any of the saltwater samples from FTMM-61 and Parcel 49; however, 2-methylnaphthalene and pyrene are considered COPECs in soil. Therefore, 2-methylnaphthalene and pyrene are considered possible COPECS in sediment. The COPECs, and possible COPECs, identified for FTMM-61 and Parcel 49 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
Aroclor 1260	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*b*)fluoranthene Chrysene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene	None	None	None
Metals			
Arsenic Cadmium Chromium Copper Lead Manganese Mercury Vanadium Zinc	Zinc	None	Arsenic Barium Cadmium Chromium Copper Lead Mercury Nickel Silver Vanadium Zinc
Possible COPECs			
		Copper	2-Methylnaphthalene Pyrene

3.4.2.15 BUILDING 1075 (ECP PARCEL 61)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Parcel 61.

3.4.2.15.1 COPECs for Surface Soil at Parcel 61

One surface soil sample was collected from Parcel 61 as part of the ECP SI (Shaw, 2008) near the southeastern corner of Building 1075. Parameters detected in the surface soil sample are presented in **Table B-7**.

PCBs. No PCBs were detected in the surface soil sample. PCBs are not considered COPECs at Parcel 61.

SVOCs. A total of 18 SVOCs were detected in the surface soil sample. Of these 18, three were detected above the soil ESC. Benzo(*a*)pyrene (3.7 mg/kg) exceeded the 1.52 mg/kg ESC, chrysene (5.0 mg/kg) exceeded the 4.73 mg/kg ESC, and naphthalene (1.2 mg/kg) exceeded the 0.0994 mg/kg ESC. These three PAHs are considered COPECs at Parcel 61.

Metals. A total of 18 metals were detected in the surface soil sample. Of these 18, eight (aluminum, cadmium, chromium, copper, lead, mercury, vanadium, and zinc) were identified at

concentrations exceeding the soil ESC. The concentration of aluminum (10,100 mg/kg) exceeded the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 61. Cadmium, chromium, copper, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 61.

3.4.2.15.2 COPECs for Surface Water at Parcel 61

One surface water sample was collected from a tributary to Husky Brook in relation to Parcel 61 as part of the 2010 BEE. This surface water sample was collected directly downgradient of the stormwater outfall in the tributary to Husky Brook. Husky Brook, in the vicinity of Parcel 61, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-31**.

VOCs. No VOCs were detected in surface water samples at Parcel 61. VOCs are not considered COPECs in surface water at Parcel 61.

PCBs. No PCBs were detected in surface water samples at Parcel 61. PCBs are not considered COPECs in surface water at Parcel 61.

SVOCs. Two SVOCs [benzo(*a*)anthracene and hexachlorobutadiene] were detected in the surface water sample. There are no available saltwater ESC for the detected SVOCs. Benzo(*a*)anthracene and hexachlorobutadiene are not considered COPECs in surface water at Parcel 61.

Metals. A total of 14 metals were detected in surface water samples at Parcel 61. None of these were detected at concentrations exceeding the available saltwater ESC. Metals are not considered COPECs in surface water at Parcel 61.

3.4.2.15.3 COPECs for Sediment at Parcel 61

Two sediment samples were collected from a tributary to Husky Brook in relation to Parcel 61 as part of the ECP SI (Shaw, 2008). One sediment sample was collected directly downgradient of the stormwater outfall into the tributary to Husky Brook and the other was collected downgradient of that near the confluence of the tributary with Husky Brook. Husky Brook, in the vicinity of Parcel 61, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-8**.

VOCs. No VOCs were detected in sediment samples at Parcel 61. VOCs are not considered COPECs at Parcel 61.

PCBs. No PCBs were detected in sediment samples at Parcel 61. PCBs are not considered COPECs at Parcel 61.

SVOCs. A total of 13 SVOCs were detected in surface sediment samples at Parcel 61. Bis(2-ethylhexyl) phthalate was detected in both sediment samples; the concentrations (0.380 and 0.460 mg/kg) were greater than the saltwater sediment ESC (0.18216 mg/kg). As noted previously, phthalates are commonly found in field and laboratory QC samples and are not considered COPECs in sediment at Parcel 61. Ten PAHs were detected at concentrations exceeding the saltwater ESC in one or both samples: acenaphthene (1.60 mg/kg), anthracene (0.160 and 0.290 mg/kg), benzo(a)anthracene (0.490 and 0.740 mg/kg), benzo(*a*)pyrene (0.430 and 0.650 mg/kg), benzo(*k*)fluoranthene (0.380 mg/kg), chrysene (0.710 and 0.920 mg/kg), fluoranthene (1.3 and 1.7 mg/kg), fluorene (0.140 mg/kg), phenanthrene (0.680 and 1.2 mg/kg), and pyrene (1.5 and 2.2 mg/kg). Acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene are considered COPECs in sediment at Parcel 61.

Metals. Of the 17 metals detected in sediment at Parcel 61, two were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic in one sample (13.3 mg/kg) was detected greater than the saltwater sediment ESC (8.2 mg/kg). Chromium was detected in one sample at a concentration (86.0 mg/kg) that exceeded the saltwater sediment ESC (81 mg/kg). Arsenic and chromium are considered COPECs in sediment at Parcel 61.

3.4.2.15.4 Summary of COPECs for Parcel 61

Parameters detected in soil, groundwater, surface water, or sediment at Building 1075 (Parcel 61) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Parcel 61, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil (though not in sediment), it is considered a possible COPEC in surface water. Several PAHs [acenaphthylene, benzo(*g,h,i*)perylene, dibenzo(*a,h*)anthracene, and 2-methylnaphthalene] were not detected in sediment samples, but their detection limits were greater than the saltwater sediment ESC in both samples. These were not identified as COPECs in other media at the site and are not considered COPECs in **sediment**. The COPECs, and possible COPECs, identified for Parcel 61 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	None
SVOCs			
Benzo(*a*)pyrene Chrysene Naphthalene	Not Applicable	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*k*)fluoranthene Chrysene Fluoranthene Fluorene Phenanthrene Pyrene
Metals			
Cadmium Chromium Copper Lead Mercury Vanadium Zinc	Not Applicable	None	Arsenic Chromium
Possible COPECs			
		Copper	

3.4.2.16 BUILDING 900 (ECP PARCEL 69)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 900 (Parcel 69).

3.4.2.16.1 COPECs for Soil at Parcel 69

Four surface soil samples were collected in relation to Parcel 69 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-9**.

PCBs. No PCBs were detected in surface soil samples at Parcel 69. PCBs are not considered COPECs in soil at Parcel 69.

SVOCs. Four SVOCs were detected in surface soil samples in at least one sample each at Parcel 69. No SVOCs were found at concentrations exceeding the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 69.

Metals. A total of 17 metals were detected in surface soil samples. Of these 17, seven were identified at concentrations exceeding the soil ESC. Concentrations of aluminum (6,760 to 9,190 mg/kg) exceeded the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments

and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 69. Chromium, copper, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 69.

3.4.2.16.2 COPECs for Groundwater at Parcel 69

Three groundwater samples (including one duplicate sample) were collected from two distinct temporary wells as part of the ECP SI (Shaw, 2008). One of these was located in an area of a former waste oil AST east of Building 900 and the other was located downgradient of Building 900. Oceanport Creek could receive groundwater discharge at Parcel 69. Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-10**.

VOCs. Three VOCs (acetone, PCE, and toluene) were detected in groundwater samples but at concentrations less than the ESC. VOCs are not considered COPECs in groundwater at Parcel 69.

SVOCs. One SVOC [bis(2-ethylhexyl) phthalate] was also detected in the groundwater samples. As noted previously, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with Parcel 69 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at Parcel 69.

3.4.2.16.3 COPECs for Surface Water at Parcel 69

One surface water sample was collected from Oceanport Creek in relation to Parcel 69 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-32**.

PCBs. No PCBs were detected in surface water samples at Parcel 69. PCBs are not considered COPECs in surface water at Parcel 69.

VOCs. No VOCs were detected in surface water samples at Parcel 69. VOCs are not considered COPECs in surface water at Parcel 69.

SVOCs. No SVOCs were detected in surface water samples at Parcel 69. SVOCs are not considered COPECs in surface water at Parcel 69.

Metals. A total of 10 metals were detected in surface water samples at Parcel 69. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Parcel 49.

3.4.2.16.4 COPECs for Sediment at Parcel 69

Four surface sediment samples representing two sediment locations were collected from Oceanport Creek in relation to Parcel 69 as part of the ECP SI (Shaw, 2008). Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-11**.

PCBs. No PCBs were detected in surface sediment samples at Parcel 69. PCBs are not considered COPECs in sediment at Parcel 69.

VOCs. Three VOCs (acetone, carbon disulfide, and methylene chloride) were detected in sediment samples. VOCs are not considered COPECs in sediment at Parcel 69.

SVOCs. Five SVOCs were detected in surface sediment samples at Parcel 69. All five of the detected SVOCs exceeded the available saltwater sediment ESC. Di-*n*-butyl phthalate was detected in both samples at concentrations ranging from 1.20 to 4.80 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Parcel 69. Acenaphthene in two samples (0.50 and 1.2 mg/kg), fluoranthene (0.79 and 2.8 mg/kg), phenanthrene in one sample (0.25 mg/kg), and pyrene (1.1 and 3.1 mg/kg) exceeded the saltwater ESC of 0.016, 0.6, 0.24, and 0.665 mg/kg, respectively. Acenaphthene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Parcel 69.

Metals. Of the 20 metals detected in sediment at Parcel 49, 14 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Aluminum was detected in both sediment samples and one concentration (4.13%) exceeded the saltwater sediment ESC (1.8%). Aluminum, like iron, is a major component of soil and sediment, and is usually not considered a COPEC except in very low pH environments. Aluminum is not considered a COPEC at Parcel 69. Arsenic was detected in all samples and one concentration (36.2 mg/kg) exceeded the ESC (8.2 mg/kg). Barium was detected in all samples and one concentration (89.6 mg/kg) exceeded the ESC (48 mg/kg). Cadmium was detected in one sample and the concentration (14.1 mg/kg) exceeded the ESC (1.2 mg/kg). Chromium was detected in all samples and the concentrations (74.5 to 345 mg/kg) were greater than the ESC (81 mg/kg). Cobalt was detected in both samples and one concentration (20.3 mg/kg) exceeded the ESC (10 mg/kg). Copper was detected in all samples and one concentration (203 mg/kg) exceeded the ESC (34 mg/kg). Lead was detected in both samples and one concentration (410 mg/kg) exceeded the ESC (47 mg/kg). Manganese was detected in both samples and one concentration (339 mg/kg) exceeded the ESC (260 mg/kg). Mercury was detected in one sample and the concentration (0.83 mg/kg) exceeded the ESC (0.15 mg/kg). Nickel was detected in all samples and one concentration (53.1 mg/kg) exceeded the ESC (21 mg/kg). Silver was detected in one sample and the concentration (9.99 mg/kg) exceeded the ESC (1 mg/kg). Vanadium was detected in all samples and one concentration (185 mg/kg) exceeded the ESC (57 mg/kg). Zinc was detected in all samples and one concentration (515 mg/kg) exceeded the ESC (150 mg/kg). Arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc are considered COPECs in sediment at Parcel 69.

3.4.2.16.5 Summary of COPECs for Parcel 69

Parameters detected in soil, groundwater, surface water, or sediment at Building 900 (Parcel 69) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Parcel 69, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil and sediment, it is considered a possible COPEC in surface water. Several PAHs [acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, indeno(1,2,3-*cd*)pyrene, 2-methylnaphthalene, and naphthalene] were not detected in sediment samples but their detection limits were greater than the saltwater sediment ESC in both samples. These PAHs were not identified as COPECs in other site media and are not considered COPECs for sediment. The COPECs, and possible COPECs, identified for Parcel 69 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	None
SVOCs			
None	None	None	Acenaphthene Fluoranthene Phenanthrene Pyrene
Metals			
Chromium Copper Lead Mercury Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel

Soil	Groundwater	Surface Water	Sediment
			Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.3 CHARLES WOOD AREA

3.4.3.1 LANDFILL, SITE CW-3A, FTMM-25

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill CW-3A (FTMM-25).

3.4.3.1.1 COPECs for Soil at Landfill CW-3A

Near surface (6-12 inches bgs) soil samples were collected from Landfill CW-3A (FTMM-25) as part of the IRP RI investigation (Versar, 2005b). A total of 48 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-9**.

SVOCs. A total of 21 SVOCs were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Of these 21 SVOCs, two were detected at concentrations exceeding the soil ESC in at least one sample. Naphthalene was detected in one sample at a concentration greater than the 0.0994 mg/kg ESC. Bis(2-ethylhexyl) phthalate was detected in two samples at concentrations exceeding the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. Naphthalene is considered a COPEC in soil at Landfill CW-3A (FTMM-25).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in half of the 48 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. Dieldrin was detected in four samples and the concentrations were greater than the 0.049 mg/kg ESC. Endrin aldehyde and heptachlor were detected in one sample each at concentrations exceeding the 0.0105 and 0.0538 mg/kg ESC, respectively. 4,4′-DDT, endrin aldehyde, dieldrin, and heptachlor are considered COPECs at Landfill CW-3A (FTMM-25).

PCBs. Two Aroclors were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Aroclor 1260 and Aroclor 1254 were detected in one sample each. The concentration of Aroclor 1254 exceeded the 0.371 mg/kg ESC. Aroclor 1254 is considered a COPEC in soil at Landfill CW-3A (FTMM-25).

Metals. A total of 22 metals were detected in near surface soil samples from Landfill CW-3A (FTMM-25) of which most metals were detected in the majority of the samples. Silver was detected infrequently, being detected in seven samples; selenium was detected in less than half the samples (14 of 48). Fourteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill CW-3A. Antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, vanadium, and zinc are considered COPECs in soil at Landfill CW-3A (FTMM-25).

3.4.3.1.2 COPECs for Groundwater at Landfill CW-3A (FTMM-25)

Four groundwater monitoring wells at Landfill CW-3A (FTMM-25) have been monitored for metals during the 2008-2009 time period. Shrewsbury Creek could receive groundwater discharge from Landfill CW-3A (FTMM-25). Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-10**.

Metals. A total of 10 metals were detected in groundwater samples from Landfill CW-3A (FTMM-25) during the 2008-2009 time period. Of these 10, six (barium, cadmium, chromium, copper, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. Barium concentrations in one well (CW3AMW02) were all greater than the 220 µg/L freshwater ESC. Barium did not exceed the ESC in any of the other three monitoring wells during this period. Most of the concentrations of copper from one well (CW3AMW03) exceeded the 6.5 µg/L site-specific freshwater ESC. Copper did not exceed the ESC in any of the other three monitoring wells during this period. Chromium was detected in one sample at a concentration greater than the freshwater ESC (19 µg/L). Cadmium, lead, and selenium were detected at concentrations exceeding the ESC in most, if not all, of the wells in at least one sample. Barium, cadmium, chromium, copper, lead, and selenium are considered COPECs in groundwater at Landfill CW-3A (FTMM-25).

3.4.3.1.3 COPECs for Surface Water at Landfill CW-3A (FTMM-25)

Two surface water samples were collected from Shrewsbury Creek adjacent to Landfill CW-3A (FTMM-25) as part of the 2010 BEE. One surface water sample was collected downstream of the stormwater outfall at the western end of Landfill CW-3A (**Appendix K**), and the other surface water sample was collected downgradient of that location. Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-33**.

VOCs. One VOC was detected in at least one of the two surface water samples. Toluene was detected at a concentration (6.8 µg/L) less than the freshwater ESC. VOCs are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

SVOCs. Three SVOCs were detected in at least one of the two surface water samples. One sample had a concentration of 3,3′-dichlorobenzidine (0.61 µg/L) less than the freshwater ESC. Anthracene (0.11 µg/L) and benzo(*a*)pyrene (0.31 µg/L) were detected greater than the freshwater ESC (0.035 and 0.014 µg/L, respectively). Anthracene and benzo(*a*)pyrene are considered COPECs in surface water at Landfill CW-3A (FTMM-25).

PCBs. PCBs were not detected in surface water samples and are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

Pesticides. Pesticides were not detected in surface water samples and are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

Metals. A total of 18 metals were detected in surface water samples at Landfill CW-3A (FTMM-25). Of these 18, four were detected at concentrations exceeding the freshwater ESC. Total copper (8.48 µg/L) and total lead (6.18 and 8.81 µg/L) were detected at concentrations exceeding the freshwater ESC for dissolved copper (6.5 µg/L) and dissolved lead (5.4 µg/L); dissolved copper and dissolved lead were not detected. Copper and lead are not considered COPECs in surface water. Total cadmium (0.97 µg/L) and dissolved cadmium (0.79 µg/L) were detected at concentrations greater than the freshwater ESC (0.14 µg/L) in one surface water sample, and total zinc (117 µg/L) and dissolved zinc (99.8 µg/L) were detected greater than the freshwater ESC (88 µg/L) in one surface water sample. Cadmium and zinc are considered COPECs in surface water at Landfill CW-3A (FTMM-25).

3.4.3.1.4 COPECs for Sediment at Landfill CW-3A (FTMM-25)

Six sediment samples were collected from Shrewsbury Creek adjacent to Landfill CW-3A (FTMM-25) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Shrewsbury Creek in the vicinity of Landfill CW-3A (FTMM-25) from the area of Buildings 2707 and 2713 in Parcel 27 (**Section 3.4.3.4**). Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-34**.

VOCs. Four VOCs (acetone, methylene chloride, toluene, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the ESC.

PCBs. No PCBs were detected in sediment samples at Landfill CW-3A (FTMM-25).

Pesticides. Three pesticides (4,4'-DDT, 4,4'-DDE, and 4,4'-DDD) were detected in at least one sediment sample each from Landfill CW-3A. Only one sample had a 4,4'-DDD concentration (0.013 mg/kg) exceeding the freshwater sediment ESC (0.008 mg/kg), and 4,4'-DDD is considered a COPEC in sediment at Landfill CW-3A (FTMM-25).

SVOCs. A total of 16 SVOCs were detected in surface sediment samples at Landfill CW-3A (FTMM-25). Of the 16 detected SVOCs, 12 were detected in one sediment sample (CW3-SD6) at concentrations exceeding the freshwater ESC; these were all PAHs: 0.78 mg/kg acenaphthene, 4.1 mg/kg anthracene, 7.0 mg/kg benzo(a)anthracene, 4.6 mg/kg benzo(a)pyrene, 2.0 mg/kg benzo(*g,h,i*)perylene, 2.3 mg/kg benzo(*k*)fluoranthene, 5.6 mg/kg chrysene, 17 mg/kg fluoranthene, 1.4 mg/kg fluorene, 2.0 mg/kg indeno(1,2,3-*cd*)pyrene, 15 mg/kg phenanthrene, and 13 mg/kg pyrene. Acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, phenanthrene, and pyrene are considered COPECs in sediment at Landfill CW-3A (FTMM-25).

Metals. Of the 20 metals detected in sediment at Landfill CW-3A (FTMM-25), five (arsenic, cadmium, chromium, copper, and lead) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in one sample (6.59 mg/kg), cadmium concentrations in three samples (1.07 to 3.38 mg/kg), chromium concentrations in five samples (29.3 to 145 mg/kg), copper concentrations in two samples (23.3 and 31.6 mg/kg), and lead in one sample (31.2 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, and 31 mg/kg, respectively. Though there are no freshwater sediment ESC for barium, selenium, and vanadium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC. These metals were identified as COPECs in other environmental media at Landfill CW-3A (FTMM-25) and are considered COPECs in sediment. Arsenic, barium, cadmium, chromium, copper, lead, selenium, and vanadium are considered COPECs in sediment at Landfill CW-3A (FTMM-25).

3.4.3.1.5 Summary of COPECs for Landfill CW-3 (FTMM-25)A

Parameters detected in soil, groundwater, surface water, or sediment at Landfill CW-3A (FTMM-25) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though silver was not detected in surface water at Landfill CW-3A (FTMM-25), its MDLs were greater than the freshwater ESC. Given that silver is considered a COPEC in sediment (though not in soil or groundwater), it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill CW-3A (FTMM-25) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
DDT Dieldrin Endrin aldehyde Heptachlor	Not Applicable	None	DDD
PCBs			
Aroclor 1254	Not Applicable	None	None
SVOCs			
Naphthalene	Not Applicable	Anthracene Benzo(a)pyrene	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Fluoranthene Fluorene Indeno(1,2,3-*cd*)pyrene Phenanthrene

Soil	Groundwater	Surface Water	Sediment
			Pyrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Copper Lead Manganese Mercury Selenium Silver Vanadium Zinc	Barium Cadmium Chromium Copper Lead Selenium	Cadmium Zinc	Arsenic Barium Cadmium Chromium Copper Lead Selenium Vanadium
Possible COPECs			
		Silver	

3.4.3.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Surface soil, groundwater, surface water, and wetland sediment analytical data were evaluated for the identification of COPECs related to the Former Pesticide Storage Area, Site CW-6 (FTMM-28).

3.4.3.2.1 COPECs for Soil at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four surface soil samples were collected as part of the 2010 BEE at Site CW-6 (FTMM-28). Parameters detected in sediment samples are presented in **Table D-35**.

VOCs. Five VOCs were detected in surface soil samples at Site CW-6 (FTMM-28). None of the VOCs were detected at concentrations exceeding the soil ESC. VOCs are not considered COPECs in soil at Site CW-6 (FTMM-28).

SVOCs. Fifteen SVOCs were detected in surface soil samples at Site CW-6 (FTMM-28). One SVOC, chrysene, was detected at a concentration (22 mg/kg) greater than the soil ESC (4.73 mg/kg). Chrysene is considered a COPEC in soil at Site CW-6 (FTMM-28).

Pesticides. Five pesticides were detected in surface soil samples at Site CW-6 (FTMM-28). Dieldrin (0.0092 mg/kg) and 4,4'-DDT (0.021 to 0.23 mg/kg) were detected in at least one soil sample each greater than the soil ESC of 0.049 and 0.0035 mg/kg, respectively. Dieldrin and 4,4'-DDT are considered COPECs in soil at Site CW-6 (FTMM-28).

PCBs. No PCBs were detected in surface soil samples at Site CW-6 (FTMM-28). PCBs are not considered COPECs in surface soil at Site CW-6 (FTMM-28).

Metals. A total of 23 metals were detected in surface soil samples at Site CW-6 (FTMM-28). Eleven metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, vanadium, and zinc) were detected exceeding the ESC in at least one of the surface soil samples from Site CW-6 (FTMM-28). Aluminum (1,640 to 6,740 mg/kg), antimony (0.62 to 3.06 mg/kg), chromium (13.1 to 55.2 mg/kg), lead (30.9 to 356 mg/kg), mercury (0.218 to 8.1 mg/kg), selenium (1.1 to 7.61 mg/kg), vanadium (12.3 to 55.6 mg/kg), and zinc (42.5 to 373 mg/kg) were detected at concentrations exceeding the ESC in all four of the surface soil samples. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill Site CW-6. Antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, vanadium, and zinc are considered COPECs in soil at CW-6 (FTMM-28).

3.4.3.2.2 COPECs for Groundwater at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four groundwater monitoring wells at Site CW-6 (FTMM-28) have been monitored during the 2008-2009 time period. Sampling for SVOCs and VOCs was discontinued after the November 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs and VOCs are not considered COPECs in groundwater at Landfill 2. Wampum Brook could receive groundwater discharge from Site CW-6 (FTMM-28). Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-11**.

Metals. A total of 11 metals were detected in groundwater samples from Site CW-6 (FTMM-28) during the 2008-2009 time period. Of these 11, four (cadmium, copper, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. Lead concentrations in one well (CW6MW01) during two quarters in 2008 were greater than the 5.4 µg/L freshwater ESC. Copper exceeded the site-specific freshwater ESC for dissolved copper of 8.1 µg/L in two of the monitoring wells. Cadmium and selenium were detected at concentrations exceeding the ESC (0.14 and 5 µg/L, respectively) in all of the wells in at least one sample. Cadmium, copper, lead, and selenium are considered COPECs in groundwater at Landfill CW-3A.

3.4.3.2.3 COPECs for Surface Water at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Two surface water samples were collected as part of the 2010 BEE at Site CW-6 (FTMM-28). These were located upstream of Site CW-6 (FTMM-28) where Wampum Brook enters the CWA and downstream of Site CW-6 (FTMM-28) where Wampum Brook exits the CWA. Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-36**.

VOCs. One VOC was detected in surface water samples at Site CW-6 (FTMM-28). MTBE was detected in one sample at a concentration less than the freshwater ESC. VOCs are not considered COPECs in surface water at Site CW-6 (FTMM-28).

PCBs. One PCB mixture was detected in surface water samples at Site CW-6 (FTMM-28). Aroclor 1242 was detected in both surface water samples at concentrations (0.13 and 0.3 µg/L) exceeding the freshwater ESC (0.014 µg/L). Aroclor 1242 is considered a COPEC in surface water at Site CW-6 (FTMM-28).

SVOCs. No SVOCs were detected in surface water samples. SVOCs are not considered COPECs in surface water at Site CW-6 (FTMM-28).

Pesticides. No pesticides were detected in surface water samples. Pesticides are not considered COPECs in surface water at Site CW-6 (FTMM-28).

Metals. A total of 13 metals were detected in surface water samples at Site CW-6 (FTMM-28). Of these 13, three (cadmium, lead, and zinc) were detected at concentrations exceeding the freshwater ESC in at least one sample. Total cadmium (0.52 and 1.13 µg/L) and dissolved cadmium (0.8 µg/L) were detected greater than the site-specific freshwater ESC (0.14 µg/L) and total cobalt (29.4 µg/L) and dissolved cobalt (28.7 µg/L) were exceeded the freshwater ESC (24 µg/L) in one surface water sample. This sediment sample was collected from Wampum Brook upstream of Site CW-6 (FTMM-28) at the upgradient boundary of the CWA. Cobalt is not considered a COPEC in surface water at Site CW-6 (FTMM-28). Total lead (7.94 and 8.09 µg/L) and dissolved lead (6.32 and 8.79 µg/L) were detected at concentrations exceeding the freshwater ESC (5.4 µg/L) in both samples. Cadmium and lead are considered COPECs in surface water at Site CW-6 (FTMM-28).

3.4.3.2.4 COPECs for Sediment at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four sediment samples were collected from the wetland area southwest of Site CW-6 (FTMM-28) and two sediment samples were collected from Wampum Brook as part of the 2010 BEE. Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-37**.

VOCs. Five VOCs (acetone, methylene chloride, styrene, toluene, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the freshwater sediment ESC. VOCs are not considered COPECs in wetland sediments at Site CW-6 (FTMM-28).

Pesticides. One pesticide (4,4'-DDE) was detected in one wetland sediment sample from Site CW-6 (FTMM-28). The concentration (0.006 mg/kg) exceeded the freshwater sediment ESC (0.005 mg/kg) and 4,4'-DDE is considered a COPEC in sediment at Site CW-6 (FTMM-28).

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1260) were detected in one sediment sample each. Aroclor 1260 was detected in one wetland sediment sample at a concentration (0.1 mg/kg) which exceeds the freshwater sediment ESC (0.005 mg/kg); Aroclor 1242 was detected at a concentration less than the freshwater sediment ESC for PCBs (0.07 mg/kg). Aroclor 1260 is considered a COPEC in wetland sediment at Site CW-6 (FTMM-28).

SVOCs. A total of 20 SVOCs were detected in surface sediment samples at Site CW-6 (FTMM-28). Of the 20 detected SVOCs, 15 were detected in one sediment sample (CW6-SD6) at concentrations exceeding the ESC; these were all PAHs: 0.47 mg/kg acenaphthene, 1.6 mg/kg acenaphthylene, 0.3 mg/kg anthracene, 1.0 mg/kg benzo(*a*)anthracene, 1.2 mg/kg benzo(*a*)pyrene, 0.89 mg/kg benzo(*g,h,i*)perylene, 0.74 mg/kg benzo(*k*)fluoranthene, 1.9 mg/kg chrysene, 4.9 mg/kg fluoranthene, 0.82 mg/kg fluorene, 0.98 mg/kg indeno(1,2,3-*cd*)pyrene, 1.3 mg/kg 2-methylnaphthalene, 4.4 mg/kg naphthalene, 8.3 mg/kg phenanthrene, and 3.3 mg/kg pyrene. This sediment sample was collected from Wampum Brook upstream of Site CW-6 (FTMM-28) at the upgradient boundary of the CWA. These PAHs are not considered COPECs in sediment at Site CW-6 (FTMM-28). One SVOC (2,4-dinitrophenol) was detected in two wetland sediment samples at concentrations (1.2 and 1.7 mg/kg) that exceeded the freshwater sediment ESC (0.00621 mg/kg). Thus, 2,4-dinitrophenol is considered a COPEC in wetland sediments at Landfill CW-6 (FTMM-28).

Metals. Of the 22 metals detected in sediment at Site CW-6 (FTMM-28), nine (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in two wetland samples (11.7 and 13.1 mg/kg), cadmium concentrations in five samples (0.9 to 5.56 mg/kg), chromium concentrations in six samples (35.3 to 150 mg/kg), copper concentrations in four samples (26.2 to 56.2 mg/kg), lead in four samples (124 to 218 mg/kg), mercury in three samples (0.426 to 6.6 mg/kg), nickel in three samples (16.2 to 56.2 mg/kg), silver in four samples (1.1 to 12.1 mg/kg), and zinc in one sample (168 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, 31, 0.2, 16, 1.0, and 120 mg/kg, respectively. Though there are no freshwater sediment ESC for barium, selenium, and vanadium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC. Of these metals, selenium and vanadium were identified as COPECs in other environmental media at Site CW-6 (FTMM-28) and are considered COPECs in sediment. Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site CW-6 (FTMM-28).

3.4.3.2.5 Summary of COPECs for Site CW-6 (FTMM-28)

Parameters detected in soil, groundwater, surface water, or sediment at Site CW-6 (FTMM-28) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though silver and 4,4′-DDE were not detected in surface water at Landfill CW-6 (FTMM-28), their MDLs were greater than the freshwater ESC. Given that silver and 4,4′-DDE are considered COPECs in sediment (though not in soil or groundwater), they are considered possible COPECs in surface water. The COPECs, and possible COPECs, identified for Landfill CW-6 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	None	None	None
Pesticides			
DDT Dieldrin	Not Applicable	None	DDE

Soil	Groundwater	Surface Water	Sediment
PCBs			
None	Not Applicable	Aroclor 1242	Aroclor 1260
SVOCs			
Chrysene	None	None	2,4-Dinitrophenol
Metals			
Antimony Arsenic Cadmium Chromium Copper Lead Mercury Selenium Vanadium Zinc	Cadmium Copper Lead Selenium	Cadmium Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		DDE Silver	

3.4.3.3 BUILDING 2700 (ECP PARCEL 15)

Groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 2700 and ECP Parcel 15.

3.4.3.3.1 COPECs for Groundwater at Building 2700 (Parcel 15)

Seven groundwater samples (including one duplicate sample) were collected from six distinct temporary wells as part of the ECP SI (Shaw, 2008). These were located along the downgradient boundary of the parcel along Shrewsbury Creek. Shrewsbury Creek could receive groundwater discharge from Parcel 15. Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-12**.

VOCs. One VOC, toluene, was detected in one groundwater sample but at a concentration less than the ESC. VOCs are not considered COEPCs in groundwater at Parcel 15.

SVOCs. One SVOC, bis(2-ethylhexyl) phthalate, was detected in three groundwater samples at concentrations from 1.19 to 4.04 µg/L exceeding the freshwater ESC of 0.3 µg/L. Bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with Parcel 15 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at Parcel 15.

Metals. A total of 19 metals were detected in Parcel 15 groundwater samples. Of the 19 metals detected, seven (barium, cadmium, chromium, copper, lead, selenium, and vanadium) were detected at least once at concentrations greater than the respective freshwater ESC. Barium, cadmium, chromium, copper, lead, selenium, and vanadium are considered COPECs in groundwater at Parcel 15.

3.4.3.3.2 COPECs for Surface Water at Building 2700 (ECP Parcel 15)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 15 as part of the 2010 BEE. These samples were collected at the discharge points of an underground stream diversion near the southwest end of Building 2525 and of a stormwater pipe outfall (**Appendix K**). Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-38**.

VOCs. No VOCs were detected in surface water samples at Parcel 15. VOCs are not considered COPECs in surface water at Parcel 15.

SVOCs. No SVOCs were detected in surface water samples at Parcel 15. SVOCs are not considered COPECs in surface water at Parcel 15.

PCBs. No PCBs were detected in surface water samples at Parcel 15. PCBs are not considered COPECs in surface water at Parcel 15.

Metals. A total of 12 metals were detected in Parcel 15 surface water samples. Of the 12 metals detected, two (cadmium and lead) were detected at least once exceeding the freshwater ESC. Total cadmium was detected in one surface water sample at a concentration of 0.55 µg/L which exceeds the freshwater ESC of 0.15 µg/L. However, the ESC is based on dissolved cadmium and cadmium was not detected in either of the filtered surface water samples from Parcel 15; cadmium is not considered a COPEC in surface water at Parcel 15. Lead was detected in all surface water samples from Parcel 15. Total lead concentrations ranged from 6.84 to 8.3 µg/L and dissolved lead concentrations ranged from 4.33 to 8.27 µg/L. The freshwater ESC for lead of 5.4 µg/L is based on dissolved lead and one of the two filtered surface water samples had a lead concentration above the ESC. Lead is considered a COPEC in surface water at Parcel 15.

3.4.3.3.3 COPECs for Sediment at Building 2700 (ECP Parcel 15)

A total of three surface sediment samples were collected from three stormwater outfall locations within Shrewsbury Creek adjacent to Parcel 15 as part of the ECP SI (Shaw, 2008). These samples were collected at the discharge points of an underground stream diversion near the southwest end of Building 2525 and of two other stormwater pipe outfalls (**Appendix K**). Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-13**.

SVOCs. A total of 10 SVOCs were detected in Parcel 15 surface sediment samples. One SVOC, bis(2-ethylhexyl) phthalate, was detected in one of three surface sediment samples with a concentration of 1.3 mg/kg which exceeds the freshwater sediment ESC of 0.182 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Parcel 15.

Metals. A total of 18 metals were detected in Parcel 15 surface sediment samples. Only one metal was detected in surface sediment samples from Parcel 15 at concentrations exceeding the freshwater sediment ESC. Total chromium was detected at concentrations ranging from 29.4 to 37.0 mg/kg. These are above the 26 mg/kg ESC, and chromium is considered a COPEC in sediment at Parcel 15.

3.4.3.3.4 Summary of COPECs for Parcel 15

Parameters detected in soil, groundwater, surface water, or sediment at Building 2700 (Parcel 15) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium was not detected in filtered surface water samples at Parcel 15, their MDLs were greater than the freshwater ESC. Given that cadmium was detected at concentrations exceeding the freshwater ESC in unfiltered surface water samples and cadmium is considered a COPEC in groundwater, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Parcel 15 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	Not Applicable
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
Not Applicable	Not Applicable	None	Not Applicable
SVOCs			
Not Applicable	None	None	None
Metals			
Not Applicable	Barium Cadmium Chromium Copper	Lead	Chromium

Soil	Groundwater	Surface Water	Sediment
	Lead Selenium Vanadium		
Possible COPECs			
		Cadmium	

3.4.3.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Buildings 2507 and 2704 in ECP Parcel 27.

3.4.3.4.1 COPECs for Surface Soil at Buildings 2507 and 2704 (ECP Parcel 27)

Three surface soil samples (including one duplicate) were collected at Parcel 27 as part of the SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-14**.

VOCs. No VOCs were detected in surface soil samples at Parcel 27. VOCs are not considered COPECs in surface soil.

PCBs. No PCBs were detected in surface soil samples at Parcel 27. PCBs are not considered COPECs in surface soil.

SVOCs. A total of eight SVOCs were detected in surface soil samples. Of these, only one was detected greater than the soil ESC. Bis(2-ethylhexyl) phthalate was detected in the duplicate sample at a concentration (0.940 mg/kg) which exceeds the 0.92954 mg/kg soil ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. SVOCs are not considered COPECs in soil at Parcel 27.

Metals. A total of 18 metals were detected in surface soil samples at Parcel 27. Of these, 10 (aluminum, arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc) were detected in at least one surface soil sample each above the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 27. Arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc are considered COPECs at Parcel 27.

3.4.3.4.2 COPECs for Surface Water at Buildings 2507 and 2704 (ECP Parcel 27)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 27, at an outfall and at an additional location downstream, as part of the 2010 BEE. One surface water sample was collected at a stormwater outfall and the other was collected downstream of that location. Shrewsbury Creek, in the vicinity of Parcel 27, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-39**.

VOCs. No VOCs were detected in surface water samples at Parcel 27. VOCs are not considered COPECs in surface water at Parcel 27.

SVOCs. No SVOCs were detected in surface water samples at Parcel 27. SVOCs are not considered COPECs in surface water at Parcel 27.

PCBs. No PCBs were detected in surface water samples at Parcel 27. PCBs are not considered COPECs in surface water at Parcel 27.

Metals. A total of 14 metals were detected in Parcel 27 surface water samples. Of the 14 metals detected, three (cadmium, chromium, and lead) were detected at least once exceeding the freshwater ESC. Total cadmium was detected at concentrations of 0.76 and 0.88 µg/L and dissolved cadmium was detected at concentrations of 0.52 and 0.69 µg/L; these exceed ESC for dissolved cadmium of 0.16 µg/L. Chromium was detected in one filtered sample at a concentration (28.5 µg/L) greater than the ESC for dissolved chromium of 21 µg/L. Total lead was detected at concentrations of 5.46 and 10.6 µg/L and dissolved lead was detected at concentrations of 5.77 and 8.18 µg/L; these exceed the freshwater ESC

for dissolved lead of 5.4 µg/L. Cadmium, chromium, and lead are considered COPECs in surface water at Parcel 27.

3.4.3.4.3 COPECs for Sediment at Buildings 2507 and 2704 (ECP Parcel 27)

Two surface sediment samples were collected from Shrewsbury Creek adjacent to Parcel 27, at an outfall and at an additional location downstream as part of the ECP SI (Shaw, 2008). One sediment sample was collected at a stormwater outfall and the other was collected downstream of that location. Shrewsbury Creek, in the vicinity of Parcel 27, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface sediment samples are presented in **Table B-15**.

SVOCs. A total of seven SVOCs were detected in Parcel 27 surface sediment samples. None of the SVOCs detected in surface sediment samples exceeded the freshwater sediment ESC. SVOCs are not considered COPECs in sediment at Parcel 27.

Of the 17 metals detected, six (arsenic, cadmium, chromium, copper, lead, and zinc) were detected at concentrations exceeding the freshwater sediment ESC. Arsenic (6.11 mg/kg), copper (187 mg/kg), lead (84.9 mg/kg), and zinc (264 mg/kg) were detected greater than their ESC of 6, 16, 31, and 120 mg/kg, respectively, in one of the two surface sediments collected at Parcel 27. Cadmium (0.715 and 1.76 mg/kg) and total chromium (49.8 and 49.6 mg/kg) were detected at concentrations exceeding the ESC (0.6 and 26 mg/kg, respectively) in both surface sediment samples. Arsenic, cadmium, chromium, copper, lead, and zinc are considered COPECs in sediment at Parcel 27.

3.4.3.4.4 Summary of COPECs for Parcel 27

Parameters detected in soil, groundwater, surface water, or sediment at Buildings 2507 and2704 (Parcel 27) at concentrations greater than the applicable ESC were identified as COPECs for the site. The COPECs, and possible COPECs, identified for Parcel 27 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	Not Applicable	None	Not Applicable
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	Not Applicable
SVOCs			
None	Not Applicable	None	None
Metals			
Arsenic Cadmium Chromium Copper Lead Manganese Mercury Vanadium Zinc	Not Applicable	Cadmium Chromium Lead	Arsenic Cadmium Chromium Copper Lead Zinc

3.4.3.5 BUILDING 2525 (ECP PARCEL 28)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 2525 and ECP Parcel 28.

3.4.3.5.1 COPECs for Surface Soil at Building 2525 (ECP Parcel 28)

Two surface soil samples were collected from Parcel 28 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-16**.

PCBs. No PCBs were detected in surface soil samples and PCBs are not considered COPECs at Parcel 28.

SVOCs. Five SVOCs were detected in surface soil samples but none were detected at concentrations greater than the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 28.

Metals. A total of 17 metals were detected in surface soil samples. Of these, five (aluminum, chromium, lead, vanadium, and zinc) were detected at concentrations exceeding the ESC in at least one sample each. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 28. Chromium, lead, vanadium, and zinc are considered COPECs at Parcel 28.

3.4.3.5.2 COPECs for Groundwater at Building 2525 (ECP Parcel 28)

Five groundwater samples (including one duplicate sample) were collected from four distinct temporary wells as part of the ECP SI (Shaw, 2008). Three of these were located downgradient of former drainage fields and one was located downgradient of a former storage pad area located in an open field west of Building 2290 and Guam Lane. Shrewsbury Creek could receive groundwater discharge from Parcel 28. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-17**.

VOCs. Three VOCs (acetone, chloroform, and toluene) were detected in at least one groundwater sample each but at concentrations less than the ESC. VOCs are not considered COPECs in groundwater at Parcel 28.

SVOCs. One SVOC, bis(2-ethylhexyl) phthalate, was detected in three groundwater samples at concentrations from 0.94 to 2.30 µg/L which exceed the ESC of 0.3 µg/L. As discussed earlier, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples, and it is not considered a COPEC in groundwater at Parcel 28.

Metals. A total of 13 metals were detected in Parcel 28 groundwater samples. Of the 13 metals detected, only cadmium was detected at a concentration greater than the ESC. Detected concentrations ranged from 0.314 to 0.533 µg/L which exceed the freshwater ESC of 0.15 µg/L. Cadmium is considered a COPEC in groundwater at Parcel 28.

3.4.3.5.3 COPECs for Surface Water at Building 2525 (ECP Parcel 28)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 28 as part of the BEE. These were located downgradient of potential former discharge pipes which had been previously observed on the southeast bank of the creek. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-40**.

VOCs. No VOCs were detected in surface water samples at Parcel 28. VOCs are not considered COPECs in surface water at Parcel 28.

SVOCs. No SVOCs were detected in surface water samples at Parcel 28. SVOCs are not considered COPECs in surface water at Parcel 28.

PCBs. No PCBs were detected in surface water samples at Parcel 28. PCBs are not considered COPECs in surface water at Parcel 28.

Metals. A total of 11 metals were detected in Parcel 28 surface water samples. Of the 11 metals detected, only lead was detected at a concentration exceeding the freshwater ESC. Total lead was detected at concentrations of 6.36 and 7.74 µg/L and dissolved lead was detected at concentrations of 5.74 and 7.14 µg/L; these exceed the freshwater ESC for dissolved lead of 5.4 µg/L. Lead is considered a COPEC in surface water at Parcel 28.

3.4.3.5.4 COPECs for Sediment at Building 2525 (ECP Parcel 28)

Two surface sediment samples were collected from Shrewsbury Creek adjacent to Parcel 28 as part of the ECP SI (Shaw, 2008). These were located along the southeast bank of Shrewsbury Creek adjacent to Building 2525 directly downgradient of potential former discharge pipes observed on the

southeast bank of the creek. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface sediment samples are presented in **Table B-18**.

VOCs. One VOC (acetone) was detected in both Parcel 28 surface sediment samples. There are no available sediment ESC for acetone. VOCs are not considered COPECs in sediment at Parcel 28.

SVOCs. A total of five SVOCs were detected in Parcel 28 surface sediment samples. None of the SVOCs detected in surface sediment samples exceeded the freshwater sediment ESC. SVOCs are not considered COPECs in sediment at Parcel 28.

Metals. Of the 17 metals detected, one (chromium) was detected at concentrations greater than the freshwater sediment ESC. Total chromium (36.8 and 43.0 mg/kg) was detected greater than the ESC (26 mg/kg) in both surface sediment samples. Chromium is considered a COPEC in sediment at Parcel 28.

3.4.3.5.5 Summary of COPECs for Parcel 28

Parameters detected in soil, groundwater, surface water, or sediment at Building 2525 (Parcel 28) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium was not detected in surface water at Parcel 28, its MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in groundwater, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Parcel 28 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	Not Applicable
SVOCs			
None	None	None	None
Metals			
Chromium Lead Vanadium Zinc	Cadmium	Lead	Chromium
Possible COPECs			
		Cadmium	

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-2	M2-SD3	6/24/10	15:08	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD4	6/24/10	15:24	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD5	6/24/10	15:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD6	6/24/10	15:53	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD7	6/25/10	8:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD8	6/25/10	9:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD9	6/25/10	9:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD10	6/25/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD11	6/25/10	9:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD12	6/25/10	10:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD13	6/25/10	10:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD14	6/24/10	14:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SW6	6/21/10	11:15	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW11	6/21/10	11:30	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-2						12	2													
M-3	M3-SD1	6/18/10	10:38	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD2	6/18/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD3	6/18/10	11:28	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD4	6/18/10	11:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD5	6/18/10	13:33	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD6	6/18/10	13:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD7	6/18/10	14:08	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD8	6/21/10	14:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD9	6/21/10	14:57	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD10	6/21/10	15:12	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD11	6/21/10	14:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SW3	6/21/10	8:31	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW8	6/21/10	8:50	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-3						11	2													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-4	M4-SD1	6/22/10	13:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD2	6/22/10	14:14	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD3	6/22/10	14:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD4	6/22/10	14:46	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD5	6/22/10	15:07	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD6	6/22/10	15:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SW4	6/21/10	9:45	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-4						6	1													
M-5	M5-SD1	6/17/10	12:18	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD2	6/18/10	9:23	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD3	6/18/10	9:37	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD4	6/18/10	9:04	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD5	6/18/10	9:57	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD6	6/18/10	10:17	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SW4	6/18/10	8:45	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-5						6	1													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-8	M8-SD1	6/23/10	13:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD2	6/17/10	10:46	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD3	6/17/10	16:24	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD4	6/17/10	16:44	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD5	6/17/10	16:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD6	6/23/10	13:29	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD7	6/23/10	13:38	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD8	6/17/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD9	6/17/10	11:35	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD10	6/17/10	11:58	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD12	6/17/10	12:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SW3	6/17/10	16:18	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW7	6/23/10	11:05	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW12	6/23/10	11:20	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-8						11	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-12/M-14	M14-SD1	6/15/10	9:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD2	6/15/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD3	6/15/10	10:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD4	6/15/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD5	6/15/10	11:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD6	6/15/10	12:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD7	6/15/10	14:33	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD8	6/15/10	15:23	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD9	6/16/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD10	6/16/10	11:22	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD11	6/16/10	11:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD12	6/28/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD13	6/16/10	12:48	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SW3	6/22/10	10:08	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW8	6/15/10	15:01	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW12	6/28/10	13:53	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW13	6/22/10	11:32	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-12/M-14						13	4													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-15	M15-SD1	6/14/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD2	6/14/10	14:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD3	6/14/10	14:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD4	6/14/10	15:02	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SW1	6/14/10	13:40	na	na		SW		x	x	x	x	x	x		x			x	
M-15	M15-SW2	6/14/10	14:00	na	na		SW		x	x	x	x	x	x		x			x	
M-15	M15-SW4	6/14/10	14:55	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-15						4	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite											Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-16	M16-SD1	6/14/10	10:04	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD2	6/14/10	10:44	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD3	6/14/10	11:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD4	6/14/10	11:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SW1	6/23/10	11:55	na	na		SW		x	x	x	x	x	x		x			x	
M-16	M16-SW2	6/23/10	12:05	na	na		SW		x	x	x	x	x	x		x			x	
M-16	M16-SW4	6/23/10	12:18	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-16						4	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-18	M18-SD1	6/16/10	15:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD2	6/17/10	9:03	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD3	6/16/10	16:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD4	6/16/10	17:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD5	6/17/10	10:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SW3	6/22/10	10:08	na	na		SW		x	x	x	x	x	x		x			x	
M-18	M18-SW5	6/17/10	9:50	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-18						5	2													
M-20	M20-SD1	6/23/10	9:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-20	M20-SD2	6/23/10	10:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-20	M20-SW1	6/23/10	9:45	na	na		SW		x	x	x	x	x	x		x			x	
M-20	M20-SW2	6/23/10	10:10	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-20						2	2													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)	Analytical Suite											Comments/Variances
							VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
43 & Building 1122	P43-SW2	6/22/10	9:36	na	na	SW	x	x	x		x	x		x			x	
43 & Building 1122	P43-SW3	6/22/10	9:18	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP43						2												
49 & Building 283	P49-SW2	6/23/10	8:53	na	na	SW	x	x	x		x	x		x			x	
49 & Building 283	P49-SW3	6/23/10	8:40	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP49						2												
61	P61-SW1	6/15/10	14:01	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP61						1												
69	P69-SW2	6/28/10	13:30	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP69						1												

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
NA	MP-SD1	6/25/10	12:05	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SD2	6/25/10	14:15	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SD3	6/25/10	15:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD1	6/25/10	13:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD2	6/24/10	14:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD12	6/21/10	15:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD13	6/25/10	11:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD11	6/21/10	10:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD14	6/16/10	14:12	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SW1	6/25/10	11:55	na	na		SW		x	x	x	x	x	x		x			x	
NA	MP-SW2	6/25/10	14:02	na	na		SW		x	x	x	x	x	x		x			x	
NA	MP-SW3	6/25/10	14:58	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW1	6/25/10	13:38	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW2	6/24/10	14:33	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW12	6/22/10	8:43	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW13	6/25/10	11:15	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW11	6/21/10	10:05	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW14	6/22/10	12:09	na	na		SW		x	x	x	x	x	x		x			x	
Total Upgradient Samples						9	9													
Total Samples at MP						83	38	0	121	121	121	115	38	38	83	38	83	83	121	

Notes:
ASTM - American Society for Testing and Materials
B/N - Base/Neutral
BEE - Baseline Ecological Evaluation
ECP - Environmental Condition of Property
IRP - Installation Restoration Property
na - not applicable
PCB - Polychlorinated Biphenyl
SD - Sediment
SS - Surface Soil
SW - Surface Water
TAL - Target Analyte List
TOC - Total Organic Carbon

Table 3-2
Sampling and Analytical Summary
Charles Wood Area

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Ssampled (SD, SW, and SS)			Analytical Suite											Comments/Variances
									VO+15 (Method 8260B)	BN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
CW-3	CW3-SD1	6/28/10	8:50	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD2	6/28/10	9:05	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD3	6/28/10	9:18	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD4	6/28/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD5	6/28/10	10:20	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD6	6/28/10	10:48	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SW4	6/28/10	9:50	na	na		SW		x	x	x	x	x	x		x			x	
CW-3	CW3-SW5	6/28/10	10:15	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at CW-3						6	2													
CW-6	CW6-SD1	6/18/10	16:32	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD2	6/18/10	16:14	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD3	6/18/10	16:42	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD4	6/18/10	16:47	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD5	6/24/10	10:35	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD6	6/24/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SW5	6/24/10	10:29	na	na		SW		x	x	x	x	x	x		x			x	
CW-6	CW6-SW6	6/24/10	9:33	na	na		SW		x	x	x	x	x	x		x			x	
CW-6	CW6-SS1	6/18/10	15:23	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS2	6/18/10	15:40	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS3	6/18/10	15:50	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS4	6/18/10	15:59	0	0.5			SS	x	x	x	x			x		x	x		
Total Samples at CW-6						6	2	4												
15	P15-SW1	6/24/10	12:33	na	na		SW		x	x	x		x	x		x			x	
15	P15-SW3	6/24/10	12:15	na	na		SW		x	x	x		x	x		x			x	
Total Samples at ECP15							2													

Table 3-2
Sampling and Analytical Summary
Charles Wood Area

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Ssampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	B/N+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
27	P27-SW1	6/25/10	15:58	na	na		SW		x	x	x		x	x		x			x	
27	P27-SW2	6/25/10	15:45	na	na		SW		x	x	x		x	x		x			x	
Total Samples at ECP27							2													
28	P28-SW1	6/24/10	11:54	na	na		SW		x	x	x		x	x		x			x	
28	P28-SW2	6/24/10	11:34	na	na		SW		x	x	x		x	x		x			x	
Total Samples for ECP28							2													
CW-3	CW3-SD7	6/28/10	11:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD8	6/28/10	12:10	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SW7	6/28/10	11:35	na	na		SW		x	x	x	x	x	x		x			x	
CW-3	CW3-SW8	na	na	na	na				x	x	x	x	x	x		x			x	Sample not collected. There was no water existing in the creek upstream of the CW3-SW7 sample location.
Total Upgradient Samples						2	1													
CWA	CWA-SD1	6/24/10	9:00	0	0.5	SD			x	x	x	x			x		x	x	x	Sample added to program to evaluate the furthest downgradient location within Wampum Brook on CWA.
CWA	CWA-SW1	6/24/10	8:55	na	na		SW		x	x	x	x	x	x		x			x	Sample added to program to evaluate the furthest downgradient location within Wampum Brook on CWA.
Total Samples Downgradient of CWA						1	1													
Total Samples at CWA						15	12	4	30	30	30	24	12	12	18	12	18	18	26	

Notes:
ASTM - American Society for Testing and Materials
B/N - Base/Neutral
BEE - Baseline Ecological Evaluation
CWA - Charles Wood Area
ECP - Environmental Condition of Property
IRP - Installation Restoration Property
na - not applicable
NEW - indicates location does not coincide with a previous sample location
PCB - Polychlorinated Biphenyl
SD - Sediment
SS - Surface Soil
SW - Surface Water
TAL - Target Analyte List
TOC - Total Organic Carbon

Table 3-3
Summary of Analytes Detected in Main Post Background Surface Water Samples

Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)									
Chloroform	140	NAV	0	0	1	9	2.9	2.9	M14-SW14
cis-1,2-Dichloroethene	NAV	NAV	0	0	3	9	1.3	3.3	MP-SW3
Tetrachloroethene	45	NAV	0	0	1	9	1.3	1.3	M2-SW2
SVOCs (ug/L)									
Anthracene	0.035	NAV	2	0	2	9	0.052	0.12	M14-SW14
Benzo(a)anthracene	0.025	NAV	2	0	2	9	0.23	0.23	M14-SW14; M3-SW12
Benzoic acid	NAV	NAV	0	0	1	9	12	12	MP-SW1
1,2,4-Trichlorobenzene	30	NAV	0	0	1	9	0.56	0.56	M14-SW14
Pesticides (ug/L)	***None detected***								
PCBs (ug/L)	***None detected***								
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	14	18	6.63	78.6	M3-SW12
Arsenic	150	36	0	0	2	18	4.67	4.73	M8-SW11-Diss
Barium	220	NAV	0	0	18	18	31.4	64.7	M2-SW1; MP-SW2-Diss
Calcium	NAV	NAV	0	0	18	18	22600	40700	M8-SW11
Iron	NAV	NAV	0	0	18	18	84.8	2520	M3-SW12
Lead	5.4	24	18	0	18	18	5.79	18.8	M2-SW1-Diss
Magnesium	NAV	NAV	0	0	18	18	3550	53800	M8-SW11
Manganese	NAV	NAV	0	0	18	18	32.1	106	M8-SW11
Mercury	0.77	0.94	0	0	2	18	0.09	0.11	MP-SW1-Diss
Nickel	33	22	0	0	15	18	4.65	15.8	MP-SW3
Potassium	NAV	NAV	0	0	18	18	2400	19900	M8-SW11
Sodium	NAV	NAV	0	0	18	18	24300	433000	M8-SW11
Thallium	10	NAV	0	0	5	18	3.33	8.77	M8-SW11
Zinc	85	81	0	0	18	18	38.1	59.9	MP-SW2
Misc. (ug/L)									
Hardness	na	na	na	na	9	9	71124	323391	M8-SW11

Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Main Post site and background samples (Appendix E)
na = Not Applicable

Table 3-4
Summary of Analytes Detected in Main Post Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	6	9	0.012	0.34	MP-SD2
Methylene chloride	0.159	NAV	0	0	4	9	0.0025	0.0088	MP-SD2
Toluene	2.5	2.5	0	0	1	9	0.013	0.013	MP-SD3
2-Butanone	NAV	NAV	0	0	2	9	0.0094	0.095	MP-SD2
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	2	2	2	9	0.11	0.12	M3-SD12
Acenaphthylene	0.044	0.044	1	1	1	9	0.089	0.089	MP-SD2
Anthracene	0.22	0.085	1	4	6	9	0.017	0.25	MP-SD3
Benzo(a)anthracene	0.32	0.261	4	4	7	9	0.018	1.2	MP-SD3
Benzo(a)pyrene	0.37	0.43	3	3	7	9	0.025	1.2	MP-SD3
Benzo(b)fluoranthene	10.4	1.8	0	0	5	9	0.066	1.8	MP-SD3
Benzo(g,h,i)perylene	0.17	0.17	3	3	3	9	0.38	0.87	MP-SD3
Benzo(k)fluoranthene	0.24	0.24	3	3	4	9	0.13	0.64	MP-SD3
bis(2-Ethylhexyl)phthalate	0.182	0.18216	0	0	1	9	0.069	0.069	M3-SD12
Butylbenzylphthalate	1.97	0.063	0	1	1	9	0.6	0.6	M2-SD2
Chrysene	0.34	0.384	4	4	5	9	0.064	1.7	MP-SD3
Dibenz(a,h)anthracene	0.06	0.063	1	1	1	9	0.088	0.088	M3-SD12
Dibenzofuran	NAV	NAV	0	0	2	9	0.062	0.082	MP-SD2
3,3'-Dichlorobenzidine	0.127	NAV	0	0	1	9	0.016	0.016	M3-SD13
Dimethylphthalate	NAV	NAV	0	0	9	9	0.28	0.79	MP-SD2
Fluoranthene	0.75	0.6	4	4	6	9	0.064	4.5	MP-SD3
Fluorene	0.19	0.019	1	2	2	9	0.13	0.32	MP-SD2
Indeno(1,2,3-c,d)pyrene	0.2	0.2	3	3	4	9	0.095	0.84	MP-SD3
Phenanthrene	0.56	0.24	3	4	5	9	0.15	3.1	MP-SD3
Pyrene	0.49	0.665	4	4	5	9	0.12	3	MP-SD3
Pesticides (mg/kg)									
4,4'-DDD	0.008	0.002	0	3	3	9	0.0022	0.0047	M2-SD1
4,4'-DDE	0.005	0.0022	0	1	2	9	0.0017	0.0034	M14-SD14
PCBs (mg/kg)									
Aroclor 1242	0.07	0.023	0	1	1	9	0.064	0.064	M2-SD2
Aroclor 1254	0.06	0.06	1	1	2	9	0.021	0.086	M2-SD1
Metals (mg/kg)									
Aluminum	25500	18000	0	0	9	9	965	17600	M3-SD13
Antimony	3	9.3	2	0	7	9	1.08	6.96	M2-SD2
Arsenic	6	8.2	7	6	9	9	0.68	61.6	M3-SD13
Barium	NAV	48	0	5	9	9	11.5	196	MP-SD2
Beryllium	NAV	NAV	0	0	9	9	0.2	3.83	MP-SD2
Cadmium	0.6	1.2	9	8	9	9	0.75	17.2	M3-SD13

Table 3-4
Summary of Analytes Detected in Main Post Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
Calcium	NAV	NAV	0	0	8	9	446	4310	MP-SD1
Chromium	26	81	8	3	9	9	9.24	125	M3-SD13
Cobalt	50	10	0	4	9	9	1.05	16.8	MP-SD2
Copper	16	34	3	2	6	9	1.88	165	M2-SD2
Iron	NAV	NAV	0	0	9	9	2960	162000	M3-SD13
Lead	31	47	4	2	9	9	5.61	945	M2-SD1
Magnesium	NAV	NAV	0	0	9	9	192	4650	M3-SD13
Manganese	630	260	0	1	9	9	4.86	551	MP-SD1
Mercury	0.2	0.15	1	1	8	9	0.02	0.424	MP-SD2
Nickel	16	21	4	3	9	9	2.55	53.5	MP-SD2
Potassium	NAV	NAV	0	0	9	9	507	12000	MP-SD1
Selenium	NAV	1	0	8	9	9	0.95	19	M3-SD13
Silver	1	1	1	1	1	9	11.2	11.2	MP-SD2
Sodium	NAV	NAV	0	0	9	9	28.6	1230	M8-SD11
Thallium	NAV	NAV	0	0	3	9	0.88	3.02	M3-SD13
Vanadium	NAV	57	0	4	9	9	6.82	218	M3-SD13
Zinc	120	150	5	4	9	9	31.4	423	MP-SD2
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	9	9	900	6100	MP-SD2

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable

Table 3-5
Summary of Analytes Detected in Charles Wood Area Background Surface Water Samples

Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)									
Methyl-tert-butyl ether	51000	18000	0	0	1	2	3.8	3.8	CW3-SW7
SVOCs (ug/L)									
Anthracene	0.035	NAV	1	0	1	2	0.11	0.11	CW3-SW7
Pesticides (ug/L)									
4,4'-DDD	NAV	NAV	0	0	1	2	0.008	0.008	CW3-SW7
PCBs (ug/L)									
Aroclor 1242	0.014	0.03	1	1	1	2	0.3	0.3	CW6-SW6
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	4	4	14	9500	CW3-SW7
Arsenic	150	36	0	0	2	4	6.83	20.7	CW3-SW7
Barium	220	NAV	0	0	4	4	73.8	131	CW3-SW7
Beryllium	3.6	NAV	0	0	1	4	0.8	0.8	CW3-SW7
Cadmium	0.14	8.8	3	0	3	4	0.8	2.07	CW3-SW7
Calcium	NAV	NAV	0	0	4	4	28400	30300	CW3-SW7
Chromium	19	50	1	1	2	4	2.55	55.5	CW3-SW7
Cobalt	24	NAV	2	0	3	4	7.94	29.4	CW6-SW6
Copper	6.5	3.1	1	1	1	4	9.99	9.99	CW3-SW7
Iron	NAV	NAV	0	0	4	4	1440	38400	CW3-SW7
Lead	5.4	24	3	1	3	4	6.32	69.7	CW3-SW7
Magnesium	NAV	NAV	0	0	4	4	5730	14100	CW3-SW7
Manganese	NAV	NAV	0	0	4	4	127	160	CW3-SW7
Mercury	0.77	0.94	0	0	2	4	0.1	0.41	CW3-SW7
Nickel	34	22	0	2	3	4	14.5	32.6	CW6-SW6
Potassium	NAV	NAV	0	0	4	4	3370	14300	CW3-SW7
Sodium	NAV	NAV	0	0	4	4	66800	120000	CW3-SW7-Diss
Vanadium	12	NAV	1	0	2	4	6.91	60.1	CW3-SW7
Zinc	88	81	1	1	4	4	45.2	149	CW3-SW7
Misc. (ug/L)									
Hardness	na	na	na	na	2	2	94486	133738	CW3-SW7

Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Charles Wood Area site and background samples (Appendix E).
na = Not Applicable

Table 3-6
Summary of Analytes Detected in Charles Wood Area Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	2	3	0.093	0.34	CW3-SD8
Methylene chloride	0.159	0.159	0	0	2	3	0.0093	0.013	CW3-SD7
Styrene	0.254	0.254	0	0	1	3	0.001	0.001	CW6-SD6
Toluene	2.5	2.5	0	0	1	3	0.002	0.002	CW6-SD6
2-Butanone	NAV	NAV	0	0	1	3	0.1	0.1	CW3-SD8
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	1	1	1	3	0.47	0.47	CW6-SD6
Acenaphthylene	0.044	0.044	1	1	1	3	1.6	1.6	CW6-SD6
Anthracene	0.22	0.085	1	1	3	3	0.011	0.3	CW6-SD6
Benzo(a)anthracene	0.32	0.261	1	1	1	3	0.028	1.0	CW6-SD6
Benzo(a)pyrene	0.37	0.43	1	1	3	3	0.03	1.2	CW6-SD6
Benzo(b)fluoranthene	10.4	1.8	0	1	1	3	2.1	2.1	CW6-SD6
Benzo(g,h,i)perylene	0.17	0.17	1	1	1	3	0.89	0.89	CW6-SD6
Benzo(k)fluoranthene	0.24	0.24	1	1	1	3	0.74	0.74	CW6-SD6
Chrysene	0.34	0.384	1	1	1	3	1.9	1.9	CW6-SD6
Dibenzofuran	NAV	NAV	0	0	1	3	0.48	0.48	CW6-SD6
Dimethylphthalate	NAV	NAV	0	0	3	3	0.45	1.6	CW3-SD7
Fluoranthene	0.75	0.6	1	1	1	3	4.9	4.9	CW6-SD6
Fluorene	0.19	0.019	1	1	1	3	0.82	0.82	CW6-SD6
Indeno(1,2,3-c,d)pyrene	0.2	0.2	1	1	1	3	0.98	0.98	CW6-SD6
2-Methylnaphthalene	0.07	0.07	1	1	1	3	1.3	1.3	CW6-SD6
Naphthalene	0.16	0.16	1	1	1	3	4.4	4.4	CW6-SD6
Phenanthrene	0.56	0.24	1	1	1	3	8.3	8.3	CW6-SD6
Pyrene	0.49	0.665	1	1	1	3	3.3	3.3	CW6-SD6
Pesticides (mg/kg)									
4,4'-DDD	0.008	0.002	0	1	1	3	0.0031	0.0031	CW3-SD7
PCBs (mg/kg)	***None detected***								
Metals (mg/kg)									
Aluminum	25500	18000	0	0	3	3	860	10200	CW3-SD7
Arsenic	6	8.2	0	0	3	3	0.68	5.43	CW3-SD8
Barium	NAV	48	0	2	3	3	4.41	140	CW3-SD8
Beryllium	NAV	NAV	0	0	3	3	0.38	1.14	CW3-SD7
Cadmium	0.6	1.2	2	0	3	3	0.38	1.08	CW3-SD7
Calcium	NAV	NAV	0	0	3	3	16.7	2480	CW3-SD7
Chromium	26	81	3	1	3	3	60.7	97.3	CW3-SD8
Cobalt	50	10	0	0	3	3	3.74	8.94	CW6-SD6
Copper	16	34	0	0	3	3	2.49	7.09	CW3-SD8
Iron	NAV	NAV	0	0	3	3	9040	14700	CW3-SD7
Lead	31	47	1	0	3	3	5.67	36	CW3-SD7
Magnesium	NAV	NAV	0	0	3	3	160	1900	CW3-SD7
Manganese	630	260	0	0	3	3	4.36	69.1	CW3-SD8
Mercury	0.2	0.15	1	1	3	3	0.064	0.251	CW3-SD7
Nickel	16	21	1	1	3	3	9.51	56.2	CW6-SD6
Potassium	NAV	NAV	0	0	3	3	441	2000	CW3-SD7
Selenium	NAV	1	0	3	3	3	1.82	4.15	CW3-SD8
Sodium	NAV	NAV	0	0	3	3	150	4050	CW3-SD8
Vanadium	NAV	57	0	0	3	3	10.7	50.3	CW3-SD7
Zinc	120	150	0	0	3	3	15.3	84.9	CW3-SD7
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	3	2	540	8200	CW3-SD8

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable

Table 3-7
Summary of Analytes Detected in Charles Wood Area Downgradient Surface Water Samples

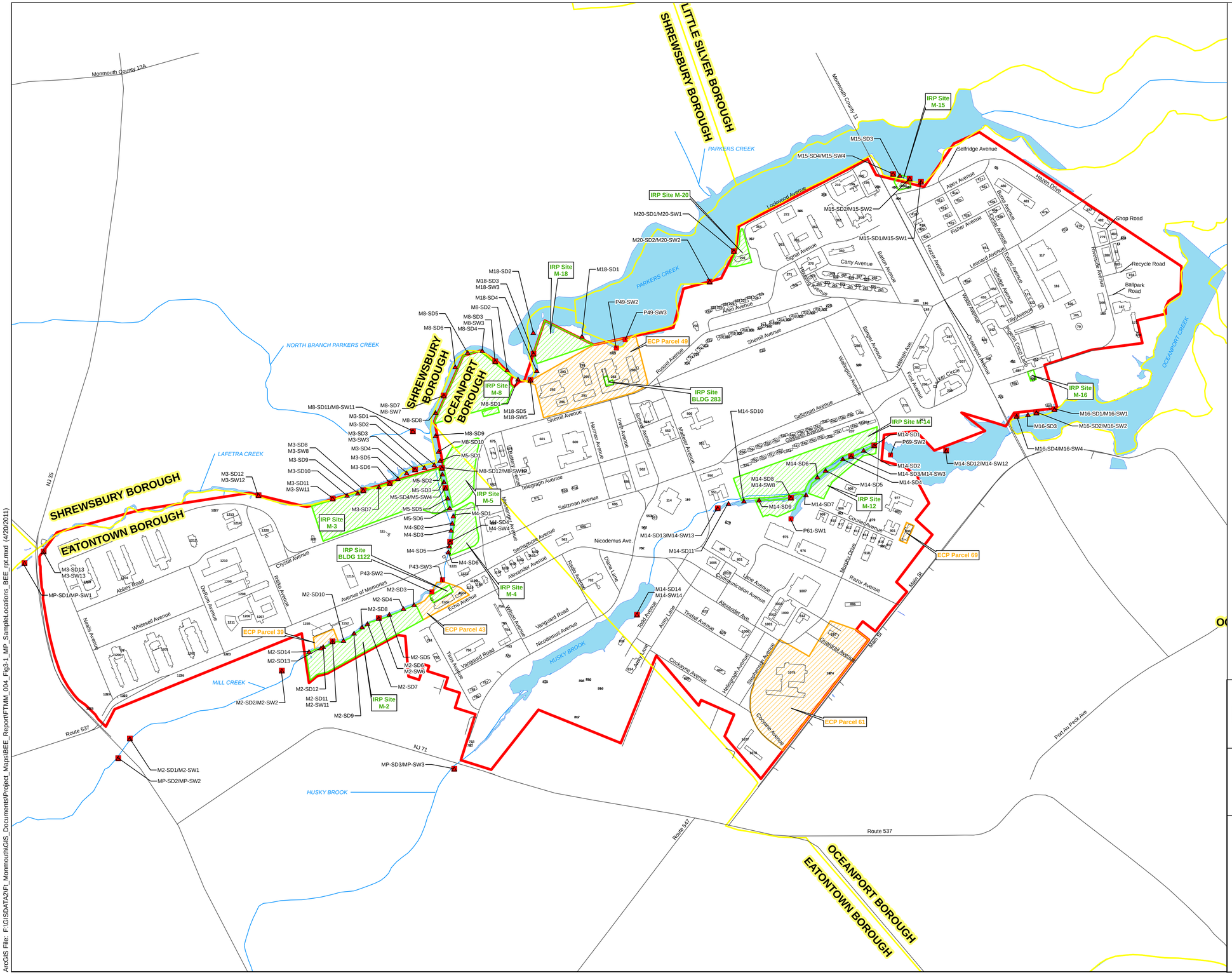
Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)	***None detected***								
SVOCs (ug/L)									
Hexachlorobutadiene	0.053	NAV	1	0	1	2	0.12	0.12	CWA-SW1
Pesticides (ug/L)	***None detected***								
PCBs (ug/L)	***None detected***								
Aroclor 1242	0.014	0.03	1	1	0	2	0.13	0.13	CW6-SW5
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	4	4	11.4	130	CW6-SW5
Arsenic	150	36	0	0	2	4	7.47	10.2	CWA-SW1
Barium	220	NAV	0	0	2	4	58.5	76.1	CWA-SW1
Cadmium	0.14	8.8	1	0	1	4	0.52	0.52	CW6-SW5
Calcium	NAV	NAV	0	0	4	4	29600	45600	CWA-SW1
Iron	NAV	NAV	0	0	4	4	252	10800	CWA-SW1
Lead	5.4	24	4	0	4	4	8.09	14	CWA-SW1-Diss
Magnesium	NAV	NAV	0	0	4	4	4490	4830	CW6-SW5
Manganese	NAV	NAV	0	0	4	4	109	591	CWA-SW1
Nickel	34	22	0	1	2	4	20.8	23	CW6-SW5
Potassium	NAV	NAV	0	0	4	4	3100	5340	CWA-SW1
Selenium	5	71	1	0	1	4	5.33	5.33	CWA-SW1-Diss
Sodium	NAV	NAV	0	0	4	4	36100	55500	CW6-SW5
Zinc	88	81	0	0	4	4	48.3	80.1	CW6-SW5
Misc. (ug/L)									
Hardness	na	na	na	na	2	2	95205	132498	CWA-SW1

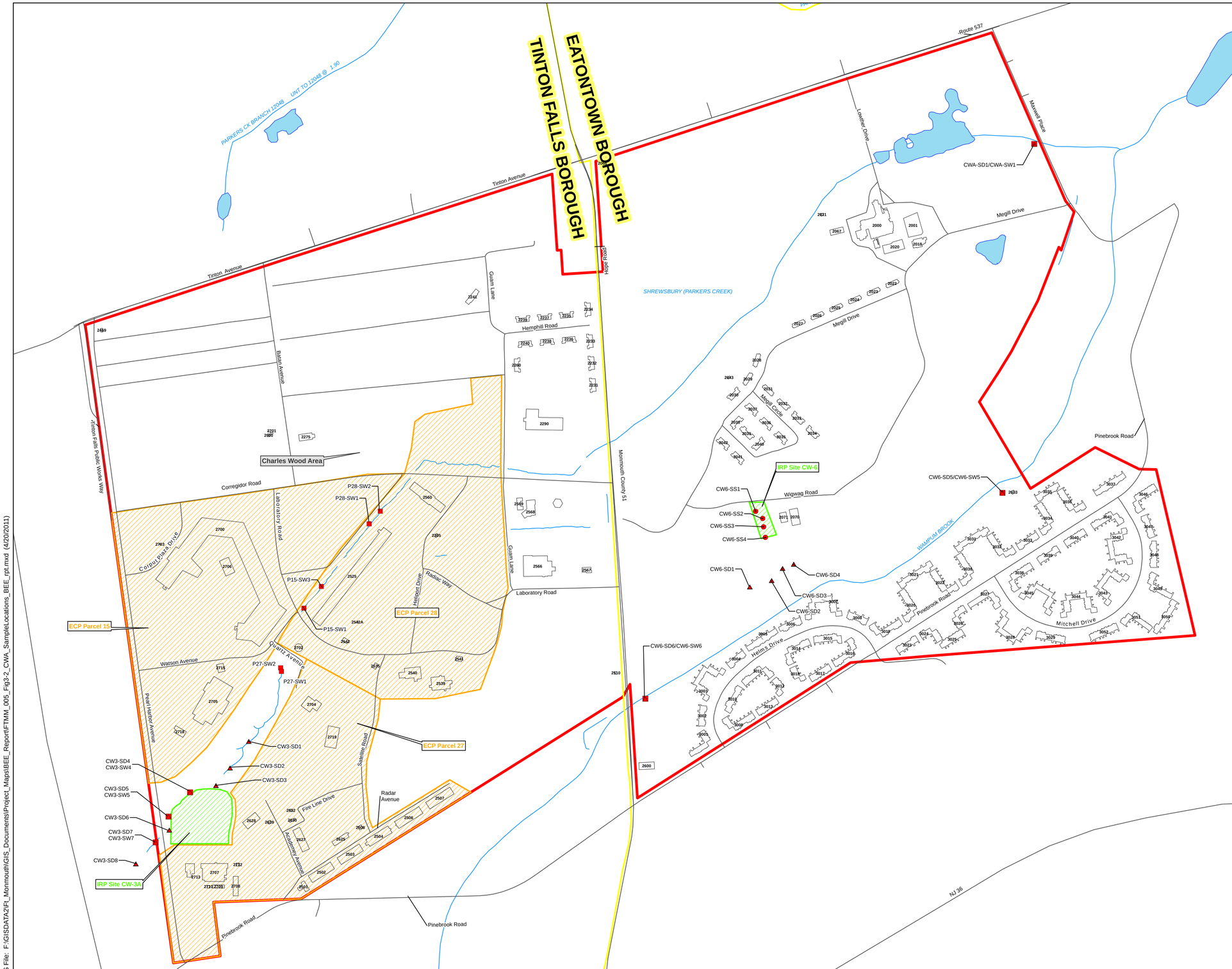
Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Charles Wood Area site and background samples (Appendix E).
na = Not Applicable

Table 3-8
Summary of Analytes Detected in Charles Wood Area Downgradient Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	2	2	0.015	0.021	CWA-SD1
Methylene chloride	0.159	NAV	0	0	1	2	0.0032	0.0032	CWA-SD1
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	1	1	1	2	0.49	0.49	CWA-SD1
Anthracene	0.22	0.085	0	0	2	2	0.0053	0.082	CWA-SD1
Benzo(a)anthracene	0.32	0.261	0	0	2	2	0.031	0.033	CW6-SD5
Benzo(a)pyrene	0.37	0.43	0	0	2	2	0.02	0.036	CW6-SD5
Dimethylphthalate	NAV	NAV	0	0	2	2	0.43	0.53	CWA-SD1
Fluoranthene	0.75	0.6	0	0	1	2	0.093	0.093	CW6-SD5
Phenanthrene	0.56	0.24	1	1	1	2	0.6	0.6	CWA-SD1
Pyrene	0.49	0.665	0	0	1	2	0.068	0.068	CW6-SD5
Pesticides (mg/kg)	***None detected***								
PCBs (mg/kg)	***None detected***								
Aroclor 1242	0.07	0.023	0	1	1	2	0.05	0.05	CW6-SD5
Metals (mg/kg)									
Aluminum	25500	18000	0	0	2	2	2170	4170	CWA-SD1
Antimony	3	9.3	0	0	1	2	0.76	0.76	CWA-SD1
Arsenic	6	8.2	1	0	2	2	3.18	6.29	CWA-SD1
Barium	NAV	48	0	0	2	2	13.1	40.3	CWA-SD1
Beryllium	NAV	NAV	0	0	2	2	0.44	1.02	CW6-SD5
Cadmium	0.6	1.2	2	1	2	2	1.15	1.34	CW6-SD5
Calcium	NAV	NAV	0	0	1	2	5370	5370	CWA-SD1
Chromium	26	81	2	0	2	2	32.8	50.2	CW6-SD5
Cobalt	50	10	0	0	2	2	3.36	5.82	CW6-SD5
Copper	16	34	0	0	2	2	4.63	15.6	CWA-SD1
Iron	NAV	NAV	0	0	2	2	14200	15700	CW6-SD5
Lead	31	47	1	0	2	2	13.4	32.4	CWA-SD1
Magnesium	NAV	NAV	0	0	2	2	316	1270	CWA-SD1
Manganese	630	260	0	0	2	2	4.9	59.6	CWA-SD1
Mercury	0.2	0.15	1	1	2	2	0.047	0.249	CWA-SD1
Nickel	16	21	1	1	2	2	8.06	29.7	CW6-SD5
Potassium	NAV	NAV	0	0	2	2	871	1560	CWA-SD1
Selenium	NAV	1	0	2	2	2	2.72	3.17	CW6-SD5
Sodium	NAV	NAV	0	0	2	2	133	238	CWA-SD1
Vanadium	NAV	57	0	0	2	2	19.9	24.1	CWA-SD1
Zinc	120	150	0	0	2	2	49.8	104	CWA-SD1
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	2	2	3700	4700	CW6-SD5

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable


SHREWSBURY BOROUGH
LITTLE SILVER BOROUGH
OCEANPORT BOROUGH
EATONTOWN BOROUGH
PARKERS CREEK
NORTH BRANCH PARKERS CREEK
LAFETRA CREEK
MILL CREEK
HUSKY BROOK
OCEANPORT CREEK
Monmouth County 13A
Monmouth County 11
NJ 35
Route 537
NJ 71
Route 547
Port Au Peck Ave
IRP Site M-15
IRP Site M-20
IRP Site M-18
IRP Site M-8
IRP Site BLDG 283
IRP Site M-14
IRP Site M-16
IRP Site M-12
IRP Site M-5
IRP Site M-3
IRP Site BLDG 1122
IRP Site M-4
IRP Site M-2
ECP Parcel 49
ECP Parcel 69
ECP Parcel 39
ECP Parcel 43
ECP Parcel 61
M15-SD3
M15-SD4/M15-SW4
M15-SD2/M15-SW2
M15-SD1/M15-SW1
M20-SD1/M20-SW1
M20-SD2/M20-SW2
P49-SW2
P49-SW3
M18-SD1
M18-SD2
M18-SD3
M18-SW3
M18-SD4
M18-SD5
M18-SW5
M8-SD1
M8-SD2
M8-SD3
M8-SW3
M8-SD4
M8-SD5
M8-SD6
M8-SD7
M8-SW7
M8-SD8
M8-SD9
M8-SD10
M8-SD11/M8-SW11
M8-SD12/M8-SW12
M3-SD1
M3-SD2
M3-SD3
M3-SW3
M3-SD4
M3-SD5
M3-SD6
M3-SD7
M3-SD8
M3-SW8
M3-SD9
M3-SD10
M3-SD11
M3-SW11
M3-SD12
M3-SW12
M3-SD13
M3-SW13
MP-SD1/MP-SW1
M5-SD1
M5-SD2
M5-SD3
M5-SD4/M5-SW4
M5-SD5
M5-SD6
M4-SD1
M4-SD2
M4-SW2
M4-SD3
M4-SD5
M4-SD6
P43-SW2
P43-SW3
M2-SD1/M2-SW1
M2-SD2/M2-SW2
M2-SD3
M2-SD4
M2-SD5
M2-SD6
M2-SW6
M2-SD7
M2-SD8
M2-SD9
M2-SD10
M2-SD11
M2-SW11
M2-SD12
M2-SD13
M2-SD14
MP-SD2/MP-SW2
MP-SD3/MP-SW3
M14-SD1
P69-SW2
M14-SD2
M14-SD3/M14-SW3
M14-SD4
M14-SD5
M14-SD6
M14-SD7
M14-SD8
M14-SW8
M14-SD9
M14-SD10
M14-SD11
M14-SD12/M14-SW12
M14-SD13/M14-SW13
M14-SD14
M14-SW14
P61-SW1
M16-SD1/M16-SW1
M16-SD2/M16-SW2
M16-SD3
M16-SD4/M16-SW4
Selfridge Avenue
Lockwood Avenue
Signal Avenue
Carty Avenue
Barton Avenue
Fisher Avenue
Apex Avenue
Burns Avenue
Hayden Drive
Shop Road
Recycle Road
Ballpark Road
Leonard Avenue
Evans Avenue
Tilly Avenue
Pigeon Coop Lane
Allen Avenue
Sherrill Avenue
Russel Avenue
Sumner Avenue
Wallington Avenue
Oceanview Avenue
Water Circle
First Avenue
Hildreth Ave.
Saltzman Avenue
Gravelly Hill Avenue
Telegraph Avenue
Halstead Avenue
Joyce Avenue
Brown Avenue
Mattison Avenue
Churchill Avenue
Murphy Drive
Nicodemus Ave.
Semaphore Avenue
Alexander Avenue
Communication Avenue
Liane Avenue
Razor Avenue
Main St
Army Lane
Tindall Avenue
Todd Avenue
Heliograph Avenue
Stephenson Avenue
Cockayne Avenue
Gridley Avenue
Crystal Avenue
Abbey Road
Whitesell Avenue
Nevills Avenue
DeRum Avenue
Ribbo Avenue
Avenue of Memories
Echo Avenue
Vanguard Road
Nicodemus Avenue
Wilson Avenue
Trout Avenue
Diana Lane
Ribbo Avenue
Monmouth Avenue
Crystal Avenue
Shrewsbury Avenue
Oceanport Avenue
Gravelly Hill Avenue
Hillcrest Avenue
Hillside Avenue
Horseneck Avenue
Oceanport Avenue
Cockayne Avenue
Route 537
Route 547
Port Au Peck Ave
N
Scale:
0
425
850
1,700
Feet
LEGEND
Sample Locations
Sediment Sample Location
Surface Water Sample Location
Sediment/Surface Water Sample Location
Road Centerline
Building
Municipal Boundary
Water Feature
Water Body
IRP Site
ECP Parcel
Installation Boundary
Base Realignment and Closure 2005
U.S. Army Corps of Engineers
Shaw Environmental, Inc.
FIGURE 3-1
FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT
SAMPLE LOCATIONS
MAIN POST
FORT MONMOUTH
NEW JERSEY
ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_004_Fig3-1_MP_SampleLocations_BEE_rpt.mxd (4/20/2011)



LEGEND

Sample Locations

- Sediment Sample Location
- Surface Water Sample Location
- Sediment/Surface Water Sample Location
- Surface Soil Sample Location
- Road Centerline
- Water Feature
- Building
- Municipal Boundary
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3-2

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

SAMPLE LOCATIONS

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_005_Fig3-2_CWA_SampleLocations_BEE_rpt.mxd (4/20/2011)

4.0 DISCUSSION

COPECs were identified in the previous section through a comparison of analytical data from site media (surface soil, groundwater, surface water, and sediment) to concentrations used as screening levels for ecological concern. A qualitative determination of the potential for adverse effects from site constituents is made in this section based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents.

4.1 MAIN POST

On the MP, 13 IRP Sites and five ECP Parcels were addressed in this BEE. Two of the IRP sites are contained within ECP Parcels and are addressed as one.

4.1.1 LANDFILL 2 (FTMM-2)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, PCBs, SVOCs, and metals as COPECs in near surface soil and one VOC, several pesticides, and several metals as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Two SVOCs and lead were identified as COPECs in surface water. PCBs, SVOCs, and metals were identified as COPECs in sediment. Though 4,4′-DDE and cadmium were not detected in surface water, their surface water MDLs were greater than the applicable ESC. Given that 4,4′-DDE is a COPEC in soil and cadmium is a COPEC in soil, groundwater, and sediment, they are considered possible COPECs in surface water. **Table 4-1** and **Table 4-2** provide a summary of the COPECs in surface water and sediment at Landfill 2 (FTMM-2) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek and to the east and west of Landfill 2 (**Figure 4-1**) as well as herbaceous wetlands across the site (**Figure 4-2**). A site visit on September 9, 2009, confirmed the presence of deciduous wetlands bordering Mill Creek and Landfill 2 (FTMM-2); however, the site itself was typical of upland habitat and not herbaceous wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Landfill 2 (FTMM-2) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, pesticides, and PCBs in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though identified as COPECs in near surface soil or groundwater, VOCs and pesticides were not identified as COPECs in surface water or sediment where exposure may occur.
- Lead concentrations in sediment were similar to those in background samples (**Table 3-3**).
- PCBs in sediment at low concentrations are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs were low, mostly within a factor of 2 of the LELs used for screening and orders of magnitude less than the SELs, and detected concentrations were similar to those in background samples (**Table 3-4**).

- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**). These SVOCs, though some were identified as COPECs in soil, were not identified as COPECs in groundwater indicating that their current presence in surface water and sediment may not be due to migration from Landfill 2 (FTMM-2).
- The concentrations of metals in surface water and sediment exceeding ESC were similar to those found in background samples (**Table 3-3** and **Table 3-4**).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to two PAHs and lead and COPECs in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations relative to the ESC and similar to background concentrations. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 2 (FTMM-2) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 2 (FTMM-2) are not warranted or recommended.

4.1.2 LANDFILL 3 (FTMM-3)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified one PCB, several pesticides, SVOCs, and metals as COPECs in near surface soil. VOCs were not identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils, the COPECs in soil may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two pesticides and several metals were identified as COPECs in sediment. **Table 4-3** and **Table 4-4** provide a summary of the COPECs in surface water and sediment at Landfill 3 (FTMM-3) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of freshwater tidal wetlands (**Figure 4-2**) along Lafetra Creek opposite Landfill 3 (FTMM-3) as well as deciduous wetlands (**Figure 4-1**) further to the north and to the west of Landfill 3 (FTMM-3).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species and that Lafetra Creek as well as the adjacent wetlands are Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 3 (FTMM-3) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- With the exception of two PAHs and 4,4′-DDT, SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- The concentration of 4,4′-DDD (0.0095 mg/kg) exceeded the saltwater sediment ESC (0.002 mg/kg). One detected concentration (0.18 mg/kg) of 4,4′-DDT, exceeded the ER-L value used for screening (0.001 mg/kg) as well as the ER-M value (0.007 mg/kg) but similar to that reported in SI background samples for sediment and soil (Weston, 1995).

- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- PAHs, though identified as COPECs in near surface soil, were not identified as COPECs in surface water or sediment where ecological exposure may occur.
- With the exception of the concentration of copper in one sediment sample, the concentrations of metals were similar to those found in background samples (**Table 3-3** and **Table 3-4**). The remaining sediment sample copper concentrations were low with respect to the ESC and similar to that in most of the background samples.

Within the landfill, COPECs were identified in soils that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The metals COPECs in sediment, though potentially related to landfill soil COPECs, are mostly found at low concentrations in relation to the ESC and similar to background concentrations. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 3 (FTMM-3) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 3 (FTMM-3) are not warranted or recommended.

4.1.3 LANDFILL 4 (FTMM-4)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified a few pesticides, two SVOCs, and several metals as COPECs in near surface soil. Five metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two pesticides, three PCBs, six SVOCs, and six metals were identified as COPECs in sediment. **Table 4-5** and **Table 4-6** provide a summary of the COPECs in surface water and sediment at Landfill 4 (FTMM-4) as well as background and ambient levels of those constituents.

No significant habitats in the vicinity of Landfill 4 are identified within the GIS digital data available through the NJDEP.

The potential for ecological effects from COPECs at Landfill 4 (FTMM-4) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- With the exception of 4,4′-DDT, pesticide and SVOC concentrations in soil exceeding COPECs were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though identified as COPECs in near surface soil, pesticides were not identified as COPECs in surface water and detected infrequently in sediment where ecological exposures may occur. Detected concentrations in sediment were low with respect to the applicable ESC.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though PCBs were detected in sediment, they were not detected in near surface soils at Landfill 4 (FTMM-4), and may not be related to the Landfill. PCBs at low concentrations are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs in sediment were low, all within a factor of 8 of the ER-Ls used for screening and orders of

magnitude less than the ER-Ms, and detected concentrations were similar to those in background samples (**Table 3-4**).

- PAHs in surface water and sediment have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**).
- The concentrations of metals in surface water and sediment were similar to those found in background samples (**Table 3-3** and **Table 3-4**).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to lead which is found at similar concentrations within background samples. The metals COPECs in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are found at low concentrations in relation to the ESC and similar to background concentrations. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 4 (FTMM-4) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 4 (FTMM-4) are not warranted or recommended.

4.1.4 LANDFILL 5 (FTMM-5)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified one PCB, several pesticides, SVOCs, and metals as COPECs in near surface soil. No VOCs were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, several SVOCs, and several metals were identified as COPECs in sediment. **Table 4-7** and **Table 4-8** provide a summary of the COPECs in surface water and sediment at Landfill 5 (FTMM-5) as well as background and ambient levels of those constituents.

Though the GIS digital data available through the NJDEP do not indicate the presence of critical habitats at Landfill 5 (FTMM-5), the forested area to the north is Habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 5 (FTMM-5) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, pesticides, and PCBs in soil were detected infrequently at concentrations exceeding the ESC.
- No VOCs were identified as COPECs in groundwater that may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).

- All detected concentrations of the pesticides 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were within a factor of eight of the saltwater sediment ESC (most were within a factor of three of the ER-Ls) and below the ER-Ms.
- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**).
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-3** and **Table 3-4**).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. COPECs in sediment, though potentially related to landfill soil COPECs, are at low concentrations and similar to background concentrations. Pesticides in sediment, though potentially related to landfill soil, were detected infrequently and at low concentrations in relation to the ESC. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 5 (FTMM-5) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 5 (FTMM-5) are not warranted or recommended.

4.1.5 LANDFILL 8 (FTMM-8)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, PCBs, SVOCs, and metals as COPECs in near surface soil. Several pesticides were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soils and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two PCBs, 4,4′-DDD, and several metals were identified as COPECs in sediment. **Table 4-9** and **Table 4-10** provide a summary of the COPECs in surface water and sediment at Landfill 8 (FTMM-8) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated wetlands (**Figure 4-2**) along Parkers Creek opposite Landfill 8 (FTMM-8), with deciduous shrub/scrub wetlands and deciduous wetlands present further from the landfill (**Figure 4-1**). Landfill 8 (FTMM-8) is identified as a coastal forest habitat.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas across Parkers Creek and the forested areas on Landfill 8 (FTMM-8) are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek, as well as the wetlands and forested area, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 8 (FTMM-8) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, PCBs, and pesticides in soil were detected infrequently at concentrations exceeding the ESC.

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though several pesticides were identified as COPECs in near surface soil and groundwater, only 4,4′-DDD was detected as a COPEC in sediment where ecological exposure may occur indicating no significant migration of organic COPECs from the landfill.
- The three detected concentrations (0.0021, 0.0023, and 0.0033 mg/kg) in sediment of the pesticide, 4,4′-DDD, were only marginally greater than the saltwater sediment ESC (0.002 mg/kg).
- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water where ecological exposures may occur.
- PCBs at low concentrations in sediment are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs in sediment were all within a factor of eight of the ER-Ls and orders of magnitude less than the ER-Ms, and detected concentrations were similar to those in background samples (**Table 3-4**).
- Though identified as PAHs in near surface soil, PAHs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- The concentrations of metals were similar to those found in background samples for the BEE investigation (**Table 3-3** and **Table 3-4**) or the background soil and sediment concentrations reported in the SI (Weston, 1995).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Pesticides and PCBs in sediment, though potentially related to landfill soil, were detected infrequently and at low concentrations in relation to the ESC. Metals in sediment were found at concentrations similar to the background concentrations from the BEE investigation or SI. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 8 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 8 (FTMM-8) are not warranted or recommended.

4.1.6 LANDFILL 12 (FTMM-12)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, SVOCs, and metals as COPECs in near surface soil. Several metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, one PCB, several PAHs and several metals were identified as COPECs in sediment. **Table 4-11** and **Table 4-12** provide a summary of the COPECs in surface water and sediment at Landfill 12 (FTMM-12) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded (**Figure 4-1**) wetlands along both banks of Husky Brook in the western half of Landfill 12 (FTMM-12). Based on site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 12 (FTMM-12), on the opposite side of Wallington

Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and forested areas of Landfill 12 (FTMM-12), is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 12 (FTMM-12) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in near surface soils under a clean soil cover and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most of the SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points in Husky Brook.
- No VOCs were identified as a COPEC in surface water or sediment.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Several pesticides were identified as COPECs in near surface soil. Of these, only three (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected at concentrations exceeding the criteria in sediment. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were generally only marginally above the saltwater sediment ESC (0.001 to 0.0022 mg/kg).
- Though one PCB was identified as a COPEC in sediment, PCBs were not identified as COPECs in near surface soil and their presence in sediment may not be related to the landfill.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**); the highest concentrations were west of Landfill 12 (FTMM-12) near Malterer Avenue and are more likely due to runoff from roads and parking surfaces than from the landfill. Though above the ER-Ls used for screening, all concentrations were well below the ER-Ms.
- No COPECs were identified in surface water.
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The concentrations of metals in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations in relation to the ESC and similar to background concentrations. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 12 (FTMM-12) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 12 (FTMM-12) are not warranted or recommended.

4.1.7 LANDFILL 14 (FTMM-14)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, SVOCs, and metals

as COPECs in near surface soil. Several metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, one PCB, several PAHs and several metals were identified as COPECs in sediment. **Table 4-13** and **Table 4-14** provide a summary of the COPECs in surface water and sediment at Landfill 14 (FTMM-14) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands (**Figure 4-1**) along both banks of Husky Brook in the western half of Landfill 14 (FTMM-14) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 14 (FTMM-14), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and forested areas of Landfill 14 (FTMM-14), is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 14 (FTMM-14) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in near surface soils under a clean soil cover and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points.
- No VOCs were identified as COPECs in groundwater, surface water, or sediment.
- No COPECs were identified in surface water.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Several pesticides were identified as COPECs in near surface soil. Of these, only three (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected at concentrations exceeding the criteria in sediment. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were generally only marginally above the saltwater sediment ESC (0.001 to 0.0022 mg/kg).
- Though one PCB was identified as a COPEC in sediment, PCBs were not identified as COPECs in near surface soil and their presence in sediment may not be related to the landfill.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs were at low concentrations and similar to those identified in background samples (**Table 3-3** and **Table 3-4**); the highest concentrations were west of Landfill 14 (FTMM-14) near Malterer Avenue and are more likely

due to runoff from roads and parking surfaces than from the landfill. Though above the ER-Ls used for screening, all concentrations were well below the ER-Ms.

- The concentrations of metals were similar to those found in background samples (**Table 3-4**).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The concentrations of metals in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations in relation to the ESC and similar to background concentrations. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 14 (FTMM-14) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 14 (FTMM-14) are not warranted or recommended.

4.1.8 WATER TANK (FTMM-15)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified in surface water. One pesticide and several metals were identified as COPECs in sediment. **Table 4-15** provides a summary of the COPECs in sediment at Site FTMM-15 as well as background and ambient levels of those constituents.

No significant habitats in the vicinity of FTMM-15 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-15 is judged to be minimal for the following reasons:

- No VOCs, SVOCs, or PCBs were identified as COPECs in surface water or sediment where ecological exposures could occur.
- No pesticides or metals were identified as COPECs in surface water.
- The detected concentration (0.0041 mg/kg) of one pesticide, 4,4′-DDT, identified as a COPEC in sediment exceeded the saltwater ER-L (0.001 mg/kg) but less than the ER-M (0.007 mg/kg).
- The concentrations of metals were similar to those found in background samples (**Table 3-4**).

No COPECs were identified in surface water. Only one pesticide, in one sample at a low concentration, and metals were identified as COPECs in sediment. Metals were similar to background. Based on these considerations and the information provided in this report, it is concluded that constituents at Site FTMM-15 are unlikely to have a significant effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site M-15 are not warranted or recommended.

4.1.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. One SVOC and several metals were identified as COPECs in sediment. **Table 4-16** and **Table 4-17** provide a summary of the COPECs in surface water and sediment at Site FTMM-16 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of low marsh saline wetlands west of the marina and east of Oceanport Avenue (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that wetland area along Oceanport Creek is habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Oceanport Creek, as well as the wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-16 is judged to be minimal for the following reasons:

- No VOCs, pesticides, or PCBs were identified as COPECs in surface water or sediment where ecological exposures could occur.
- No PCBs or metals were identified as COPECs in surface water.
- The only SVOC identified as a COPEC in sediment, hexachlorobutadiene, was only detected in one sample and the concentration (0.008 mg/kg) was within an order of magnitude of the saltwater ESC (0.0013 mg/kg).
- The concentrations of two metals were found in sediment at concentrations above those in background samples (**Table 3-4**): chromium and zinc. Site FTMM-16 is a concern due to the presence of pesticides that were detected to have migrated from the site (a soil removal action was completed in 1999). Chromium, lead, and zinc are not expected to be found related to the operations of the Pesticide Storage Area. These concentrations were detected in sediments collected from an active marina and are more likely due to marina activities rather than those related to pesticide storage at Site FTMM-16 or to natural geology or regional anthropogenic deposition; chromium concentrations were similar to those reported for ambient soils in the urban coastal plain (BEM Systems, Inc., 1998), similar to the range of background soil reported for the SI (Weston, 1995), and less than that reported for glauconitic soils (median concentration of 348 mg/kg) by Dooley (2001).

No COPECs were identified in surface water. Only one SVOC, in one sample at a low concentration, and metals were identified as COPECs in sediment. Though most metals were similar to background, chromium and zinc showed some elevated levels but these are more likely due to marina activities rather than those related to pesticide storage at Site FTMM-16 or natural geology and regional anthropogenic deposition. Based on these considerations and the information provided in this report, constituents related to Site FTMM-16 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-16 are not warranted or recommended.

4.1.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified two pesticides, two SVOCs, and several metals as COPECs in near surface soil. A few metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. **Table 4-18** and **Table 4-19** provide a summary of the COPECs in surface water and sediment at Site FTMM-18 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands and high marsh saline wetlands adjacent to Parkers Creek (**Figure 4-2**); based on on-site observations, there is also an area of deciduous wetlands between the maintained lawns and the emergent wetlands and there are small emergent wetlands within the area of maintained lawn.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Parkers Creek are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek as well as the associated wetlands are listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-18 is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- The pesticide and PCB COPECs identified in soils were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- A few metals were identified as COPECs in groundwater that may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though a pesticide and a PAH were identified as COPECs in near surface soils, they were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- With the exception of the concentrations of silver in two sediment samples, the concentrations of metals were similar to those found in background samples from the BEE investigation (**Table 3-3** and **Table 3-4**) or SI (Weston, 1995). Siler was identified as a COPEC in near surface soil but not in groundwater or surface water.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Only metals were identified as COPECs in sediment. Though most metals in sediment were found at concentrations similar to background, silver was detected at concentrations above background. Potential risks due to exposure to elevated silver are limited in area around Site FTMM-18. Based on these considerations and the information provided in this report, constituents related to Site FTMM-18 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-18 are not warranted or recommended.

4.1.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in sediment, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. **Table 4-20** and **Table 4-21** provide a summary of the COPECs in surface water and sediment at Site FTMM-20 as well as background and ambient levels of those constituents.

No significant habitats in the vicinity of Site FTMM-20 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-20 is judged to be minimal for the following reasons:

- No VOCs, SVOCs, pesticides, or PCBs were identified as COPECs in surface water or sediment where ecological exposures may occur.
- No metals were identified as COPECs in surface water.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**). Additionally, though Parkers Creek is tidal in the area of Site FTMM-20, the greatest concentrations were found in the upstream samples.

No COPECs were identified in surface water. Only metals were identified as COPECs in sediment. The concentrations of metals in sediment were similar to those in background, consistent with the findings of the SI report (Weston, 1995). Based on these considerations and the information provided in this report, it is concluded that constituents at Site FTMM-20 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-20 are not warranted or recommended.

4.1.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43)

Groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater, but ecological receptors may be exposed to surface water or sediment. No COPECs were identified in groundwater. Only three PAHs and lead were identified as COPECs in surface water. Several PAHs and metals were identified as COPECs in sediment. Though cadmium was not detected in surface water, its MDLs were greater than the freshwater ESC and cadmium was identified as a COPEC in sediment; therefore, cadmium is considered a potential COPEC in surface water. **Table 4-22** and **Table 4-23** provide a summary of the COPECs in surface water and sediment at Parcel 43 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek in the area of Building 1122 (FTMM-59) and Parcel 43.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Building 1122 (FTMM-59) and Parcel 43 is judged to be minimal for the following reasons:

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- Pesticides, PCBs, and VOCs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**).
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs in surface water and sediment identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**).

- With the exception of chromium, the concentrations of metals were similar to those found in background samples from the BEE investigation (**Table 3-4**) or SI (Weston, 1995). Chromium concentrations were within the range of ambient soil levels determined for the urban coastal region (BEM Systems, Inc., 1998), the range of background soil concentrations reported for the SI (Weston, 1995), and the range of concentrations reported for glauconitic soils (Dooley, 2001); thus, chromium may be related to natural geology or regional deposition.

No COPECs were identified in groundwater. The only metal identified as a COPEC in surface water was lead, which was found at concentrations similar to background. PAHs identified as COPECs in surface water and sediment were identified at concentrations similar to background and are likely related to general runoff from road surfaces in the area. Though most metals in sediment were found at concentrations similar to background sediment, chromium was detected at concentrations above sediment background but within the range of ambient soil concentrations and below median concentrations for glauconitic soils. Based on these considerations and the information provided in this report, it is concluded that constituents at Building 1122 (FTMM-59) and Parcel 43 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Building 1122 (FTMM-59) and Parcel 43 are not warranted or recommended.

4.1.13 BUILDING 1150 (ECP PARCEL 39)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in soil. Only two PAHs and lead were identified as COPECs in surface water. One PCB, five PAHs, and several metals were identified as COPECs in sediment. Though cadmium was not detected in surface water, its MDLs were greater than the freshwater ESC and cadmium was identified as a COPEC in soil and sediment; therefore, cadmium is considered a potential COPEC in surface water. **Table 4-24** and **Table 4-25** provide a summary of the COPECs in surface water and sediment at Parcel 39 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands and herbaceous wetlands along Mill Creek in the area of Parcel 39 (**Figure 4-1** and **Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the forested wetland area along Mill Creek adjacent to Parcel 39 is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 39 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 39 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- No VOCs, PCBs, or SVOCs were identified as COPECs in soil.
- Though one PCB was identified as a COPEC in sediments, it was not identified as a COPEC in other site media. PCBs were not identified as COPECs in surface water or soil and may not be related to Parcel 39. The concentration of PCBs was marginally above the ESC.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**).
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs in surface water and sediment were

at low concentrations and were similar to those in background samples (**Table 3-3** and **Table 3-4**).

- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).

In soil at Parcel 39, only metals were identified as COPECs. These soils are limited in area and are located near buildings and active areas where the potential for ecological exposures is limited. Metals and PAHs in surface water or sediment were at concentrations similar to background. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 39 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats and the potential for ecological risk is considered low, and additional ecological assessments at Parcel 39 are not warranted or recommended.

4.1.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed groundwater and have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. One PCB, several PAHs, and metals were identified as COPECs in soil. No VOCs were identified as COPECs in groundwater. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. Though pyrene and 2-methylnaphthalene were not detected in sediment, their detection limits were greater than the freshwater sediment ESC and they were identified as COPECs in soil; therefore, pyrene and 2-methylnaphthalene are considered potential COPECs in sediment. **Table 4-26** and **Table 4-27** provide a summary of the COPECs in surface water and sediment at FTMM-61 and Parcel 49 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated wetlands along Parkers Creek on the western portion of Parcel 49 (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at FTMM-61 and Parcel 49 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of FTMM-61 and Parcel 49 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Though PAHs were identified as COPECs in soil, they were not identified as COPECs in other site media where ecological exposures may occur, suggesting limited migration of these constituents.
- Though one PCB was identified as a COPEC in soil, it was not identified as a COPEC in other site media where ecological exposures may occur.
- VOCs and pesticides were not identified as COPECs in environmental media.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Zinc was the only COPEC identified in groundwater that may flow to potential exposure points.

- No COPECs were identified in surface water where ecological exposures may occur.
- With the exception of chromium and zinc, the concentrations of metals in sediment were similar to those found in background samples from the BEE investigation (**Table 3-4**) or the SI (Weston, 1995). Concentrations of chromium were greater than the background concentrations but well within the range expected for glauconitic soils (Dooley, 2001); though concentrations were greater than the ER-L they were less than the ER-M. The concentration of zinc in one of two samples and its duplicate sample (1,320 and 2,090 mg/kg) exceeded the ER-M (410 mg/kg).

In FTMM-61 and Parcel 49 soil, PAHs and PCBs were identified as COPECs but were not identified as COPECs in surface water or sediment where ecological exposures may occur, suggesting limited migration. Several metals in soil and zinc in groundwater were identified as COPECs that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Though most metals in sediment were found at concentrations similar to background, a few (chromium and zinc) were detected at concentrations above background; though chromium concentrations are similar to those in glauconitic soils. Based on these considerations and the information provided in this report, it is concluded that there is a potential for some ecological risk due to elevated metals zinc in sediment in a limited area around FTMM-61 and Parcel 49, though these concentrations may be related to other anthropogenic sources. Additional ecological assessments at FTMM-61 and Parcel 49 are not warranted or recommended. It is unlikely to have a significant deleterious effect on sensitive ecological receptors or habitats and the potential for significant ecological risk is considered minimal.

4.1.15 BUILDING 1075 (ECP PARCEL 61)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to soils within the area, but ecological receptors may be exposed to surface water or sediment. Three PAHs and several metals were identified as COPECs in soil. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in soil, copper is considered a possible COPEC in surface water. Several PAHs and two metals were identified as COPECs in sediment. **Table 4-28** and **Table 4-29** provide a summary of the COPECs in surface water and sediment at Parcel 61 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous shrub/scrub wetlands along the tributary to Husky Brook (**Figure 4-1**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and that Husky Brook is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Parcel 61 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 61 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- PAHs, as well as metals, were identified as COPECs in soil that could migrate to surface water or sediment.
- VOCs, pesticides, and PCBs were not identified as COPECs in environmental media.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).

- Though PAHs have many anthropogenic sources and are ubiquitous in environmental media, elevated concentrations in soil at Parcel 61 may indicate a site-related source of PAHs to surface water and sediment. The detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**). Though concentrations in sediment exceeded the ER-Ls used for screening, all concentrations were less than the ER-Ms.
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).

In soil at Parcel 61, PAHs were identified as COPECs. These were also identified as COPECs in sediment of the small tributary to Husky Brook. Metals in sediment were found at concentrations similar to background. Based on these considerations and the information provided in this report, it is concluded that there is a potential for some ecological risk due to elevated PAHs in sediment. These exposures are limited in area in the small tributary to Husky Brook around Parcel 61, and may also be related to other anthropogenic sources; all PAH concentrations were well below the ER-M values, and additional ecological assessments at Parcel 61 are not warranted or recommended.

4.1.16 BUILDING 900 (ECP PARCEL 69)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed groundwater and have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in soil. No COPECs were identified in groundwater. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several PAHs and metals were identified as COPECs in sediment. **Table 4-30** and **Table 4-31** provide a summary of the COPECs in surface water and sediment at Parcel 69 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the emergent wetland area along Oceanport Creek is habitat Rank 4, which is assigned to patches with one or more occurrences of a state endangered species, in this case the Least Tern. Oceanport Creek and the adjacent wetlands are also listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Parcel 69 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 69 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Only metals were identified as COPECs in soil.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- VOCs, pesticides, and PCBs were not identified as COPECs in environmental media.
- No COPECs were identified in surface water where ecological exposures may occur.
- Though PAHs were identified as COPECs in sediment, they were not identified as COPECs in other site media; PAHs may not be related to Parcel 69 and at concentrations similar to background (**Table 3-4**).

- With the exception of chromium and zinc, the concentrations of metals in sediment were similar to those found in background samples from the BEE investigation (**Table 3-4**) or the SI (Weston, 1995). Chromium concentrations were similar to those found in glauconitic soils (Dooley, 2001).

Based on these considerations and the information provided in this report, it is concluded that though there is a potential for some ecological risk due to elevated metals (including zinc), these exposures are limited in area around Parcel 69 and may be related to regional anthropogenic inputs based on the proximity of the locations to areas of heavy vehicular traffic, and additional ecological assessments at Parcel 69 are not warranted or recommended.

4.2 CHARLES WOOD AREA

In the CWA, two IRP Sites and three ECP Parcels were addressed in this BEE.

4.2.1 LANDFILL, SITE CW-3A (FTMM-25)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified four pesticides, one PCB, one PAH, and several metals as COPECs in near surface soil. Six metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Two PAHs, cadmium, and zinc were identified as COPECs in surface water. One pesticide, several SVOC, and several metals were identified as COPECs in sediment. Given that the surface water MDL for silver exceeded the applicable ESC and silver was identified as a COPEC in soil, silver is considered a possible COPEC in surface water. **Table 4-32** and **Table 4-33** provide a summary of the COPECs in surface water and sediment at Landfill CW-3A (FTMM-25) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Landfill CW-3A (FTMM-25) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- One PCB was detected in a soil sample at a concentration exceeding the ESC, but PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- Though two pesticides (4,4′-DDT and dieldrin) were found in soil at concentrations exceeding the ESC, only one pesticide (4,4′-DDD) was identified as a COPEC in sediment and the concentration was low, within a factor of two of the freshwater sediment ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater.
- VOCs were not identified as COPECs in environmental media.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. With the exception of the most upstream sediment sample, the detected concentrations of PAHs identified as COPECs in surface water and sediment were at low concentrations and most were similar to those in background samples (**Table 3-5** and **Table 3-6**); the highest

concentrations were immediately downgradient of Pearl Harbor Avenue at the westernmost extreme of the Landfill boundary. Given that PAHs were not identified as COPECs on the landfill (soil or groundwater), it is likely that the PAHs are not related to the landfill.

- The concentrations of metals in surface water were similar to those found in background samples (**Table 3-5**).
- The concentrations of a few metals exceeded the ESC and the concentrations in CWA background samples (arsenic, cadmium, chromium, copper, mercury) (**Table 3-5** and **Table 3-6**), though concentrations were similar to those measured in background samples at the MP (**Table 3-3** and **Table 3-4**), similar to those measure in background samples in the SI (Weston, 1995), or within the range of background soil levels in the region (BEM Systems, Inc., 1998).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to two PAHs, cadmium and zinc. Several PAHs and metals were identified as COPECs in sediment. PAHs are most likely not due to the landfill since they were only identified as COPECs at the upgradient extent of the landfill near Pearl Harbor Avenue, and PAHs were not identified as COPECs in landfill soil. Most metals were identified at concentrations similar to background. Though chromium concentrations in sediment were greater than measured background concentrations, they were similar to soil concentrations from the region. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill CW-3A (FTMM-25) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill CW-3A (FTMM-25) are not warranted or recommended.

4.2.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Surface soil, groundwater, surface water, and wetland sediment data were evaluated. Ecological receptors are not directly exposed to groundwater and have limited exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. This evaluation identified two pesticides, one PAH, and several metals as COPECs in surface soil. Four metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in soil and groundwater have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. One PCB, cadmium and lead were identified as COPECs in surface water. One PCB, one pesticide, one SVOC, and several metals were identified as COPECs in sediment. Given that the surface water MDLs for 4,4′-DDE and silver exceeded the applicable ESC and 4,4′-DDE and silver were identified as COPECs in other site media, 4,4′-DDE and silver are considered possible COPECs in surface water. **Table 4-34** and **Table 4-35** provide a summary of the COPECs in surface water and sediment at Site CW-6 (FTMM-28) as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate that the area west and south of Site CW-6 (FTMM-28) is deciduous wooded wetlands (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 2, which is assigned to patches with one or more occurrences of a species of special concern, in this case the Wood Thrush.

The potential for ecological effects from COPECs at Site CW-6 (FTMM-28) is judged to be minimal for the following reasons:

- Soil samples represent concentrations in a small wooded area west of the buildings and operations of Site CW-6 (FTMM-28) and within an active golf course. Ecological receptors are not frequently exposed to these soils.
- Concentrations of pesticides in surface soil, though exceeding the soil ESC, were at low concentrations. The affected area is of limited size and located within an active golf course limiting the potential for ecological exposures.

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- A few metals were identified as COPECs in groundwater.
- VOCs were not identified as COPECs in environmental media.
- One concentration of a pesticide, 4,4′-DDE, was detected at a concentration exceeding the freshwater sediment ESC in the wetlands. The potential pathways of exposure in the wetlands are more appropriate to those of soil exposures; the concentration is less than the soil ESC.
- COPECs identified in surface water (Aroclor 1242, cadmium, and lead) were found at greater or similar concentrations in Wampum Brook upgradient of Site CW-6 then downgradient of Site CW-6 (FTMM-28) and metals concentrations were similar to background concentrations.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. With the exception of the most upstream sediment sample, the detected concentrations of PAHs identified as COPECs were at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**). The greatest concentrations upstream are likely related to other sources and not Site CW-6 (FTMM-28).
- The concentrations of several metals in sediment exceeded the ESC and the concentrations in CWA background samples (**Table 3-5** and **Table 3-6**), though concentrations for most were similar to those measured in background samples at the MP (**Table 3-3** and **Table 3-4**). Only mercury was detected at concentrations that also exceeded the SELs. The greatest concentrations of mercury were found within the wetland area and not in Wampum Brook, and are similar to the range of ambient mercury soil concentrations reported for the urban coastal plain (BEM Systems, Inc., 1998).

COPECs were identified in soils representing a small area but ecological exposures are limited due to the size and its location within an active golf course. Though some metals were identified as COPECS in surface water or sediment as well as soil or groundwater indicating a potential pathway may exist, the COPECs in surface water and sediment of Wampum Brook, south of CW-6 (FTMM-28), were found at greater concentrations at the upstream boundary of the site and are most likely not related to Site CW-6 (FTMM-28). Most metals in wetland sediment were found at concentrations similar to background, though a few were at elevated concentrations they were within the range of ambient soil concentrations reported for the urban coastal plain (BEM Systems, Inc., 1998). Based on these considerations and the information provided in this report, it is concluded that constituents at Site CW-6 (FTMM-28) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site CW-6 (FTMM-28) are not warranted or recommended.

4.2.3 BUILDING 2700 (ECP PARCEL 15)

Groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater, but ecological receptors may be exposed to surface water or sediment. No VOCs, but several metals, were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Only lead was identified as a COPEC in surface water; however, given that the surface water MDL for cadmium was greater than the applicable ESC cadmium was identified as a COPEC in groundwater, cadmium is considered a possible COPEC in surface water. Only chromium was identified as a COPEC in sediment. **Table 4-36** and **Table 4-37** provide a summary of the COPECs in surface water and sediment at Parcel 15 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 15 is judged to be minimal for the following reasons:

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points.
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media.
- Only lead in surface water and chromium in sediment were identified as COPECs where ecological exposures could occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**) and slightly greater than the freshwater ESC.
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Chromium in sediment was found at concentrations similar to those in background samples (**Table 3-4**) and slightly greater than the freshwater sediment ESC.

Several metals were identified as COPECs in groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to lead and COPECs in sediment were limited to chromium. Both were found at concentrations similar to those in background samples and only slightly greater than the freshwater ESC. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 15 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 15 are not warranted or recommended.

4.2.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to surface soils within the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in surface soil. Cadmium, chromium, and lead were identified as COPECs in surface water. Six metals were identified as COPECs in sediment. **Table 4-38** and **Table 4-39** provide a summary of the COPECs in surface water and sediment at Parcel 27 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 27 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 27 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Only metals were identified as COPECs in soil.
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media.
- Cadmium, chromium, and lead in surface water were found at concentrations similar to those in background samples (**Table 3-3**).

- The concentrations of a few metals in sediment exceeded the ESC and the concentrations in CWA background samples (arsenic, cadmium, copper, lead, and zinc) (**Table 3-6**), though concentrations were similar to those measured in background samples at the MP (**Table 3-4**).

Several metals were identified as COPECs in soil that could migrate to ecological exposure points in nearby surface water or sediment. Metals in surface water and sediment were found at concentrations similar to those in the area-wide background. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 27 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 27 are not warranted or recommended.

4.2.5 BUILDING 2525 (ECP PARCEL 28)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater and have limited potential for exposures to soils within the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in surface soil. No VOCs or SVOCs, but one metal, cadmium, were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Only lead was identified as a COPEC in surface water; however, given that the surface water MDL for cadmium was greater than the applicable ESC, cadmium was identified as a COPEC in groundwater, cadmium is considered a possible COPEC in surface water. Only chromium was identified as a COPEC in sediment. **Table 4-40** and **Table 4-41** provide a summary of the COPECs in surface water and sediment at Parcel 28 as well as background and ambient levels of those constituents.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek (**Figure 4-4**) as well as a strip of emergent wetlands located south of Parcel 28 (**Figure 4-5**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 28 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 28 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- A few metals were identified as COPECs in soil at Parcel 28.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Only one metal, cadmium, was identified as COPECs in groundwater that may flow to potential exposure points. It was not identified as a COPEC in surface water or sediment.
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media. Only lead in surface water and chromium in sediment were identified as COPECs where ecological exposures could occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**) and slightly greater than the freshwater ESC.
- Chromium in sediment was found at concentrations similar to those in background samples (**Table 3-4**) and slightly greater than the freshwater sediment ESC.

A few metals were identified as COPECs in soil that could migrate to ecological exposure points in nearby surface water or sediment. Only cadmium was identified as a COPEC in groundwater, but it was not identified as a COPEC in surface water or sediment where ecological exposures may occur. Metals in surface water and sediment were found at concentrations similar to those in background. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 28 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 28 are not warranted or recommended.

Table 4-1
Summary of Surface Water COPECs and Background Concentrations at Landfill 2 (FTMM-2)

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Maximum Background (ug/L)	SI Maximum Surface Water (ug/L)	SI Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary		
							Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Inorganics									
Lead	5.4	24	18.8	65.9	22.7	<100	10.1	(2 of 2)	8.98
Possible COPECs									
DDE	4.51E-09	NAV	ND	NR	NR	NR	NA	NA	NA
Cadmium	0.14	8.8	0.8	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-2
Summary of Sediment COPECs and Background Concentrations at Landfill 2 (FTMM-2)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Maximum Background (mg/kg)	SI Maximum Sediment (mg/kg)	SI Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
PCBs											
Aroclor 1242	0.07	0.023	0.064	NR	NR	NR	NR	NR	0.12	(1 of 13)	0.0289
Aroclor 1254	0.06	0.06	0.086	NR	NR	NR	NR	NR	0.064	(1 of 13)	0.0282
Aroclor 1260	0.005	0.005	ND	NR	NR	NR	NR	NR	0.040	(2 of 13)	0.0123
SVOCs											
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.37	(1 of 13)	0.152
Dibenzo(a,h)anthracene	0.06	0.063	0.088	0.12	0.079	ND	0.29	0.02	0.10	(1 of 13)	NA
2,4-Dinitrophenol	0.00621	NAV	ND	NR	NR	NR	NR	NR	1.1	(1 of 13)	NA
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	0.71	(1 of 13)	0.211
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	8.09	(1 of 13)	4.51
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	356	(8 of 13)	80.2
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	2.76	(13 of 13)	1.90
Chromium	26	81	125	88.1	269	0.104	171	34.7	125	(13 of 13)	56.8
Copper	16	34	165	48.4	8	6.05	93	33.3	22.5	(1 of 13)	3.16
Lead	31	47	945	142	19.5	25.9	344	144	52.8	(4 of 13)	22.5
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.21	(1 of 13)	0.104
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	13.0

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-3
Summary of Surface Water COPECs and Background Concentrations at Landfill 3 (FTMM-3)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-4

Summary of Sediment COPECs and Background Concentrations at Landfill 3 (FTMM-3)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.0095	(1 of 12)	0.00263
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.18	(1 of 12)	NA
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	22	(12 of 12)	18.1
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	164	(11 of 12)	78.8
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	4.78	(12 of 12)	2.87
Chromium	26	81	125	88.1	269	0.104	171	34.7	106	(4 of 12)	67.4
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	12.5	(3 of 12)	6.75
Copper	16	34	165	48.4	8	6.05	93	33.3	370	(2 of 12)	41.0
Lead	31	47	945	142	19.5	25.9	344	144	154	(5 of 12)	66.0
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.295	(4 of 12)	0.125
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	30	(3 of 12)	16.0
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	8.85	(12 of 12)	6.87
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	2.14	(3 of 12)	0.64
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	90.2	(6 of 12)	56.4
Zinc	120	150	423	162	81.4	44.6	259	106	352	(6 of 12)	194

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-5
Summary of Surface Water COPECs and Background Concentrations at Landfill 4 (FTMM-4)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-6
Summary of Sediment COPECs and Background Concentrations at Landfill 4 (FTMM-4)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.0062	(2 of 6)	0.00278
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.0016	(1 of 6)	NA
PCBs											
Aroclor 1232	0.07	0.023	ND	NR	NR	NR	NR	NR	0.093	(1 of 6)	NA
Aroclor 1242	0.07	0.023	0.064	NR	NR	NR	NR	NR	0.075	(2 of 6)	0.037
Aroclor 1260	0.005	0.005	ND	NR	NR	NR	NR	NR	0.036	(5 of 6)	0.0195
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	0.12	(1 of 6)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.15	(1 of 6)	0.0472
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.31	(1 of 6)	0.131
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	0.7	(1 of 6)	0.221
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.097	(1 of 6)	NA
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	0.62	(1 of 6)	0.245
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	10.2	(1 of 6)	4.96
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	1.49	(3 of 6)	1.22
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	24.6	(4 of 6)	15.1
Lead	31	47	945	142	19.5	25.9	344	144	65.1	(2 of 6)	42.3
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.257	(3 of 6)	0.149
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	3.67	(6 of 6)	2.62

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-7
Summary of Surface Water COPECs and Background Concentrations at Landfill 5 (FTMM-5)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-8
Summary of Sediment COPECs and Background Concentrations at Landfill 5 (FTMM-5)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.016	(3 of 7)	0.00463
DDE	0.005	0.0022	0.0034	0.096	0.071	NR	NR	NR	0.0072	(3 of 7)	0.00306
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.0021	(4 of 7)	0.0014
SVOCs											
Acenaphthylene	0.044	0.044	1.6	NR	0.041	ND	NR	NR	0.15	(1 of 7)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.23	(3 of 7)	0.104
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.34	(1 of 7)	0.147
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	0.67	(1 of 7)	0.444
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.27	(1 of 7)	NA
2-Methylnaphthalene	0.07	0.07	1.3	NR	NR	NR	NR	NR	0.4	(1 of 7)	NA
Naphthalene	0.16	0.16	4.4	NR	NR	NR	NR	NR	0.26	(1 of 7)	NA
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	0.96	(2 of 7)	0.284
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	0.7	(1 of 7)	0.431
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	43.5	(3 of 7)	11.5
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	50.7	(1 of 7)	26.8
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	6.65	(3 of 7)	2.13
Chromium	26	81	125	88.1	269	0.104	171	34.7	119	(1 of 7)	47.3
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	13.3	(1 of 7)	7.8
Lead	31	47	945	142	19.5	25.9	344	144	62.4	(1 of 7)	29.6
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.155	(1 of 7)	0.08
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	27.6	(1 of 7)	13.9
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	13.2	(7 of 7)	4.81
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	1.29	(1 of 7)	0.413
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	71.6	(1 of 7)	31.0
Zinc	120	150	423	162	81.4	44.6	259	106	203	(2 of 7)	109

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-9
Summary of Surface Water COPECs and Background Concentrations at Landfill 8 (FTMM-8)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-10
Summary of Sediment COPECs and Background Concentrations at Landfill 8 (FTMM-8)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels Maximum Ambient	Ambient Soil Levels 90th Percentile	Site COPEC Summary Maximum Detected	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.0033	(3 of 12)	0.0022
PCBs											
Aroclor 1242	0.07	0.023	0.064	NR	NR	NR	NR	NR	0.17	(2 of 12)	0.06
Aroclor 1260	0.005	0.005	ND	NR	NR	NR	NR	NR	0.011	(1 of 12)	NA
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	18.9	(6 of 12)	18.9
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	103	(6 of 12)	49.3
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	6.85	(11 of 12)	3.70
Chromium	26	81	125	88.1	269	0.104	171	34.7	131	(4 of 12)	69.6
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	116	(10 of 12)	39.6
Copper	16	34	165	48.4	8	6.05	93	33.3	64.5	(4 of 12)	25.57
Lead	31	47	945	142	19.5	25.9	344	144	179	(7 of 12)	82.3
Manganese	630	260	551	70.2	90.7	59	1030	206	364	(1 of 12)	76.8
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.853	(9 of 12)	0.365
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	60.5	(7 of 12)	24.8
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	13.8	(12 of 12)	6.47
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	5.85	(3 of 12)	2.29
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	99.1	(4 of 12)	46.9
Zinc	120	150	423	162	81.4	44.6	259	106	415	(7 of 12)	195

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-11
Summary of Surface Water COPECs and Background Concentrations at Landfill 12 (FTMM-12)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-12
Summary of Sediment COPECs and Background Concentrations at Landfill 12 (FTMM-12)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.0091	(9 of 13)	0.0046
DDE	0.005	0.0022	0.0034	0.096	0.071	NR	NR	NR	0.0071	(8 of 13)	0.0029
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.013	(4 of 13)	0.0025
PCBs											
Aroclor 1254	0.06	0.06	0.086	NR	NR	NR	NR	NR	0.23	(1 of 13)	NA
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	0.64	(1 of 13)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.6	(3 of 13)	0.083
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.83	(6 of 13)	0.265
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	0.68	(3 of 13)	0.231
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.67	0.64	ND	NR	NR	0.36	(2 of 13)	0.323
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	0.31	(2 of 13)	0.273
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.83	(6 of 13)	0.465
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	2.2	(6 of 13)	0.702
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.32	(1 of 13)	NA
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.7	0.46	ND	0.57	0.23	0.36	(2 of 13)	0.342
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	1.9	(5 of 13)	0.534
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	1.5	(5 of 13)	0.815
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	18.6	(1 of 13)	3.37
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	54	(1 of 13)	9.83
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	14	(2 of 13)	1.69
Chromium	26	81	125	88.1	269	0.104	171	34.7	101	(1 of 13)	28.1
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	13.7	(1 of 13)	2.62
Copper	16	34	165	48.4	8	6.05	93	33.3	77.3	(2 of 13)	16.7
Lead	31	47	945	142	19.5	25.9	344	144	171	(1 of 13)	24.2
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	5.72
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	5.99	(10 of 13)	1.83
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	3.54	(1 of 13)	0.49
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	61.1	(1 of 13)	16.7
Zinc	120	150	423	162	81.4	44.6	259	106	218	(1 of 13)	58.8

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-13
Summary of Surface Water COPECs and Background Concentrations at Landfill 14 (FTMM-14)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-14
Summary of Sediment COPECs and Background Concentrations at Landfill 14 (FTMM-14)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.0091	(9 of 13)	0.0046
DDE	0.005	0.0022	0.0034	0.096	0.071	NR	NR	NR	0.0071	(8 of 13)	0.0029
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.013	(4 of 13)	0.0025
PCBs											
Aroclor 1254	0.06	0.06	0.086	NR	NR	NR	NR	NR	0.23	(1 of 13)	NA
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	0.64	(1 of 13)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.6	(3 of 13)	0.083
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.83	(6 of 13)	0.265
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	0.68	(3 of 13)	0.231
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.67	0.64	ND	NR	NR	0.36	(2 of 13)	0.323
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	0.31	(2 of 13)	0.273
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.83	(6 of 13)	0.465
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	2.2	(6 of 13)	0.702
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.32	(1 of 13)	NA
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.7	0.46	ND	0.57	0.23	0.36	(2 of 13)	0.342
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	1.9	(5 of 13)	0.534
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	1.5	(5 of 13)	0.815
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	18.6	(1 of 13)	3.37
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	54	(1 of 13)	9.83
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	14	(2 of 13)	1.69
Chromium	26	81	125	88.1	269	0.104	171	34.7	101	(1 of 13)	28.1
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	13.7	(1 of 13)	2.62
Copper	16	34	165	48.4	8	6.05	93	33.3	77.3	(2 of 13)	16.7
Lead	31	47	945	142	19.5	25.9	344	144	171	(1 of 13)	24.2
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	5.72
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	5.99	(10 of 13)	1.83
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	3.54	(1 of 13)	0.49
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	61.1	(1 of 13)	16.7
Zinc	120	150	423	162	81.4	44.6	259	106	218	(1 of 13)	58.8

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-15
Summary of Sediment COPECs and Background Concentrations Site 15 (FTMM-15)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDT	0.008	0.001	ND	0.11	0.11	NR	NR	NR	0.0041	(1 of 4)	NA
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	14.9	(3 of 4)	11.3
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	2.97	(4 of 4)	2.28
Chromium	26	81	125	88.1	269	0.104	171	34.7	95.5	(1 of 4)	73.6
Lead	31	47	945	142	19.5	25.9	344	144	108	(2 of 4)	56.9
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.293	(3 of 4)	0.2
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	6.98	(4 of 4)	5.21
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	1.44	(3 of 4)	1.19
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	83.2	(1 of 4)	50.0
Zinc	120	150	423	162	81.4	44.6	259	106	262	(2 of 4)	165

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-16
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-16

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-17

Summary of Sediment COPECs and Background Concentrations at Site FTMM-16

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
SVOCs											
Hexachlorobutadiene	0.0265	0.0013	ND	NR	NR	NR	NR	NR	0.008	(1 of 5)	NA
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	24.5	(4 of 5)	16.9
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	12.3	(4 of 5)	8.86
Chromium	26	81	125	88.1	269	0.104	171	34.7	144	(4 of 5)	108
Copper	16	34	165	48.4	8	6.05	93	33.3	124	(4 of 5)	82.1
Lead	31	47	945	142	19.5	25.9	344	144	212	(4 of 5)	133
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.502	(3 of 5)	0.317
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	35.2	(3 of 5)	22.4
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	11	(4 of 5)	7.65
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	6.44	(4 of 5)	4.35
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	106	(3 of 5)	66.7
Zinc	120	150	423	162	81.4	44.6	259	106	500	(4 of 5)	324

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-18
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-18

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-19

Summary of Sediment COPECs and Background Concentrations at Site FTMM-18

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	22.8	(2 of 5)	9.748
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	5.65	(4 of 5)	3.462
Chromium	26	81	125	88.1	269	0.104	171	34.7	132	(3 of 5)	86.02
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	56	(2 of 5)	16.36
Copper	16	34	165	48.4	8	6.05	93	33.3	82.9	(1 of 5)	25.8
Lead	31	47	945	142	19.5	25.9	344	144	166	(2 of 5)	56.93
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.669	(3 of 5)	0.389
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	45.1	(2 of 5)	18.7
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	12.3	(5 of 5)	7.116
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	27.9	(2 of 5)	10.9
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	63	(1 of 5)	41.54
Zinc	120	150	423	162	81.4	44.6	259	106	358	(3 of 5)	175.3

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-20
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-20

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-21

Summary of Sediment COPECs and Background Concentrations at Site FTMM-20

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	23.8	(2 of 2)	16.6
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	2.87	(2 of 2)	2.09
Chromium	26	81	125	88.1	269	0.104	171	34.7	99.4	(1 of 2)	83.5
Copper	16	34	165	48.4	8	6.05	93	33.3	71.2	(1 of 2)	41.6
Lead	31	47	945	142	19.5	25.9	344	144	59.4	(1 of 2)	46.4
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.322	(1 of 2)	0.215
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	21.6	(1 of 2)	15.7
Selenium	NAV	1	19	1.7	1.9	0.11	ND	ND	6.86	(2 of 2)	5.45
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	8.07	(2 of 2)	4.71
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	60.9	(1 of 2)	48.3
Zinc	120	150	423	162	81.4	44.6	259	106	184	(1 of 2)	132

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-22
Summary of Surface Water COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
SVOCs									
Anthracene	0.035	NAV	0.12	NR	NR	NR	0.12	(2 of 2)	0.12
Benzo(a)anthracene	0.025	NAV	0.23	NR	NR	NR	0.24	(2 of 2)	0.24
Benzo(a)pyrene	0.014	NAV	ND	NR	NR	NR	0.31	(1 of 2)	0.16
Inorganics									
Lead	5.4	24	18.8	65.9	22.7	<100	11.5	(2 of 2)	9.4
Possible COPECs									
Cadmium	0.14	8.8	0.8	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-23

Summary of Sediment COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
SVOCs											
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.61	(2 of 3)	0.44
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	0.61	(2 of 3)	0.44
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	0.39	(2 of 3)	0.30
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.88	(2 of 3)	0.66
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	1.4	(2 of 3)	1.03
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	0.7	(1 of 3)	0.48
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	1.6	(2 of 3)	1.15
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	10.2	(3 of 3)	8.6
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	1.86	(2 of 3)	1.3
Chromium	26	81	125	88.1	269	0.104	171	34.7	161	(3 of 3)	157
Copper	16	34	165	48.4	8	6.05	93	33.3	53.6	(3 of 3)	40.7
Lead	31	47	945	142	19.5	25.9	344	144	116	(3 of 3)	78.5
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.47	(3 of 3)	0.33
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	36.4	(3 of 3)	29.5
Zinc	120	150	423	162	81.4	44.6	259	106	286	(2 of 3)	215
Possible COPECs											
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-24
Summary of Surface Water COPECs and Background Concentrations at Building 1150, Parcel 39

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
SVOCs									
Anthracene	0.035	NAV	0.12	NR	NR	NR	0.11	(1 of 1)	0.11
Benzo(a)anthracene	0.025	NAV	0.23	NR	NR	NR	0.22	(1 of 1)	0.22
Inorganics									
Lead	5.4	24	18.8	65.9	22.7	<100	10.1	(1 of 1)	10.1
Possible COPECs									
Cadmium	0.14	8.8	0.8	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-25

Summary of Sediment COPECs and Background Concentrations at Building 1150, Parcel 39

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
PCBs											
Aroclor 1254	0.06	0.06	0.086	NR	NR	NR	NR	NR	0.064	(1 of 4)	0.027
SVOCs											
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.54	(1 of 6)	0.23
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.71	(3 of 6)	0.29
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	0.99	(2 of 6)	0.53
Naphthalene	0.16	0.16	4.4	NR	NR	NR	NR	NR			
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	0.67	(1 of 6)	0.21
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	2	(3 of 6)	0.72
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	8.89	(2 of 6)	4.49
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	2.09	(6 of 6)	1.52
Chromium	26	81	125	88.1	269	0.104	171	34.7	131	(6 of 6)	68.2
Copper	16	34	165	48.4	8	6.05	93	33.3	41	(2 of 6)	11.9
Lead	31	47	945	142	19.5	25.9	344	144	61.7	(1 of 6)	26.0
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.67	(1 of 6)	0.17
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	32.4	(1 of 6)	14.4
Zinc	120	150	423	162	81.4	44.6	259	106	210	(1 of 6)	103

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-26

Summary of Surface Water COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-27

Summary of Sediment COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	29.7	(4 of 4)	10.5
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	96.4	(4 of 4)	81.1
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	5.5	(3 of 4)	3.29
Chromium	26	81	125	88.1	269	0.104	171	34.7	353	(4 of 4)	230
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	29.3	(2 of 4)	13.9
Copper	16	34	165	48.4	8	6.05	93	33.3	111	(3 of 4)	72.2
Lead	31	47	945	142	19.5	25.9	344	144	148	(1 of 4)	58.9
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.53	(3 of 4)	0.33
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	68.5	(2 of 4)	34.2
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	1.4	(1 of 4)	NA
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	125	(4 of 4)	101
Zinc	120	150	423	162	81.4	44.6	259	106	2090	(3 of 4)	917
Possible COPECs											
2-Methylnaphthalene	0.07	0.07	1.3	NR	NR	NR	NR	NR	NA	NA	NA
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-28
Summary of Surface Water COPECs and Background Concentrations at Building 1075, Parcel 61

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-29

Summary of Sediment COPECs and Background Concentrations at Building 1075, Parcel 61

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	1.6	(1 of 2)	0.83
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.29	(2 of 2)	0.23
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	0.74	(2 of 2)	0.62
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	0.65	(2 of 2)	0.54
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	0.38	(1 of 2)	0.22
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	0.92	(2 of 2)	0.82
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	1.7	(2 of 2)	1.5
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.14	(1 of 2)	0.10
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	1.2	(2 of 2)	0.94
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	2.2	(2 of 2)	1.9
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	13.3	(1 of 2)	7.5
Chromium	26	81	125	88.1	269	0.104	171	34.7	86	(1 of 2)	63

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-30
Summary of Surface Water COPECs and Background Concentrations at Building 900, Parcel 69

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Possible COPECs									
Copper	6.5	3.1	ND	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-31

Summary of Sediment COPECs and Background Concentrations at Building 900, Parcel 69

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	1.2	(2 of 2)	0.85
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	2.8	(2 of 2)	1.8
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	3.1	(2 of 2)	2.1
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	36.2	(1 of 2)	19.4
Barium	NAV	48	196	87.6	32.3	NR	154	65.8	89.6	(1 of 2)	52.2
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	14.1	(1 of 2)	7.1
Chromium	26	81	125	88.1	269	0.104	171	34.7	345	(1 of 2)	210
Cobalt	50	10	16.8	119	4.5	NR	32	3.2	20.3	(1 of 2)	11.2
Copper	16	34	165	48.4	8	6.05	93	33.3	203	(2 of 2)	117
Lead	31	47	945	142	19.5	25.9	344	144	410	(1 of 2)	223
Manganese	630	260	551	70.2	90.7	59	1030	206	339	(1 of 2)	197
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	0.83	(1 of 2)	0.45
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	53.1	(1 of 2)	31.2
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	9.9	(1 of 2)	5.1
Vanadium	NAV	57	218	49.1	94.1	1.3	202	35.5	185	(1 of 2)	115
Zinc	120	150	423	162	81.4	44.6	259	106	515	(2 of 2)	321

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-32
Summary of Surface Water COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
SVOCs									
Anthracene	0.035	NAV	0.12	NR	NR	NR	0.11	(2 of 2)	0.11
Benzo(a)anthracene	0.025	NAV	0.23	NR	NR	NR	0.31	(1 of 2)	0.16
Inorganics									
Cadmium	0.14-0.17	8.8	0.8	NR	9.5	6	0.79	(1 of 2)	0.52
Zinc	88-108	81	79.9	215	233	60	99.8	(1 of 2)	77.6
Possible COPECs									
Silver	0.12	1.9	NR	NR	ND	<10	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-33
Summary of Sediment COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDD	0.008	0.002	0.0047	0.015	0.0096	NR	NR	NR	0.013	(1 of 6)	0.004
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	0.78	(1 of 6)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	4.1	(1 of 6)	0.69
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	7.0	(1 of 6)	1.19
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	4.6	(1 of 6)	0.78
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.67	0.64	ND	NR	NR	2	(1 of 6)	NA
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	2.3	(1 of 6)	NA
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	5.6	(1 of 6)	NA
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	17	(1 of 6)	NA
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	1.4	(1 of 6)	NA
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.7	0.46	ND	0.57	0.23	2	(1 of 6)	NA
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	15	(1 of 6)	NA
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	13	(1 of 6)	2.23
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	6.59	(1 of 6)	1.99
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	3.38	(3 of 6)	1.19
Chromium	26	81	125	88.1	269	0.104	171	34.7	145	(5 of 6)	82.6
Copper	16	34	165	48.4	8	6.05	93	33.3	31.6	(2 of 6)	13.3
Lead	31	47	945	142	19.5	25.9	344	144	31.2	(1 of 6)	14.4

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-34
Summary of Surface Water COPECs and Background Concentrations at Site CW-6 (FTMM-28)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
PCBs									
Aroclor-1242	0.014	0.03	0.3	NR	NR	NR	0.3	(2 of 2)	0.215
Inorganics									
Cadmium	0.14-0.17	8.8	0.8	NR	9.5	6	0.8	(1 of 2)	0.53
Chromium	19-23	50	2.55	ND	191	<50			
Cobalt	24	NAV	28.7	4.1	30.6	NR	28.7	(1 of 2)	22.6
Lead	5.4	24	18.8	65.9	22.7	<100	8.79	(2 of 2)	7.56
Zinc	88-108	81	79.9	215	233	60			

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-35
Summary of Sediment COPECs and Background Concentrations at Site CW-6 (FTMM-28)

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Pesticides											
DDE	0.005	0.0022	0.0034	0.096	0.071	NR	NR	NR	0.006	(1 of 6)	NA
PCBs											
Aroclor 1260	0.005	0.005	ND	NR	NR	NR	NR	NR	0.1	(1 of 6)	NA
SVOCs											
Acenaphthene	0.016	0.016	0.47	NR	0.1	ND	NR	NR	0.47	(1 of 6)	NA
Acenaphthylene	0.044	0.044	1.6	NR	0.041	ND	NR	NR	1.6	(1 of 6)	NA
Anthracene	0.22	0.085	0.3	0.061	0.1	ND	NR	NR	0.3	(1 of 6)	0.055
Benzo(a)anthracene	0.32	0.261	1.2	1.3	0.65	ND	1.82	0.43	1	(1 of 6)	0.196
Benzo(a)pyrene	0.37	0.43	1.2	1.2	0.6	ND	1.8	0.42	1.2	(1 of 6)	0.292
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.67	0.64	ND	NR	NR	0.89	(1 of 6)	NA
Benzo(k)fluroanthene	0.24	0.24	0.74	0.58	0.43	ND	4.1	0.66	0.74	(1 of 6)	NA
Chrysene	0.34	0.384	1.9	0.37	0.65	3	1.78	0.47	1.9	(1 of 6)	NA
2,4-Dinitrophenol	0.00621	NAV	ND	NR	NR	NR	NR	NR	1.7	(2 of 6)	1.28
Fluoranthene	0.75	0.6	4.9	1.5	0.46	ND	NR	NR	4.9	(1 of 6)	0.92
Fluorene	0.19	0.019	0.82	NR	0.074	ND	NR	NR	0.82	(1 of 6)	NA
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.7	0.46	ND	0.57	0.23	0.98	(1 of 6)	NA
2-Methylnaphthalene	0.07	0.07	1.3	NR	NR	NR	NR	NR	1.3	(1 of 6)	NA
Naphthalene	0.16	0.16	4.4	NR	NR	NR	NR	NR	4.4	(1 of 6)	NA
Phenanthrene	0.56	0.24	8.3	0.39	0.39	ND	NR	NR	8.3	(1 of 6)	NA
Pyrene	0.49	0.665	3.3	2	1.5	ND	NR	NR	3.3	(1 of 6)	0.63
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	13.1	(2 of 6)	5.45
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	5.56	(5 of 6)	2.00
Chromium	26	81	125	88.1	269	0.104	171	34.7	150	(6 of 6)	71.8
Copper	16	34	165	48.4	8	6.05	93	33.3	56.2	(4 of 6)	26.2
Lead	31	47	945	142	19.5	25.9	344	144	218	(4 of 6)	105
Mercury	0.2	0.15	0.424	1.7	ND	NR	6.1	0.21	6.6	(3 of 6)	1.60
Nickel	16	21	56.2	131	8.4	3.2	16.9	12.3	56.2	(3 of 6)	22.3
Silver	1	1	11.2	NR	1.1	0.21	6.3	0.65	12.1	(4 of 6)	3.72
Zinc	120	150	423	162	81.4	44.6	259	106	168	(1 of 6)	87.2

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-36
Summary of Surface Water COPECs and Background Concentrations at Building 2700, Parcel 15

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Inorganics									
Lead	5.4	24	18.8	65.9	22.7	<100	8.27	(1 of 2)	6.3
Possible COPECs									
Cadmium	0.14	8.8	0.8	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-37

Summary of Sediment COPECs and Background Concentrations at Building 2700, Parcel 15

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Chromium	26	81	125	88.1	269	0.104	171	34.7	37	(3 of 3)	32.5

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-38
Summary of Surface Water COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)		(ug/L)
Inorganics									
Cadmium	0.14-0.17	8.8	0.8	NR	9.5	6	0.69	(2 of 2)	0.61
Chromium	19-23	50	2.55	ND	191	<50	28.5	(1 of 2)	14.5
Lead	5.4	24	18.8	65.9	22.7	<100	8.18	(2 of 2)	7.00

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-39

Summary of Sediment COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Arsenic	6	8.2	61.6	14.5	31.6	4.56	83.1	13.6	6.11	(1 of 2)	4.7
Cadmium	0.6	1.2	17.2	NR	ND	0.116	2.7	0.32	1.76	(2 of 2)	1.24
Chromium	26	81	125	88.1	269	0.104	171	34.7	49.8	(2 of 2)	49.7
Copper	16	34	165	48.4	8	6.05	93	33.3	187	(1 of 2)	101
Lead	31	47	945	142	19.5	25.9	344	144	84.9	(1 of 2)	53.4
Zinc	120	150	423	162	81.4	44.6	259	106	264	(1 of 2)	172

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-40
Summary of Surface Water COPECs and Background Concentrations at Building 2525, Parcel 28

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Surface Water	SI Maximum Ground Water	Mo. Cty Bkgd Ground Water	Site COPEC Summary		
							Maximum Detected	Number Detected Above ESC	Average Concentration
Inorganics									
Lead	5.4	24	18.8	65.9	22.7	<100	7.14	(2 of 2)	6.44
Possible COPECs									
Cadmium	0.14	8.8	0.8	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

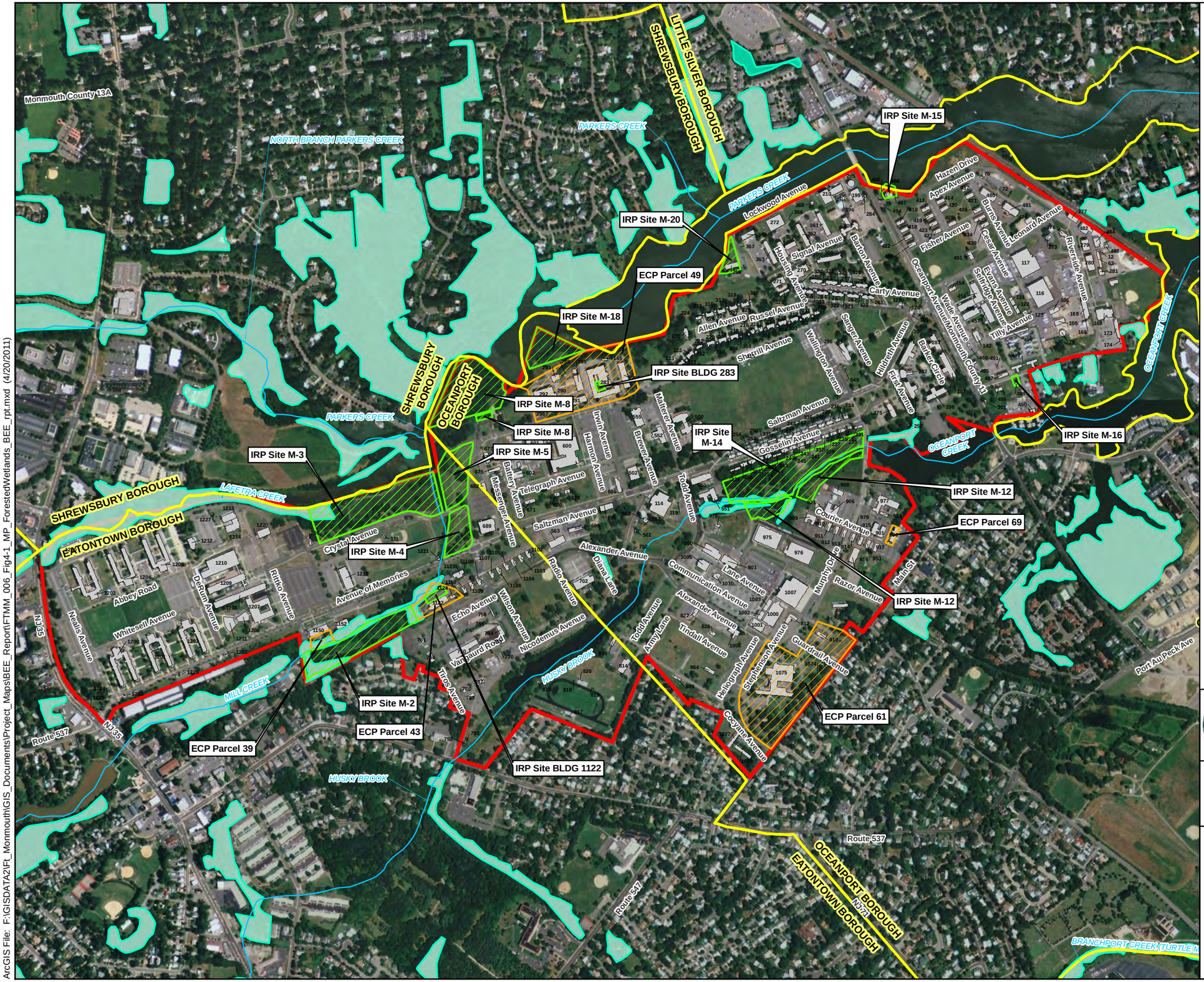
Table 4-41

Summary of Sediment COPECs and Background Concentrations at Building 2525, Parcel 28

COPEC	FW ESC	SW ESC	BEE Maximum Background	SI Maximum Sediment	SI Maximum Soil	Mo. Cty Bkgd Soil	Ambient Soil Levels		Site COPEC Summary		
							Maximum Ambient	90th Percentile	Maximum Detected	No Detected Above ESC	Average Concentration
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)
Inorganics											
Chromium	26	81	125	88.1	269	0.104	171	34.7	43	(2 of 2)	39.9

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
SI = Site Investigation (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_006_Fig4-1_MP_ForestedWetlands_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Forested Wetland

- Suitable (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Forested wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

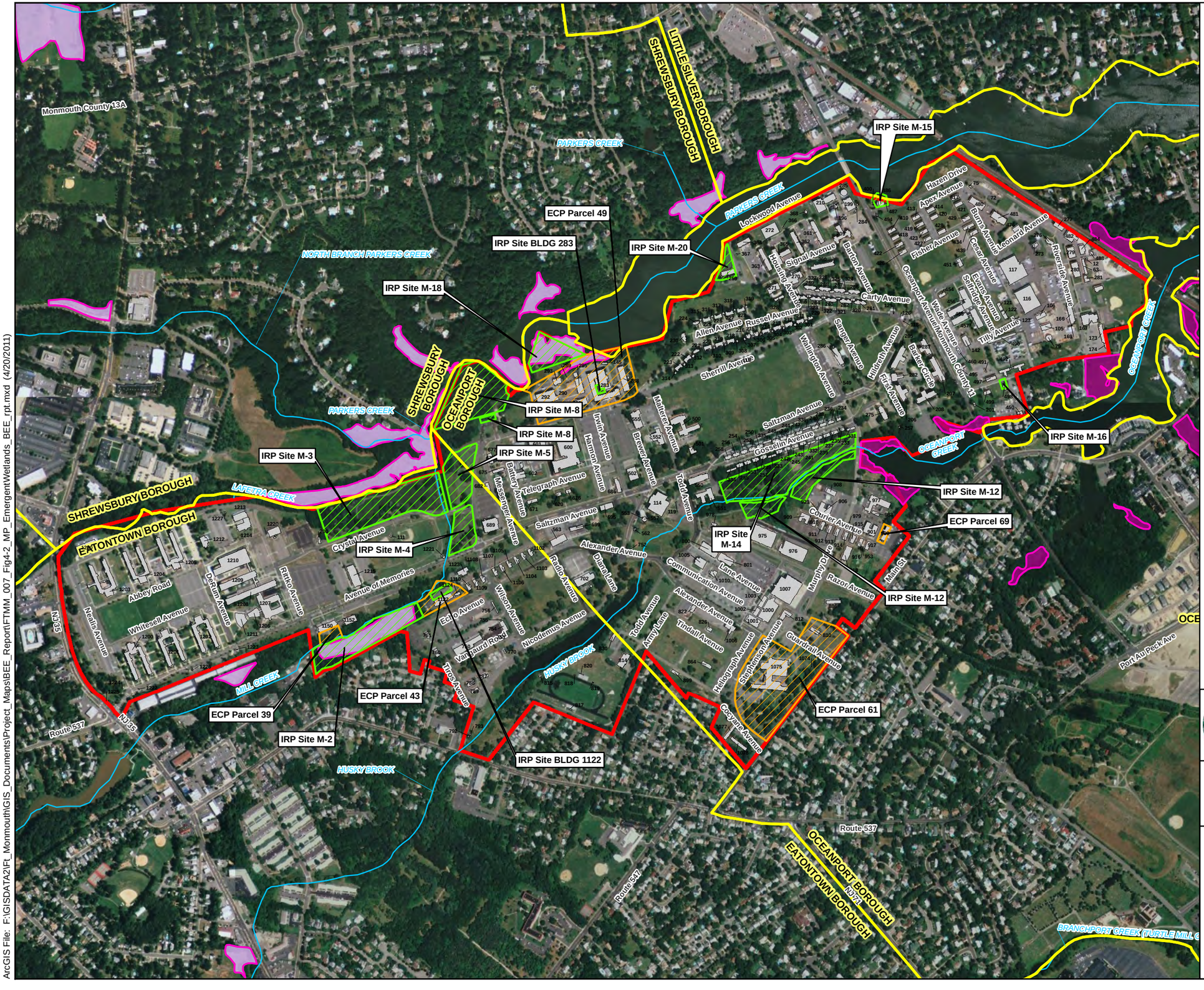
FIGURE 4-1

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST - FORESTED WETLANDS

FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_007_Fig4-2_MP_EmergentWetlands_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Emergent Wetland

- Suitable Habitat (1)
- State Endangered (4)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Emergent wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

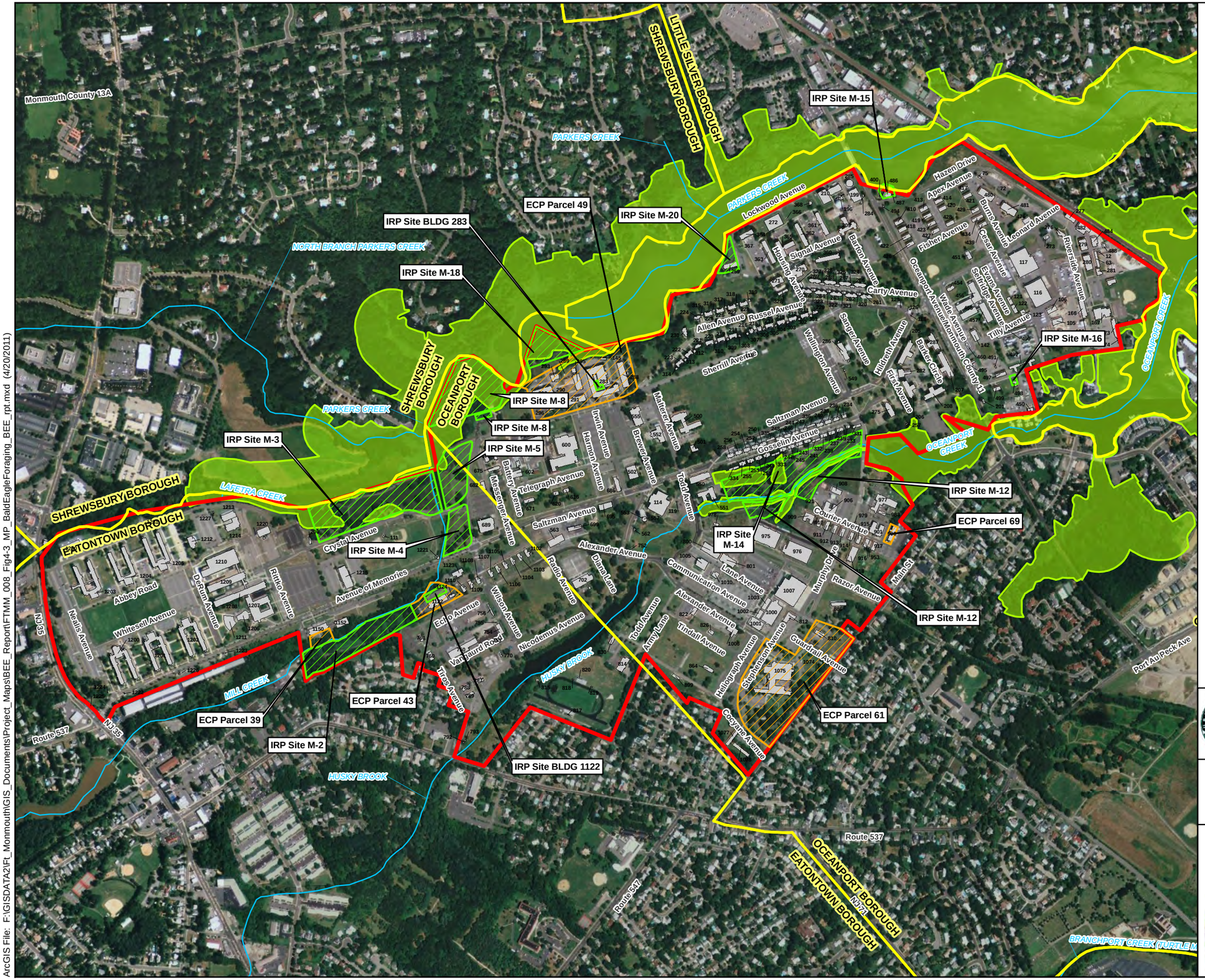
Shaw® Shaw Environmental, Inc.

FIGURE 4-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST - EMERGENT WETLANDS

FORT MONMOUTH
NEW JERSEY



ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_008_Fig4-3_MP_BaldEagleForaging_BEE_rpt.mxd (4/20/2011)

LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary
- Bald Eagle Foraging Area

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Bald Eagle foraging data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 450 900 1,800 Feet

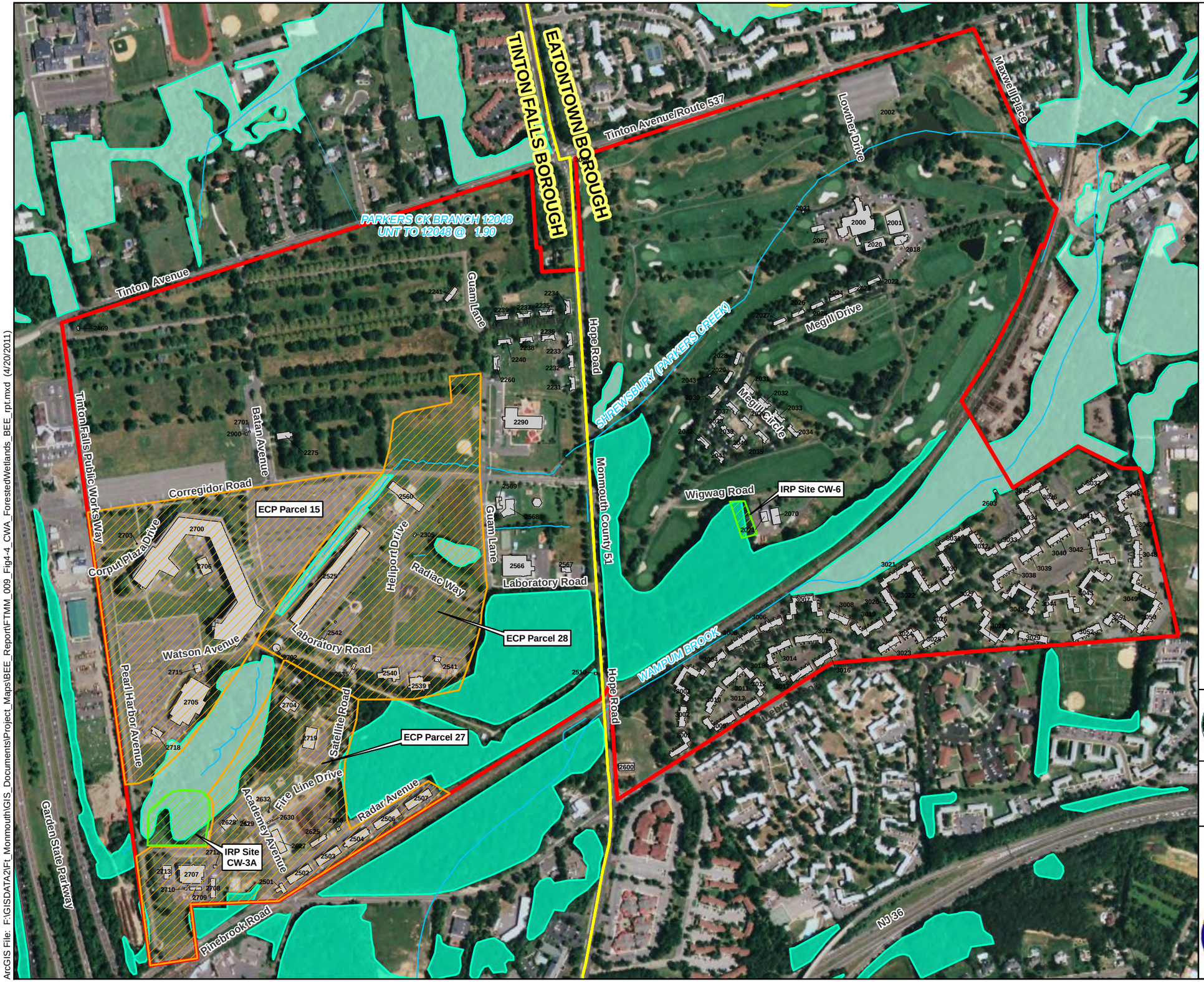
Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 4-3
FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT
MAIN POST - BALD EAGLE FORAGING AREAS

FORT MONMOUTH
NEW JERSEY



ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_009_Fig4-4_CWA_ForestedWetlands_BEE_rpt.mxd (4/20/2011)

LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Forested Wetland

- Suitable (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Forested wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

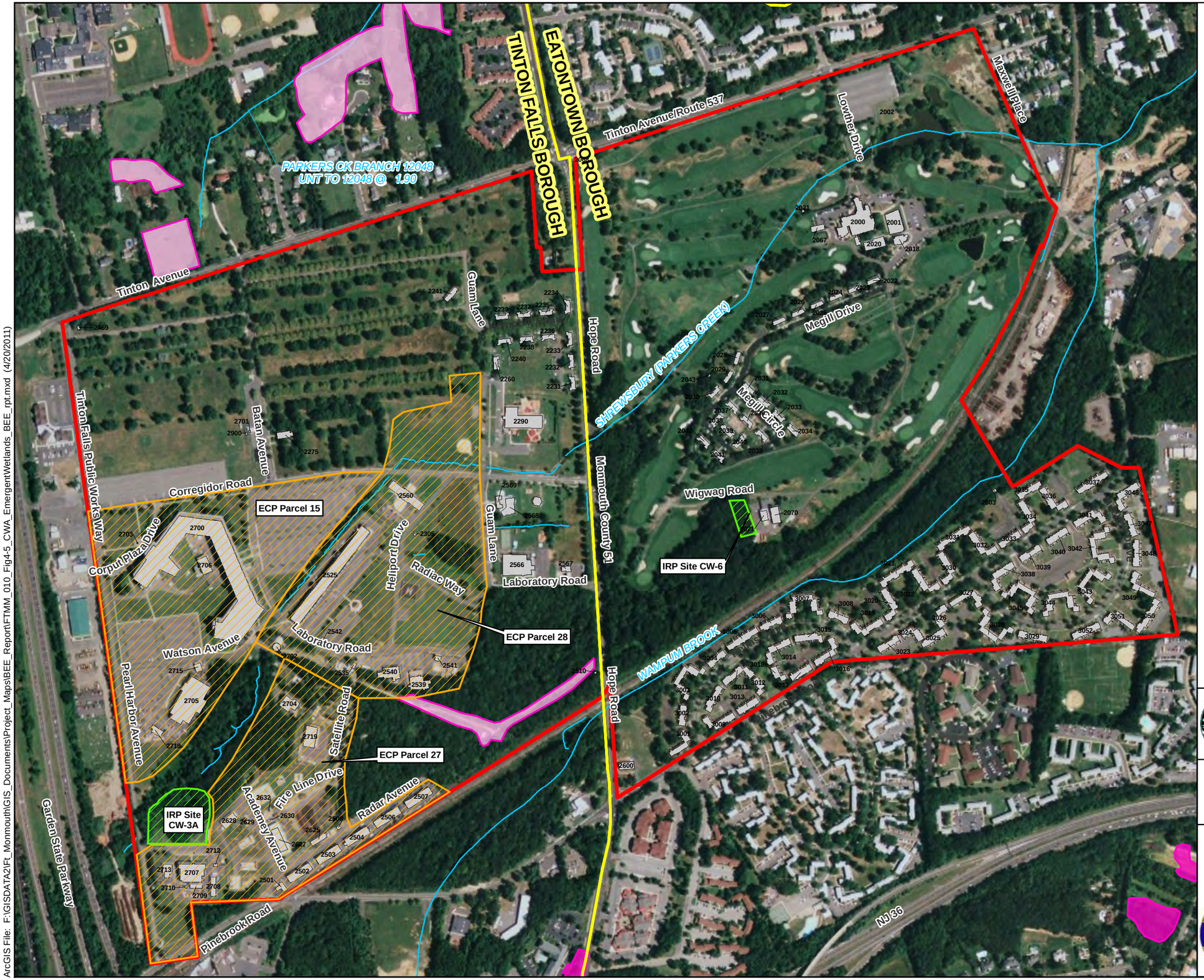
Shaw® Shaw Environmental, Inc.

FIGURE 4-4

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA - FORESTED WETLANDS

FORT MONMOUTH
NEW JERSEY



ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_010_Fig4-5_CWA_EmergentWetlands_BEE_rpt.mxd (4/20/2011)

LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Emergent Wetland

- Suitable Habitat (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Emergent wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

FIGURE 4-5

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA - EMERGENT WETLANDS

FORT MONMOUTH
NEW JERSEY

5.0 SUMMARY AND CONCLUSIONS

Within the FTMM MP and CWA are 27 active/open IRP Sites. Fourteen of the 27 IRP Sites were considered to require additional evaluation through the BEE process. In addition to these IRP Sites, it was determined that a BEE should also be conducted related to one other IRP site (FTMM-20), which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007). Additionally, eight parcels identified through the FTMM ECP SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property; NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008. The BEE and supporting sampling and analyses were performed based on the Scope of Work dated June 3, 2008, and information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel and in accordance with the final BEE WP (Shaw, 2010). A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009, to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

The objective of the BEE at FTMM is to assess whether the presence of constituents of concern in sediments, surface water, soil, and groundwater on the MP and CWA has the potential for adverse effects to biological receptors. This assessment is determined by examining information on each of the sites and the sample results from sediment, surface water, soil, and groundwater at the sites for the co-occurrence of 1) COPECs, 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. This objective was accomplished based on the results of a data and literature review, a qualitative site visit, field sampling, data analysis and ecological hazard characterization, and an evaluation of the general background characteristics of surface water and sediment in the FTMM area.

The occurrence of COPECs is determined through a comparison of existing site data with ecological screening levels. The occurrence of environmentally sensitive natural resources and potential chemical migration pathways is determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database, NJDEP tidal and freshwater wetland maps, the USGS topographic maps, and the USDA Soil Conservation Service soil survey maps.

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was a review of the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact.

Site data addressed in this BEE is comprised of data previously collected for RIs (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE.

Exposure of ecological receptors to contaminants in soil predominantly occurs within the surface soils. Ecological receptors are not frequently exposed to subsurface soils; therefore, surface soils at 2 feet bgs or below are not evaluated in this BEE. Soil data evaluated in this BEE were from various RI reports (**Appendix A**), the ECP SI report (**Appendix B**), and the BEE investigation samples (**Appendix D**). Though ecological receptors are not exposed directly to contaminants in groundwater, pathways may exist by which groundwater may flow to potential exposure points (e.g., discharge of groundwater into surface water bodies). Where applicable, the most recent 2-year period of readily available groundwater data from routine environmental monitoring were evaluated in this BEE to best represent current conditions (**Appendix C**; **Appendix B**). Though groundwater may discharge to surface water bodies, groundwater contaminant concentrations are not meant to represent potential surface water concentrations. Ecological receptors may be exposed directly to contaminants in surface water and sediment of the various creeks and ponds that drain the sites. As with soils, ecological receptors are not frequently exposed to contaminants in subsurface sediments. The top 6 inches of sediment is usually

considered to be the biotic zone, and only data from the top 6 inches of sediments is evaluated in this BEE. Though sediment data from the ECP SI (**Appendix B**) was evaluated in this BEE, the majority of the surface water and sediment data were from the extensive sampling conducted during the BEE investigation (**Appendix D**). Sampling and analyses were performed in accordance with the final BEE WP (Shaw, 2010), which was approved by the NJDEP on April 28, 2010 (**Appendix I**).

COPECs are defined for the purposes of this BEE as those constituents that were detected at concentrations exceeding the appropriate screening benchmarks in any of the samples from a given medium from a site. These ESC are intentionally conservative values and exceedances of these concentrations are not meant to imply ecological risks. A qualitative determination of the potential for adverse effects from site constituents was made based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents, as well as site history, natural geology, and other potential sources.

The character of the land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads interspersed with residential structures, apartments and office buildings. Business and light industrial parks are found along highways, streams and railroad tracks. Surrounding properties include NPL, SHWS, LUST, and VCP sites. These, as well as general small urban development activities lend to an increase in general anthropogenic inputs in the area.

Elevated concentrations of many metals, in relation to the conservatively low ESC, are naturally found within the urban coastal plain region in which FTMM is located. In particular, glauconitic soils which are prevalent at FTMM and have been reported in the creek sediments are naturally high in arsenic, beryllium, chromium, nickel and vanadium as well as other metals.

COPECs identified in soils generally represent limited potential for direct ecological exposure being either from subsurface (e.g., landfill near surface samples) or not within ecological habitats (e.g., near buildings, roads, and parking areas). COPECs identified in groundwater are not representative of direct ecological exposures. COPECs in both soil and groundwater, however, may migrate to nearby surface water or sediment where ecological exposures may occur.

Many organic COPECs identified in soil or groundwater were not identified as COPECs in surface water or sediment, suggesting limited organic contaminant migration to sensitive ecological receptors. Most of these were detected infrequently in soil or groundwater or at low concentrations in relation to the ESC.

Many organic COPECs identified in surface water or sediment were not identified as COPECs in soil or groundwater, suggesting the sources are unrelated to the sites under investigation, or were at low concentrations in relation to the ESC, which are intentionally conservative values. PAHs, in particular, though identified as COPECs, were found in sediments and surface water at concentrations similar to background sample concentrations or at locations indicative of other sources (e.g., at the upstream extent of the site and downstream of active roads or parking areas).

In surface water, lead was most often identified as a COPEC; however, it was found at similar concentrations at most of the sites and in the background samples. Most of the sediment metals identified as COPECs were at concentrations similar to background. Some metals (chromium, copper, lead, mercury, silver, and zinc) were detected at a few locations exceeding background concentrations measured during the BEE investigation, but many of these are similar to those reported for ambient soil in the region (BEM Systems, Inc., 1998) or, in particular, glauconitic soils (Dooley, 2001). Though there may be a potential for some ecological risk due to elevated metals in these limited areas, it is likely that these metals are related to natural geology or other anthropogenic sources.

Figure 5-1 depicts the concentration distribution of chromium in sediment throughout the MP, based on samples evaluated in this BEE. Samples where chromium was not detected are shown as clear symbols. Those samples where chromium is detected at concentrations below both the freshwater sediment and saltwater sediment ESC are shown in gray. Those samples where chromium concentrations are between the freshwater sediment and saltwater sediment ESC are shown in green. Those samples where chromium concentrations are above both the freshwater sediment and saltwater sediment ESC but within the range of most background (represented by the lower 75th percent of all

background concentrations from both the MP and CWA areas) are shown in yellow, and those samples where chromium concentrations are above both the freshwater sediment and saltwater sediment ESC and above all background concentrations measured as part of the 2010 BEE are shown in red. Similar figures are presented for copper (**Figure 5-2**), lead (**Figure 5-3**), mercury (**Figure 5-4**), silver (**Figure 5-5**), and zinc (**Figure 5-6**) for the MP and for chromium (**Figure 5-7**), copper (**Figure 5-8**), mercury (**Figure 5-9**), and silver (**Figure 5-10**) for the CWA.

Though metals may be present at concentrations greater than the background concentrations measured in limited areas during the 2010 BEE, many of these concentrations may be related to natural or general anthropogenic sources and the differences in site concentrations from the measured background concentrations can be a function of the greater number of site samples collected compared to background samples. Regardless, these figures show that the area of metal concentrations greater than the measured background concentrations is limited in extent, with no definitive spatial distribution that would suggest the source of metals are related to sites evaluated in the BEE. Though these may represent a potential ecological risk in limited areas, it is concluded that constituents at FTMM are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at FTMM are not warranted or recommended.

LEGEND

Chromium in Sediment (mg/kg)

- Non-Detect
- 0 - 26 (Below ESCs)
- 26 - 81 (Between Freshwater and Saltwater Sediment ESCs)
- 81 - 106.65 (Above ESCs and Within Lower 75% of Background)
- 106.65 - 125 (Above ESCs and Within Top 25% of Background)
- > 125 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-1

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHROMIUM RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_011_Fig5-1_MP_Chrom_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Copper in Sediment (mg/kg)

- Non-Detect
- 0 - 16 (Below ESCs)
- 16 - 34 (Between Freshwater and Saltwater Sediment ESCs)
- 34 - 41 (Above ESCs and Within Lower 75% of Background)
- 41 - 165 (Above ESCs and Within Top 25% of Background)
- > 165 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

COPPER RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_012_Fig5-2_MP_Copper_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Lead in Sediment (mg/kg)

- Non-Detect
- 0 - 31 (Below ESCs)
- 31 - 47 (Between Freshwater and Saltwater Sediment ESCs)
- 47 - 63.9 (Above ESCs and Within Lower 75% of Background)
- 63.9 - 945 (Above ESCs and Within Top 25% of Background)
- > 945 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-3

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

LEAD RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_013_Fig5-3_MP_Lead_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Mercury in Sediment (mg/kg)

- Non-Detect
- 0 - 0.15 (Below ESCs)
- 0.15 - 0.20 (Between Freshwater and Saltwater Sediment ESCs)
- 0.20 - 0.212 (Above ESCs and Below 1/2 Maximum Background)
- 0.212 - 0.424 (Above ESCs and Above 1/2 Maximum Background)
- > 0.424 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-4

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MERCURY RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_014_Fig5-4_MP_Mercury_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Silver in Sediment (mg/kg)

- Non-Detect
- 0 - 1 (Below ESCs)
- 1 - 5.6 (Above ESCs and Within Range of Most Background)
- 2.6 - 11.2 (Above ESCs and Above 1/2 Maximum Background)
- > 11.2 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-5

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SILVER RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_015_Fig5-5_MP_Silver_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Zinc in Sediment (mg/kg)

- Non-Detect
- 0 - 81 (Below ESCs)
- 81 - 86 (Between Freshwater and Saltwater Sediment ESCs)
- 86 - 162.5 (Above ESCs and Within Lower 75% of Background)
- 162.5 - 423 (Above ESCs and Within Top 25% of Background)
- > 423 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

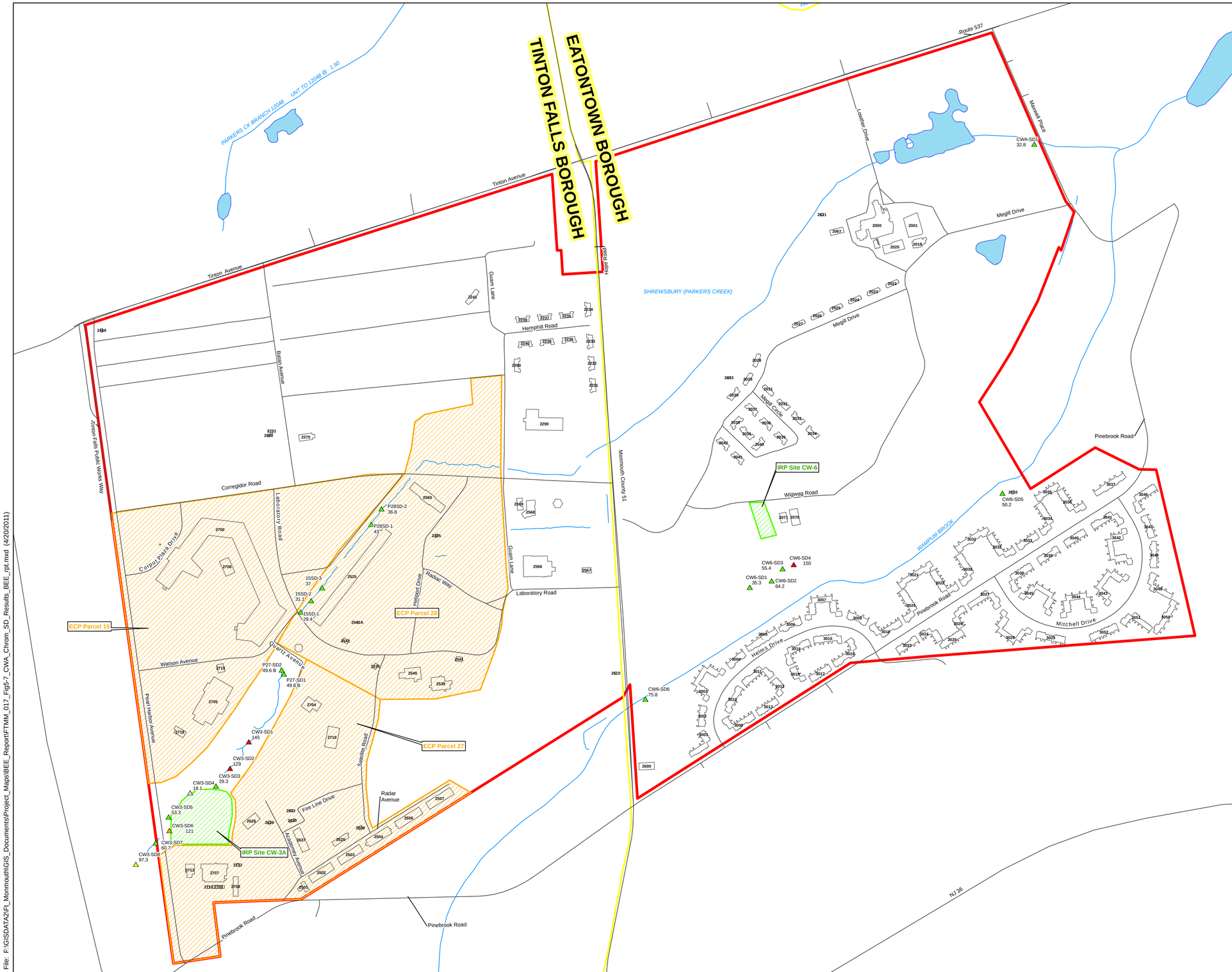
FIGURE 5-6

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

ZINC RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_016_Fig5-6_MP_Zinc_SD_Results_BEE_rpt.mxd (4/20/2011)



LEGEND

Chromium in Sediment (mg/kg)

- Non-Detect
- 0 - 26 (Below ESCs)
- 26 - 81 (Between Freshwater and Saltwater Sediment ESCs)
- 81 - 106.65 (Above ESCs and Within Lower 75% of Background)
- 106.65 - 125 (Above ESCs and Within Top 25% of Background)
- > 125 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaulation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 300 600 1,200
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-7

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

CHROMIUM RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_017_Fig5-7_CWA_Chrom_SD_Results_BEE_rpt.mxd (4/20/2011)

TINTON FALLS BOROUGH

EATONTOWN BOROUGH

PARKERS CK BRANCH 12046

UNT TO 12046 @ 1.90

SHREWSBURY (PARKERS CREEK)

WAMPUM BROOK

Tinton Avenue

Route 537

Hope Road

Guam Lane

Hemphill Road

Ralston Avenue

Tinton Falls Public Works Way

Corregidor Road

Laboratory Road

Corpus Christi Drive

Quartz Avenue

Watson Avenue

Pearl Harbor Avenue

Satellite Road

Radar Avenue

Fire Line Drive

Radiac Way

Harbor Drive

Monmouth County 51

Lowther Drive

Maxwell Place

Megill Drive

Megill Circle

Pinebrook Road

Wigwag Road

Helms Drive

Mitchell Drive

NJ 36

ECP Parcel 15

ECP Parcel 26

ECP Parcel 27

IRP Site CW-3A

IRP Site CW-6

P28SD-2 11.5 B

P28SD-1 5.92 B

15SD-2 10.7 B

15SD-3 13 B

15SD-1 8.23 B

P27-SD2 15.1 B

P27-SD1 187 B

CW3-SD1 11.1

CW3-SD2 7.65

CW3-SD3 31.6

CW3-SD4 23.3

CW3-SD5 1719 J

CW3-SD6 4.75

CW3-SD7 7.02

CW3-SD8 7.09

CWA-SD1 15.6

CW6-SD1 26.2

CW6-SD2 39.5

CW6-SD3 28.2

CW6-SD4 56.2

CW6-SD5 4.63

CW6-SD6 2.49

LEGEND

Copper in Sediment (mg/kg)

- Non-Detect
- 0 - 16 (Below ESCs)
- 16 - 34 (Between Freshwater and Saltwater Sediment ESCs)
- 34 - 41 (Above ESCs and Within Lower 75% of Background)
- 41 - 165 (Above ESCs and Within Top 25% of Background)
- > 165 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaulation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

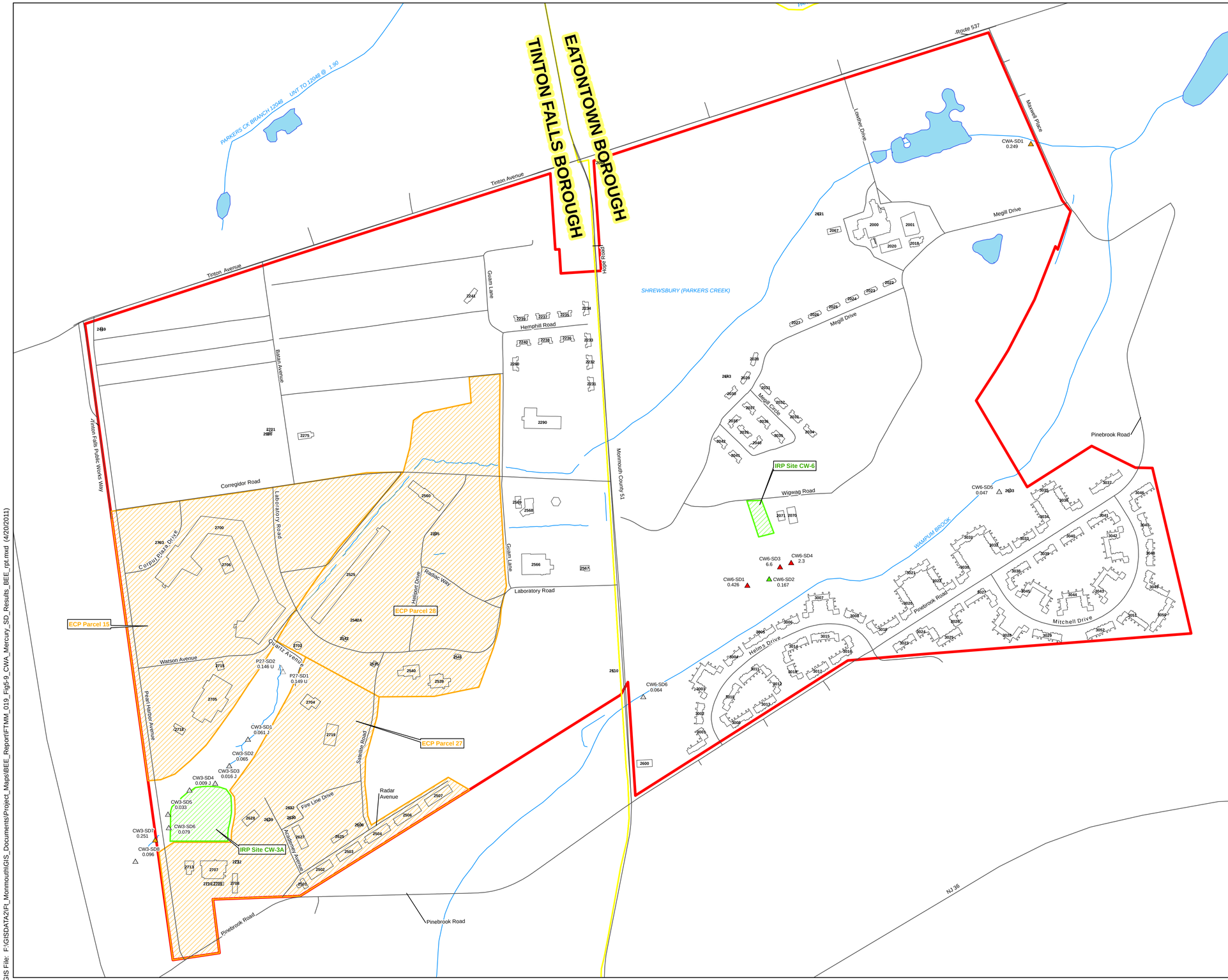
FIGURE 5-8

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

COPPER RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\FI_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_018_Fig5-8_CWA_Copper_SD_Results_BEE_rpt.mxd (4/20/2011)



LEGEND

Mercury in Sediment (mg/kg)

- Non-Detect
- 0 - 0.15 (Below ESCs)
- 0.15 - 0.20 (Between Freshwater and Saltwater Sediment ESCs)
- 0.20 - 0.212 (Above ESCs and Below 1/2 Maximum Background)
- 0.212 - 0.424 (Above ESCs and Above 1/2 Maximum Background)
- > 0.424 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaulation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 300 600 1,200
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-9

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

MERCURY RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_019_Fig5-9_CWA_Mercury_SD_Results_BEE_rpt.mxd (4/20/2011)

TINTON FALLS BOROUGH

EATONTOWN BOROUGH

PARKERS CK BRANCH 12046 UNT TO 12046 @ 1.90

SHREWSBURY (PARKERS CREEK)

WAMPUM BROOK

Tinton Avenue

Route 537

Corregidor Road

Laboratory Road

Watson Avenue

Quartz Avenue

Pearl Harbor Avenue

Radar Road

Radiac Way

Harbor Drive

Satellite Road

Fire Line Drive

Acquitemy Avenue

Radar Avenue

Pinebrook Road

Monmouth County 51

Guam Lane

Hemphill Road

Ralph Avenue

Tinton Falls Public Works Way

Corpus Plaza Drive

Megill Drive

Megill Circle

Lowther Drive

Maxwell Place

Wigwag Road

Helms Drive

Mitchell Drive

NJ 36

ECP Parcel 15

ECP Parcel 26

ECP Parcel 27

IRP Site CW-3A

IRP Site CW-6

P28SD-1 0.192 U

15SD-3 0.201 U

15SD-2 0.206 U

15SD-1 0.186 U

P27-SD2 0.236 U

P27-SD1 0.242 U

CW3-SD1 1.33 U

CW3-SD2 0.59 U

CW3-SD3 0.21 U

CW3-SD4 0.17 U

CW3-SD5 0.2 U

CW3-SD6 0.33 U

CW3-SD7 0.4 U

CW3-SD8 0.4 U

CWA-SD1 0.2 U

CW6-SD1 4.73

CW6-SD2 4.04

CW6-SD3 1.1 J

CW6-SD4 12.1

CW6-SD5 0.18 U

CW6-SD6 0.19 U

LEGEND

Silver in Sediment (mg/kg)

- Non-Detect
- 0 - 1 (Below ESCs)
- 1 - 5.6 (Above ESCs and Within Range of Most Background)
- 2.6 - 11.2 (Above ESCs and Above 1/2 Maximum Background)
- > 11.2 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-10

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SILVER RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_020_Fig5-10_CWA_Silver_SD_Results_BEE_rpt.mxd (4/20/2011)

6.0 REFERENCES

BEM Systems, Inc. 1998. *Characterization of Ambient Levels of Selected Metals and Other Analytes in New Jersey Urban Coastal Plain Region Soils*. Chatham, New Jersey.

Buchman, M.F. 2008. *NOAA Screening Quick Reference Tables*, Office of Response and Restoration Division, Seattle, Washington.

Dooley, J.H. 2001. *Baseline Concentrations of Arsenic, Beryllium, and Associated Elements in Glauconite and Glauconite Soils in the New Jersey Coastal Plan*. New Jersey Geological Survey. Trenton, New Jersey.

Efroymson, R.A., G.W. Suter II, B.E. Sample, and D.S. Jones. 1997a. Preliminary Remediation Goals for Ecological Endpoints. prepared for U.S. Department of Energy, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Efroymson, R.A., M.E. Will, G.W. Suter II, and A.C. Wooten. 1997b. *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision*, prepared for U.S. Department of Energy, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Eisler, R. 1999. Cumulative Index to Chemicals and Contaminants and to Common and Scientific Names and Species Listed in Contaminant Hazard Reviews 1 Through 34. U.S. Geological Survey, Biological Science Report USGS/BRD/DSR – 1999-0002, Contaminant Hazard Reviews Report 35.

First U.S. Army Medical Laboratory. 1971. Report of Liaison Visit. September 29, 1971.

Fort Monmouth. 2007. *FY2007 Fort Monmouth Base Realignment & Closure Installation Action Plan*, Fort Monmouth, New Jersey.

Fort Monmouth. 2011. *Base-Wide Glauconitic Soil Sampling Report*. Directorate of Public Works. Fort Monmouth, New Jersey.

Kozlowski, M. 2004. *Fort Monmouth: Landmarks and Place Names*, DCSOPS, Fort Monmouth, New Jersey.

Long, E.R. and L.G. Morgan. 1990. *The Potential for Biological Effects of Sediment Sorbed Contaminants Tested in the National Status and Trends Program*. National Oceanic and Atmospheric Administration, Office of Oceanography and Marine Assessment. Seattle, Washington.

Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder. 1995. “Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments”. *Environmental Management*. Vol. 19, No. 1, pp 81-97.

MacDonald, D.D., S.L. Smith, M.P. Wong, and P. Murdoch. 1992. *The Development of Canadian marine Environmental Quality Guidelines*. Environment Canada, Ecosystem Sciences and Evaluation Directorate, Eco-Health Branch. Ottawa, Canada.

National Oceanic and Atmospheric Administration (NOAA). 2010. *NOAA Tide Predictions*, <http://tidesandcurrents.noaa.gov/tides10/ > (June 2010).

N.J.A.C. 2010. Surface Water Quality Standards (N.J.A.C. 7:9B), last amended January 4, 2010, Trenton, New Jersey.

NJDEP. 1997. *Ecological Risk Assessment in NJDEP’s Site Remediation Program: Conducting a Baseline Ecological Evaluation, Site Remediation News*, Vol. 9, No. 1. January 1997.

NJDEP. 1998. *Guidance for Sediment Quality Evaluations.* November 1998.

NJDEP. 2005. *Field Sampling Procedures Manual.* Revised August 2005.

NJDEP. 2009a. <http://www.state.nj.us/dep/nrr/ about/nrr_faq.pdf

NJDEP. 2009b. *Technical Requirements for Site Remediation* N.J.A.C. 7:26E, last amended November 4, 2009.

NJDEP. 2009c. <www.state.nj.us/dep/srp/ guidance/ecoscreening/> (March 2009).

Persaud, D., R. Jaagumagi, and A. Hayton. 1993. *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario*. Ontario Ministry of the Environment. Ottawa, Ontario.

Roy F. Weston, Inc. 1995. *Site Investigation Fort Monmouth, New Jersey, Main Post and Charles Wood Areas*, prepared for USACE Baltimore District. December 1995.

Sample, B.E., D.M. Opresko, and G.W. Suter II. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision*, prepared for the U.S. Department of Energy, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Sanders, P.F. 2003. *Ambient Levels of Metals in New Jersey Soils*. New Jersey Department lf Environmental Protection, Division of Science, Research and Technology. Trenton, New Jersey.

Shaw. 2007. *Environmental Condition of Property Report – Fort Monmouth, Monmouth County, New Jersey.* January 2007.

Shaw. 2008. *U.S. Army BRAC 2005 Site Investigation Report-Final, Fort Monmouth.* July 2008.

Shaw. 2010. *Fort Monmouth Main Post and Charles Wood Area Baseline Ecological Evaluation Work Plan.* January 2010.

U.S. Army Communications-Electronics Life Cycle Management Command. 2005. A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey, Office of the Deputy Chief of Staff for Operations and Plans, Fort Monmouth, New Jersey. July 2005.

USAEHA. 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23-October 9, 1974; April 15-17, 1975; June 10-12, 1975.

USAEHA. 1977. Memorandum for Record, Request for AEHA Services for Fort Monmouth IEIA (Water Quality Aspects). July 14, 1977.

USATHAMA. 1980. *Installation Assessment of Fort Monmouth*, Report No. 171. May 1980.

USDA. 2008. *Soil Survey of Monmouth County, New Jersey*.

USEPA. 1989a. *Risk Assessment Guidance for Superfund, Volume II, Environmental Evaluation Manual,* EPA 540-1-89-013.

USEPA. 1989b. *Briefing Report to the EPA Science Advisory Board on the Equilibrium Partitioning Approach to Generate Sediment Quality Criteria.* Office of Water. Washington, DC.

USEPA. 1991. *Management of Investigation-Derived Waste During Site Inspections;* OSWER Directive 9345.3-03FS; EPA 540-G-91-009. May 1991.

USEPA. 1993. *Technical Basis for Deriving Sediment Quality Criteria for Nonionic Organic Contaminants for the Protection of Benthic Organisms by Using Equilibrium Partitioning,* EPA 822-R-02-041.

USEPA. 2003. *Ecological Screening Levels, USEPA*, Region 5, <http://www.epa.gov/reg5rcra/ca/ESL.pdf> (August 2009).

USEPA. 2005. *Guidance for Developing Ecological Soil Screening Levels.* Office of Solid Waste and Emergency Response, Washington, D.C.

USEPA. 2006. *National Recommended Water Quality Criteria: 2006.* Office of Water, Washington, D.C.

USEPA. 2010. *Water Quality Standards*. Code of Federal Regulations, Title 40 Protection of Environment, Part 131, July 1, 2010 Edition.

Versar, Inc. 2001. *Remedial Investigation Report & Remedial Action Workplan M-2 Landfill*, prepared for U.S. Army Fort Monmouth, January 2001.

Versar, Inc. 2003. *Remedial Investigation Report for Near Surface Soils M-12 Site*, prepared for US Army Fort Monmouth, October 2003.

Versar, Inc. 2004a. *Remedial Investigation Report for Near Surface Soils M-3 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004b. *Remedial Investigation Report for Near Surface Soils M-4 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004c. *Remedial Investigation Report for Near Surface Soils M-5 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004d. *Remedial Investigation Report for Near Surface Soils M-8 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004e. *Remedial Investigation Report for Near Surface Soils M-14 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004f. *Remedial Investigation Report for Near Surface Soils M-18 Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004g. *Remedial Investigation Report and Sediment Quality Investigation Pre-1941 Sewage Treatment Plant Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2004h. *Remedial Investigation Report for Near Surface Soils CW-3A Landfill Site*, prepared for U.S. Army Fort Monmouth. March 2004.

Versar, Inc. 2005a. *Remedial Investigation Report for the M-4 Landfill Site*, prepared for U.S. Army Fort Monmouth. January 2005.

Versar, Inc. 2005b. *Remedial Investigation Report CW-3A Landfill Site*, prepared for U.S. Army Fort Monmouth. January 2005.

Versar, Inc. 2005c. *Remedial Investigation Report CW-6 Former Pesticide Storage Building*, prepared for U.S. Army Fort Monmouth. January 2005.

Will, M.E. and G.W. Suter, II. 1995. *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants: 1995 Revision*, ES/ER/TM-85/R2. Oak Ridge National Laboratory, Environmental Sciences Division. Oak Ridge, Tennessee.

SITE SPECIFIC EVALUATION
M-12 Landfill

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-12 Landfill

M-12	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 05 - Sept 10	n=69	n=125	n=285	n=100	n=125	n=85	n=104	n=55	n=130	n=81	n=6
90th Percentile	16.18	81.08	169.00	1.23	3.82	2.28	9.65	11.44	20.36	65.90	2.05
Mean	8.34	31.80	75.47	0.61	2.25	1.46	7.59	5.38	8.09	19.44	1.58
Adjusted Mean	7.17	24.06	52.68	0.50	1.30	1.09	3.01	4.38	5.94	12.28	1.46
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, cadmium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for beryllium, selenium, and thallium are below their respective GWQS.

The adjusted mean value for lead is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of groundwater samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M12MW16, M12MW19, M12MW20, M12MW21, M12MW22, M12MW23, M12MW24, and M12MW25 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW26	M12MW26	02/03/05	50070.07			23.8								
M12	MW22	M12MW22	02/03/05	50070.04		*67*	48.3					*11.2*			
M12	MW21	M12MW21	02/03/05	50070.03			134								
M12	MW22	MW22 Duplicate	02/03/05	50070.02		*65.4*	47.3					*9.59*			
M12	MW24	M12MW24	02/03/05	50070.06			83.8	*1.31*					18.4		
M12	MW25	M12MW25	02/09/05	50080.08			37.8								
M12	MW20	M12MW20	02/09/05	50080.07		*40*	40								
M12	MW19	M12MW19	02/09/05	50080.06			95.1								
M12	MW18	M12MW18	02/09/05	50080.05			11.4								
M12	MW17	M12MW17	02/09/05	50080.04			28.1								
M12	MW25	MW25 Duplicate	02/09/05	50080.02			33.1			9.13	5.75	*5.87*			
M12	MW16	M12MW16	02/09/05	50080.03			32.3			8.65	5.31	*5.5*			
M12	MW26	M12MW26	05/04/05	50237.1			41.1								
M12	MW25	M12MW25	05/04/05	50237.09			28.7								
M12	MW24	M12MW24	05/04/05	50237.08			34.1								
M12	MW22	M12MW22	05/04/05	50237.06		*56*	48								
M12	MW21	M12MW21	05/04/05	50237.05			222								
M12	MW20	M12MW20	05/04/05	50237.04			37.1								
M12	MW19	M12MW19	05/04/05	50237.03			12								
M12	MW25	MW25 Duplicate	05/04/05	50237.02			31.3								
M12	MW18	M12MW18	05/05/05	50239.05			84.61								
M12	MW17	M12MW17	05/05/05	50239.04			75.1								
M12	MW16	M12MW16	05/05/05	50239.03		*18.6*	35.4								
M12	MW16	MW16 Duplicate	05/05/05	50239.02		*20.8*	38.4								
M12	MW26	M12MW26	09/02/05	50442.1			25.6								
M12	MW25	M12MW25	09/02/05	50442.09			81.9								
M12	MW22	M12MW22	09/02/05	50442.06		*76.5*	43.3		*9.11*			*5.49*			
M12	MW21	M12MW21	09/02/05	50442.05			43.9								
M12	MW20	M12MW20	09/02/05	50442.04			80.2		3.36						
M12	MW19	M12MW19	09/02/05	50442.03			11								
M12	MW26	MW26 Duplicate	09/02/05	50442.02			28.7								
M12	MW24	M12MW24	09/02/05	50442.08			46.6	0.628					6.52		
M12	MW18	M12MW18	09/07/05	50445.05			71.3								
M12	MW17	M12MW17	09/07/05	50445.04			154		2.74						
M12	MW16	M12MW16	09/07/05	50445.03		*39.3*	64.4		2.2						
M12	MW16	MW16 Duplicate	09/07/05	50445.02		*37.5*	64.5								
M12	MW22	M12MW22	11/14/05	50594.05		*97.5*	65.1					*7.64*			
M12	MW21	M12MW21	11/14/05	50594.04			62.5								
M12	MW20	M12MW20	11/14/05	50594.03			44.7				14.6				
M12	MW20	MW20 Duplicate	11/14/05	50594.02			37				12.6				
M12	MW24	M12MW24	11/14/05	50594.07			70.9	*1.02*			5.24		14.2		
M12	MW23	M12MW23	11/14/05	50594.06		*7.6*	75.1						10.4		
M12	MW26	M12MW26	11/15/05	50595.08			34.1								

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	11/15/05	50595.07			49.7								
M12	MW18	M12MW18	11/15/05	50595.05			93								
M12	MW17	M12MW17	11/15/05	50595.04			121								
M12	MW16	M12MW16	11/15/05	50595.03		***75.6***	61.1								
M12	MW18	MW18 Duplicate	11/15/05	50595.02			94.9								
M12	MW19	M12MW19	11/15/05	50595.06			18.3				9.78		14.6		
M12	MW26	M12MW26	01/26/06	60058.1			17.7				9.33				
M12	MW25	M12MW25	01/26/06	60058.09			22.2								
M12	MW23	M12MW23	01/26/06	60058.07			40.2								
M12	MW22	M12MW22	01/26/06	60058.06		***37.7***	47.3		3.28			***6.62***			
M12	MW21	M12MW21	01/26/06	60058.05			45.1								
M12	MW20	M12MW20	01/26/06	60058.04			82.4								
M12	MW19	M12MW19	01/26/06	60058.03			7.94								
M12	MW19	MW19 Duplicate	01/26/06	60058.02			8.27								
M12	MW24	M12MW24	01/26/06	60058.08			58.7	***1.02***					14.9		
M12	MW18	M12MW18	01/27/06	60060.05			130	0.545							
M12	MW17	M12MW17	01/27/06	60060.04			37.8								
M12	MW16	M12MW16	01/27/06	60060.03		***45.1***	42.1								
M12	MW16	MW16 Duplicate	01/27/06	60060.02		***46.7***	43.4								
M12	MW17	M12MW17	04/20/06	60169.04	2.03		87.2	0.106			1.67				
M12	MW20	M12MW20	04/20/06	60169.07			89.5	0.146			18.5				
M12	MW21	M12MW21	04/20/06	60169.08			336	0.165							
M12	MW22	M12MW22	04/20/06	60169.09		***68.5***	56.8				1.36				
M12	MW19	M12MW19	04/20/06	60169.06			8.13								
M12	MW16	M12MW16	04/20/06	60169.03		***25.2***	51.5	0.153		2.3					
M12	MW16	MW16 Duplicate	04/20/06	60169.02	2.34	***25.8***	51.4	0.118		1.95					
M12	MW25	M12MW25	04/20/06	60169.12			30.7			1.43	4.73				
M12	MW26	M12MW26	04/20/06	60169.13			48.7	0.132		0.854					
M12	MW24	M12MW24	04/20/06	60169.11			38.5	0.647		4.77	2.83		8.06		
M12	MW18	M12MW18	04/20/06	60169.05			115	0.449	0.375		1.25		3.85		
M12	MW23	M12MW23	04/20/06	60169.1			126	0.615	2.24	1.52	2.75		26.2		
M12	MW20	MW20 Duplicate	07/27/06	60341.02	2.02		64.9				12.8				
M12	MW22	M12MW22	07/27/06	60341.05		***86.1***	61.1				2.11				
M12	MW21	M12MW21	07/27/06	60341.04			43.5				3.02				
M12	MW20	M12MW20	07/27/06	60341.03			49.9				6.81				
M12	MW26	M12MW26	07/27/06	60341.08	2.68	1.94	30.7		1.11	1.46	1.45				
M12	MW23	M12MW23	07/27/06	60341.06	2.01	2.99	110	0.77	2.57		4.23		22.7		
M12	MW24	M12MW24	07/27/06	60341.07	3.13		44.3				2.95		2.82		
M12	MW19	M12MW19	07/28/06	60342.06	4.27	2.79	10.2		0.383		1.07				
M12	MW17	M12MW17	07/28/06	60342.04	***9.26***		134				2.51				
M12	MW25	M12MW25	07/28/06	60342.07	5.81	***3.8***	28.6			0.843	2.61				
M12	MW18	M12MW18	07/28/06	60342.05	5.01		104	0.18	0.877		2.53		3.62		
M12	MW16	M12MW16	07/28/06	60342.03	***7.79***	***36.7***	67.4			1.91	3.08		2.36		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW16	MW16 Duplicate	07/28/06	60342.02	4.84	***41.4***	66.2			2.26	1.7		1.5		
M12	MW19	M12MW19	11/03/06	60480.06			6.96							9.32	
M12	MW20	M12MW20	11/03/06	60480.07			58		2.08		15			7.38	
M12*	MW17	M12MW17	11/03/06	60480.04			314		***4.98***					5.43	
M12	MW25	M12MW25	11/03/06	60480.12			23.6							10.5	
M12	MW24	M12MW24	11/03/06	60480.11			60.6	0.713	0.427		1.51		9.88	7.16	
M12	MW21	M12MW21	11/03/06	60480.08			52.8		1.1				8		
M12	MW23	M12MW23	11/03/06	60480.1			67.4		0.971	1.2	0.794		7.01	5.42	
M12	MW18	M12MW18	11/03/06	60480.05			161	0.4	0.4				4	5	
M12	MW26	M12MW26	11/03/06	60480.13		***5.01***	15.3		2.25				3.56	4.53	
M12	MW16	M12MW16	11/03/06	60480.03		***68***	76.1	0.157	***4.06***	1.73			2.98	3.65	
M12	MW22	MW22 Duplicate	11/03/06	60480.02		***73.4***	46.6		***18***				1.9		
M12	MW22	M12MW22	11/03/06	60480.09		***72.8***	45.9		***17.8***				1.69		
M12	MW19	M12MW19	02/12/07	70055.06			7.84	0.116	0.342					5.08	
M12	MW20	M12MW20	02/12/07	70055.07			44.8	0.119	1.3		7.94	1.64		6.78	
M12	MW25	M12MW25	02/12/07	70055.12		***4.49***	31.6		0.369		2.05			6.62	
M12	MW26	M12MW26	02/12/07	70055.13			33.8		0.78					6.26	
M12	MW25	MW25 Duplicate	02/12/07	70055.02		***3.03***	31		0.316		1.39			5.74	
M12	MW17	M12MW17	02/12/07	70055.04		2.54	83.1		2.06					3.56	
M12	MW24	M12MW24	02/12/07	70055.11			47.6	0.72	0.742		0.916		9.42	3.05	
M12	MW18	M12MW18	02/12/07	70055.05			228	0.662	0.521		1.45		5.49	3.76	
M12	MW16	M12MW16	02/12/07	70055.03		***52.2***	77.9	0.203	3.76	1.45			3.22	3.37	
M12	MW23	M12MW23	02/12/07	70055.1			79.4	0.883	1.45	1.13	4.05		25.1	4.56	
M12*	MW21	M12MW21	02/12/07	70055.08		***11.4***	580	0.279	***17.8***				1.63		
M12*	MW22	M12MW22	02/12/07	70055.09		***94***	46.3		***15.3***				1.36		
M12	MW20	M12MW20	05/09/07	70168.07		***3.77***	162	0.132	3.41		1.39	4.41		3.88	
M12*	MW22	M12MW22	05/09/07	70168.09		***47.9***	46.2		***10***			***11.8***			
M12	MW19	M12MW19	05/09/07	70168.06			7.92							7.42	
M12	MW21	M12MW21	05/09/07	70168.08		***4.2***	348	0.166	2.94	2.22		1.79		5.49	
M12	MW25	M12MW25	05/09/07	70168.12			24.1			0.694	2.78			8.73	
M12	MW17	M12MW17	05/09/07	70168.04			89.6		2	0.548	4.59	2.27		5.88	
M12	MW18	M12MW18	05/09/07	70168.05			310	0.734	0.909		3.46		8.73	3.62	
M12	MW24	M12MW24	05/09/07	70168.11			34.3	0.211	0.255	0.539	1.3		3.16	5.08	
M12	MW23	M12MW23	05/09/07	70168.1			79.5	0.46	1.73	1.52	2.65	***15.3***	19.5	7.12	
M12	MW16	M12MW16	05/09/07	70168.03		***42.3***	66.4		3.86	1.81		4.14	1.77		
M12	MW16	MW16 Duplicate	05/09/07	70168.02		***38.5***	63		3.68	1.75		3.58	1.68	3.91	
M12	MW26	M12MW26	05/09/07	70168.13		***5.38***	58.1	0.388	1.72	0.469	3.86		1.3	2.87	
M12	MW21	M12MW21	08/07/07	70299.08		***5.52***	47		0.866						
M12	MW19	M12MW19	08/07/07	70299.06		***3.47***	9.73							6.95	
M12	MW17	M12MW17	08/07/07	70299.04		***3.77***	62.4		1.28					4.59	
M12*	MW22	M12MW22	08/07/07	70299.09		***63.8***	39.6		***11.4***	0.935		***12.7***			
M12	MW26	M12MW26	08/07/07	70299.13		***5.34***	34.6		0.632	0.397				3.47	
M12	MW20	M12MW20	08/07/07	70299.07		***4.34***	45.7		0.785	0.248	2.83			3.96	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	08/07/07	70299.12		***8.41***	28.5			0.22	1.24			7.4	
M12	MW18	M12MW18	08/07/07	70299.05			215	0.561	0.92		2.16		6.36		
M12	MW23	M12MW23	08/07/07	70299.1		2.98	85.9	***1.23***	2.23	1.35	1.05		24.4		
M12	MW24	M12MW24	08/07/07	70299.11		***5.53***	31.6				1.03		2.14	3.72	
M12	MW16	M12MW16	08/07/07	70299.03		***24.5***	68.3		2.01	1.06		0.863	1.31		
M12	MW16	MW16 Duplicate	08/07/07	70299.02		***29.5***	69.1		2.06	1.25			0.973		
M12	MW25	M12MW25	11/30/07	70499.12			36.8			0.703	1.14				
M12	MW20	M12MW20	11/30/07	70499.07			21.9			0.631	7.17				
M12	MW21	M12MW21	11/30/07	70499.08			69.2			0.459					
M12	MW17	M12MW17	11/30/07	70499.04			16.7			0.4					
M12	MW22	M12MW22	11/30/07	70499.09		***40.4***	48.6			0.396	1.5				
M12	MW19	M12MW19	11/30/07	70499.06			6.51		0.319	0.338					
M12	MW23	M12MW23	11/30/07	70499.1			42.1	0.324	0.86	1.01	2.31		9.24	4.33	
M12	MW24	M12MW24	11/30/07	70499.11			44.4	0.652	0.507		1.74		9.1		
M12	MW16	M12MW16	11/30/07	70499.03		***68.7***	210	0.559		1.42	0.561		8.79		
M12	MW16	MW16 Duplicate	11/30/07	70499.02		***77.5***	212	0.566		1.67	0.77		8.67		
M12	MW18	M12MW18	11/30/07	70499.05	0.718		340	0.984	0.81	0.4	3.38		8.61		
M12*	MW26	M12MW26	11/30/07	70499.13		2.84	39.1	0.177	0.488	6.48	12.7		1.34		
M12	MW16	M12MW16	03/07/08	80074.03		***45.1***	110	0.182		1.88	4.66		7.2		
M12	MW16	MW16 Duplicate	03/07/08	80074.02		***40.8***	113	0.173		1.85	4.29		6.92		
M12	MW25	M12MW25	03/07/08	80074.12			29.1			1.26	8.7		6.82		
M12	MW19	M12MW19	03/07/08	80074.06			9.88		0.301	0.215	2.91		5.28		
M12	MW26	M12MW26	03/07/08	80074.13		***6.37***	78.7	0.379	0.822	1.21	15.9		5.17		
M12	MW17	M12MW17	03/07/08	80074.04			33.2			0.24	4.31		3.54		
M12	MW20	M12MW20	03/07/08	80074.07		***3.11***	41.9			0.494	7.78		3.52		
M12	MW21	M12MW21	03/07/08	80074.08			61.3				3.54		3.22		
M12	MW22	M12MW22	03/07/08	80074.09		***25.5***	42.5			0.362	4.39		2.08		
M12	MW18	M12MW18	03/07/08	80074.05			424	***1.11***	1.18	0.417	7.92		15.2		
M12	MW24	M12MW24	03/07/08	80074.11			49.7	0.553	0.454		6.2		12.7		
M12	MW23	M12MW23	03/07/08	80074.1		2.8	44.9		0.741	1.71	6.07		10.7		
M12*	MW22	M12MW22	05/15/08	80165.09		***93.4***	50.3		***8.2***			***8.49***			
M12	MW17	MW17 Duplicate	05/15/08	80165.02			72.2		1.36	0.679					
M12	MW17	M12MW17	05/15/08	80165.04			73		1.37	0.486					
M12	MW23	M12MW23	05/15/08	80165.1			46.8		0.634	1.97	3.92		7.95	3.94	
M12	MW24	M12MW24	05/15/08	80165.11			33.5	0.203	0.689	0.473	1.35		5.51	6.05	
M12*	MW19	M12MW19	05/15/08	80165.06			27.4		0.374	1.06	10.9		23.8	7.82	
M12	MW25	M12MW25	05/15/08	80165.12			25.7			0.873	7.35		2.2	7.22	
M12	MW18	M12MW18	05/15/08	80165.05			313	0.87	0.946		3.09		10.3	5.85	
M12	MW26	M12MW26	05/15/08	80165.13		***4.06***	41.9	0.295	1.65	1.74	5.97	2.16	1.65		
M12	MW16	M12MW16	05/15/08	80165.03		***23.3***	53		2.84	2.02		2.66	0.934		
M12	MW21	M12MW21	05/15/08	80165.08			57.1		0.727				0.755	4.31	
M12	MW20	M12MW20	05/15/08	80165.07			44		0.979		0.953		0.538	5.85	
M12	MW17	M12MW17	08/07/08	80286.04			114		2.1			1.83			

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	08/07/08	80286.12		***3.01***	66.8		0.578					8.74	
M12	MW18	M12MW18	08/07/08	80286.05			314	0.823	1.26		1.63		9.39	5.05	
M12	MW16	M12MW16	08/07/08	80286.03		***22***	118	0.131	3.11	0.901		2.97	3.59		
M12	MW16	MW16 Duplicate	08/07/08	80286.02		***21.6***	118	0.155	2.91	0.746		1.86	3.43		
M12*	MW23	M12MW23	08/07/08	80286.1			31.8	***1.84***	1.71	1.6	5.99		29.9	5.07	
M12	MW24	M12MW24	08/07/08	80286.11			30.1		0.359				2.29	6.31	
M12	MW20	M12MW20	08/07/08	80286.07			44.6		0.895	0.359	22.1		1.96	4.86	
M12	MW19	M12MW19	08/07/08	80286.06	2.89		12.3						1.72	8.01	
M12*	MW22	M12MW22	08/07/08	80286.09		***68.8***	60.8		***10.3***	0.84		***11.6***	1.38		
M12	MW21	M12MW21	08/07/08	80286.08		2.78	43.7						1.04	6.04	
M12	MW26	M12MW26	08/07/08	80286.13		***3.44***	46.1		0.454				0.65	6.88	
M12	MW22	M12MW22	10/27/08	80390.09	4.48	***55.8***	45.9								
M12	MW25	M12MW25	10/27/08	80390.12			256		0.404						***2.15***
M12	MW21	M12MW21	10/27/08	80390.08			55		0.321						
M12	MW20	M12MW20	10/27/08	80390.07			31		0.391						
M12	MW17	M12MW17	10/27/08	80390.04			42.6		0.294						1.69
M12	MW26	M12MW26	10/27/08	80390.13			41.4	0.117	1.24	2.32					
M12	MW18	M12MW18	10/27/08	80390.05			316	0.94	1.05				8.75		
M12*	MW23	M12MW23	10/27/08	80390.1		2.6	40.8	***1.87***	2.27	2.4	3.82	1.5	30.8		
M12*	MW24	M12MW24	10/27/08	80390.11			60	***1.44***	1.41		0.821		25.6		
M12	MW16	M12MW16	10/27/08	80390.03	1.39	***43.5***	286	***1.03***		0.732			11.6		
M12*	MW16	MW16 Duplicate	10/27/08	80390.02		***58.7***	282	***1.37***		1.92			10.2		
M12	MW19	M12MW19	10/27/08	80390.06			11.8		0.88	0.544	3.57		0.775		
M12*	MW22	M12MW22	03/13/09	90109.09	***11***	***113***	50.9					***12***			
M12*	MW20	M12MW20	03/13/09	90109.07	***18***	***87.4***	34.1					***6.82***		***86.4***	
M12	MW26	M12MW26	03/13/09	90109.13	***15.1***	***76.2***	38.5				1.15	***5.56***		***78.7***	
M12*	MW17	M12MW17	03/13/09	90109.04	***15.6***	***83***	112					***6.17***		***72.7***	
M12*	MW21	M12MW21	03/13/09	90109.08	***11.8***	***109***	71.6					2.4		***106***	
M12*	MW16	M12MW16	03/13/09	90109.03	***12.8***	***84.2***	102	0.109		1.82		***10.2***		29.6	
M12*	MW19	M12MW19	03/13/09	90109.06	***16.5***	***91.1***	9.24	***1.15***	0.836	1.07	404	***18***		***79.5***	
M12*	MW25	M12MW25	03/13/09	90109.12	***21***	***111***	31.4			0.438	0.746	2.77		***91.5***	
M12*	MW24	M12MW24	03/13/09	90109.11	***18.6***	***72.8***	43.6	0.765				4.67	7.94	***92.4***	
M12	MW18	M12MW18	03/13/09	90109.05	***15.5***	***32.3***	280	0.809	0.745		0.846	***5.67***	6.77	***63.7***	
M12	MW23	M12MW23	03/13/09	90109.1	***7.04***	***56.8***	36.5	0.931	1.14	1.17	3.7	4.83	20.1	***65.9***	
M12	MW17	MW17 Duplicate	03/13/09	90109.02	***10.9***	***80.6***	117			1.01		4.44	1.55	***70.8***	
M12	MW20	M12MW20	06/08/09	90221.07	1.48	***27***	30.9				1.32	1.47			
M12	MW17	M12MW17	06/08/09	90221.04	3.95	***27.7***	122				1.29	2.55			
M12	MW21	M12MW21	06/08/09	90221.08	***6.2***	***26.1***	65.1					3.45		8.14	
M12	MW22	M12MW22	06/08/09	90221.09	4.28	***110***	50.8			0.92				3.39	
M12	MW18	MW18 Duplicate	06/08/09	90221.02	2.53	***14.7***	238	0.767	0.7		2.41		8.85		
M12	MW18	M12MW18	06/08/09	90221.05	2.89	***14.3***	232	0.746	0.633		2.34		8.67		
M12	MW24	M12MW24	06/08/09	90221.11	2.37	***16.7***	27.1	0.193			0.928		4.86		
M12	MW19	M12MW19	06/08/09	90221.06	4.52	***28.3***	8.72	0.124	0.219	0.539	9.91	1.57	3.41		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW26	M12MW26	06/08/09	90221.13	3.69	***11.5***	19.7	0.114		1.12	3.84		2.27		
M12	MW23	M12MW23	06/08/09	90221.1	3.14	***17.9***	46.7	0.574	0.782	0.472	2.63	2.4	16.7		
M12	MW25	M12MW25	06/08/09	90221.12	2.79	***29.2***	38.2				1.04	1.33	1.38	5.85	
M12	MW16	M12MW16	06/25/09	90263.01	2.31	***57.5***	97.8	0.246	0.441	1.84	0.979		2.55	13.4	
M12	MW22	M12MW22	09/08/09	90370.09		***64.8***	50.3		***4.34***			***5.02***			
M12	MW25	M12MW25	09/08/09	90370.12		***29.2***	58.3							***48.8***	
M12	MW21	M12MW21	09/08/09	90370.08		***26.8***	56.7							***44.9***	
M12	MW20	M12MW20	09/08/09	90370.07		***25***	28.6							39.2	
M12	MW17	M12MW17	09/08/09	90370.04		***21.6***	80.7		1.54					36.7	
M12	MW19	M12MW19	09/08/09	90370.06		***25.4***	7.92				1.07			36.6	
M12	MW26	M12MW26	09/08/09	90370.13		***20.4***	31.8							36.2	
M12	MW18	MW18 Duplicate	09/08/09	90370.02		***6.83***	239	0.792	0.627		2.92		7.25	18	
M12	MW18	M12MW18	09/08/09	90370.05		***9.26***	239	0.767	0.739		2.53		7.06	27	
M12	MW16	M12MW16	09/08/09	90370.03		***55***	205	0.651	2.08				6.95	20.8	
M12	MW24	M12MW24	09/08/09	90370.11		***17.3***	39.9	0.432					5.57	35.3	
M12*	MW23	M12MW23	09/08/09	90370.1		***15***	31.6	***1.67***	1.95		4.32		25.7	30.2	
M12	MW22	M12MW22	11/18/09	90451.09		***96.1***	52					***6.04***			
M12	MW17	M12MW17	11/18/09	90451.04		0.77	39.3								
M12	MW18	M12MW18	11/18/09	90451.05		1.11	256	0.801					9.12	9.05	
M12	MW18	MW18 Duplicate	11/18/09	90451.02			258	0.819					9.03		
M12	MW19	M12MW19	11/18/09	90451.06		0.99	16.9						3.05		
M12	MW24	M12MW24	11/18/09	90451.11		0.82	53.3	***1.24***					19.2	13.6	
M12	MW23	M12MW23	11/18/09	90451.1		1.05	57	0.568	1.13				18	10.9	
M12	MW16	M12MW16	11/18/09	90451.03		***39.1***	213	0.628					10.6		
M12	MW26	M12MW26	11/18/09	90451.13		2.27	27.1						1.01		
M12	MW25	M12MW25	11/18/09	90451.12	5.87	0.7	78						0.821	11.5	
M12	MW21	M12MW21	11/18/09	90451.08	***7.79***	1.74	64.3						0.644		
M12	MW20	M12MW20	11/18/09	90451.07		0.8	30.4						0.632		
M12	MW18	M12MW18	02/04/10	10049.05			146	0.446			2.16		6.3		
M12	MW18	MW18 Duplicate	02/04/10	10049.02		0.88	140	0.437			1.16		6.26		
M12	MW16	M12MW16	02/04/10	10049.03		***25.3***	84.9	0.106				2.58	4.14		
M12	MW26	M12MW26	02/04/10	10049.09		1.85	23.1	0.163	0.856	1.74			2.99		
M12	MW24	M12MW24	02/04/10	10049.08			37.6	0.677	0.817		1.59		12.4		
M12	MW23	M12MW23	02/04/10	10049.07			27.7	0.271		2.59	2.22		10.8		
M12	MW20	M12MW20	02/04/10	10049.06		1.17	22				1.75		1.25		
M12	MW17	M12MW17	02/04/10	10049.04		0.66	33.2						0.996		
M12	MW25	M12MW25	02/05/10	10052.06	5.23	1.69	22.5				1.08				
M12	MW22	M12MW22	02/05/10	10052.05		***47.2***	24.2		0.565						
M12	MW19	M12MW19	02/05/10	10052.03		0.69	3.43								
M12	MW19	MW19 Duplicate	02/05/10	10052.02			2.8								
M12	MW21	M12MW21	02/05/10	10052.04		1.1	50.5						1.02		
M12	MW19	LF3(1)	06/02/10	10226.05	4.91		5.81								0.72
M12	MW17	LF3(1) Duplicate	06/02/10	10226.02	5.34		4.64								

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW17	LF3(1)	06/02/10	10226.03	***7.94***		4.53								1.76
M12	MW20	LF3(1)	06/02/10	10226.06			25.6								
M12	MW18	LF3(1)	06/02/10	10226.04			137	0.554					5.44		1.94
M12	MW26	LF3(1)	06/03/10	10234.03	5.87		27.1								
M12	MW25	LF3(1)	06/03/10	10234.06	***6.44***		15.3								
M12	MW26	LF3(1) Duplicate	06/03/10	10234.02	***6.7***		24.9								
M12	MW21	LF3(1)	06/03/10	10234.04	***8.59***		50.6								
M12	MW24	LF3(1)	06/03/10	10234.05	***6.25***		56.7	***1.35***	1				18.7		1.21
M12	MW23	LF3(1)	06/04/10	10235.05	***6.75***	0.74	70.3	***1.23***	1.86		3.41	2.78	32.4		
M12	MW16	LF3(1)	06/04/10	10235.04	***7.81***	***19.92***	69.3	0.169	1.41				1.98		
M12	MW22	LF3(1)	06/04/10	10235.03	***9.83***	***136***	48.8	0.138	2.43			***7***	0.65		
M12	MW22	LF3(1) Duplicate	06/04/10	10235.02	***11.8***	***122***	51.6	0.143	2.72			4.83	0.579		
M12	MW15	M12MW15	08/20/10	10357.02	***10.2***	0.68	305	0.815	2.42		4.93	3.19			
M12	MW14	M12MW14	08/20/10	10357.01		0.68	83.6	0.8	0.68		3.46		28.9		
M12	MW20	MW20 LF4(1)	09/08/10	10379.06	***13.3***		26.1					4.09			
M12	MW19	MW19 LF4(1)	09/08/10	10379.05	***13.7***	0.97	6.08								
M12	MW17	MW17 LF4(1)	09/08/10	10379.04	***16.1***	0.67	4.35								
M12	MW18	MW18 LF4(1)	09/08/10	10379.03	5.49	1.2	169	0.655	0.749		2.26		5.66		
M12	MW18	MW18 LF4(1)	09/08/10	10319.02	***8.99***	0.99	169	0.651					5.52		
M12	MW25	MW25 LF4(1)	09/09/10	10382.06	***15.5***	0.89	14.3								
M12	MW22	MW22 LF4(1)	09/09/10	10382.07	***17.7***	***47.82***	43.6		3.65			***7.19***			
M12	MW21	MW21 LF4(1)	09/09/10	10382.03	***18.9***	1.3	57		0.799						
M12	MW21	MW21 LF4(1)	09/09/10	10382.02	***20.2***	1.17	60.9		0.776						
M12	MW26	MW26 LF4(1)	09/09/10	10382.04	***14.3***	1.92	38.3	0.105	0.808	3.05	1.7	2.8			
M12	MW16	MW16 LF4(1)	09/09/10	10382.08	***12.8***	***47.03***	135	0.231	2.46	1.78		***5.31***	3.75		
M12*	MW24	MW24 LF4(1)	09/09/10	10382.05	***13.9***	1.24	61.3	***1.78***	1.05		4.06		24.7		
M12*	MW23	MW23 LF4(1)	09/10/10	10384.01	***12.8***	***3.67***	46.5	***2.05***	2	2.04	2.49	***5.49***	36.3		
				Mean	8.34	31.80	75.47	0.61	2.25	1.46	7.59	5.38	8.09	19.44	1.58
				90th Percentile	16.18	81.08	169.00	1.23	3.82	2.28	9.65	11.44	20.36	65.90	2.05
				Adjusted Mean	7.17	24.06	52.68	0.50	1.30	1.09	3.01	4.38	5.94	12.28	1.46

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-12 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling

Well ID	Antimony	Arsenic	Beryllium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*5*	*40*	*2*
M12MW16			1.37	10.2	*	*
M12MW17						
M12MW18						
M12MW19		91.1	1.15	18	*	*
M12MW20	18			6.82	*	*
M12MW21	20.2	109			*	*
M12MW22		136		12	*	*
M12MW23			2.05		*	*
M12MW24	18.6		1.78		*	*
M12MW25	21	111			*	*
M12MW26						

Notes:

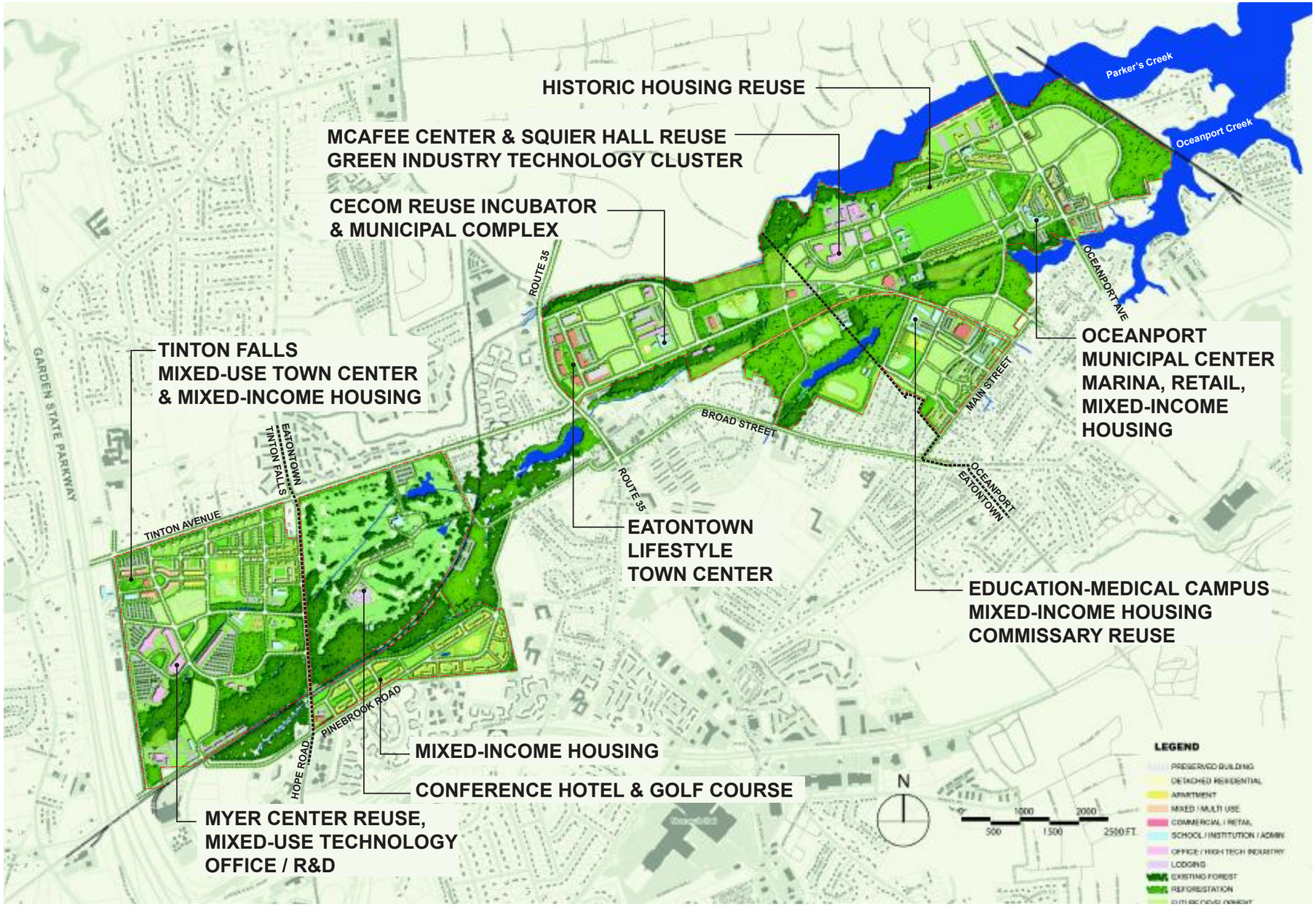
Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

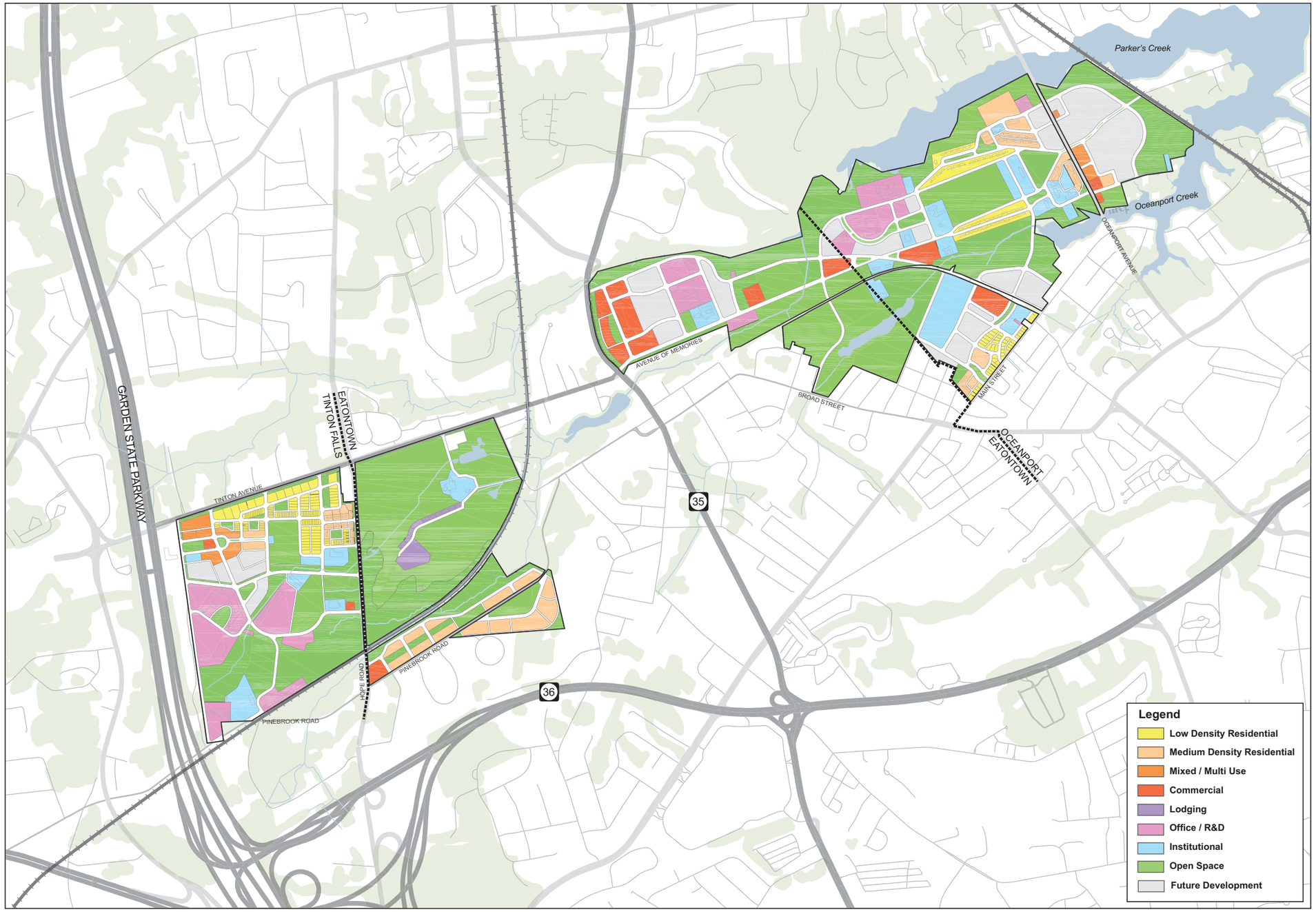
Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.



FORT MONMOUTH CONCEPT PLAN **CONCEPT PLAN IN 2018 (10 - YEAR PLAN)**

FMERPA



FORT MONMOUTH CONCEPT DIAGRAM : LAND USE PLAN IN 2018 (10 YEAR PLAN)

FMERPA

0 500 1,000 2,000
Feet

FINAL

Remedial Investigation Report
M-12 Landfill Site

U. S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works



September 2003

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, Pennsylvania 19044

Contract No. DACA 51-00-D-004
Delivery Order No. 18

United States Army
Fort Monmouth, New Jersey

Remedial Investigation Report for the M-12 Landfill Site

Fort Monmouth, New Jersey

September 2003

PREPARED BY:



201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044

September 2003

VERSAR PROJECT NO. 4936.118

TABLE OF CONTENTS (cont.)

EXECUTIVE SUMMARY iv
1.0 INTRODUCTION 1-1
1.1 Objectives 1-1
1.2 Report Organization 1-2
2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING 2-1
2.1 Site Location and Description 2-1
2.2 Site Background 2-1
2.2.1 Site Investigation Report – Weston 2-2
2.2.2 Remedial Investigation Report for Soil – VERSAR 2-3
2.3 Current Conditions 2-3
2.4 Environmental Setting 2-3
2.4.1 Regional and Local Geology 2-4
2.4.2 Hydrogeology 2-5
2.4.3 Soils 2-6
2.4.4 Topography and Surface Drainage 2-7
3.0 SITE ACTIVITIES 3-1
3.1 Well Installation 3-1
3.2 Sample Collection Activities 3-2
3.2.1 Groundwater Sampling Activities 3-2
3.2.2 Surface Water Sampling Activities 3-3
3.2.3 Supplemental Soil Sampling Activities 3-4
3.3 Groundwater Depth Measurements 3-4
3.4 Slug Testing Procedures 3-4
3.3 Sensitive Receptors/Well Survey 3-5
4.0 SITE PHYSICAL CHARACTERISTICS 4-1
4.1 Lithology 4-1
4.2 Groundwater Flow 4-1
4.2.1 Groundwater Flow Direction 4-1
4.2.2 Hydrogeologic Properties 4-2
5.0 SITE CHEMICAL CHARACTERIZATION 5-1
5.1 Groundwater Sample Results 5-1
5.1.1 Contaminants of Concern 5-2
5.1.2 Remaining Analytes 5-2
5.1.2.1 Volatile Organic Compounds 5-2
5.1.2.2 Semi-volatile Organic Compounds 5-2
5.1.2.3 Pesticides/PCBs 5-2
5.1.2.4 Metals 5-3
5.1.3 Low-Flow Sampling 5-3
5.1.4 Metals Exceedences Discussion 5-4
5.2 Surface Water Sample Results 5-5
5.3 Supplemental Soil Sample Results 5-7
5.4 Quality Assurance/Quality Control (QA/QC) 5-7

TABLE OF CONTENTS (cont.)

6.0.GROUNDWATER USE DESIGNATION 6-1
6.1 Groundwater Model Development 6-1
6.1.1.Conceptual Site Model 6-1
6.1.2.Model Input Parameters 6-2
6.1.3.Model Calibration 6-5
6.1.4 Model Results 6-6
6.2 Sensitive Receptor Survey Results 6-6
6.2.1.Offsite Receptor Report 6-6
6.2.2.Well Record Search 6-7
6.3 Aquifer Classification 6-8
6.4 Contaminant Migration Summary 6-9
7.0.CONCLUSIONS AND RECOMMENDATIONS 7-1
8.0.REFERENCES 8-1

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Site M-12 Location Map
Figure 2-3 Geologic Map of New Jersey
Figure 2-4 Soil Map of Monmouth County, New Jersey
Figure 3-1 Monitoring Well Location Map
Figure 3-2 Surface Water Sample Location Map
Figure 3-3a Soil Sample Location Map
Figure 3-3b Soil Sample Location Map
Figure 4-1 Geologic Cross-Section Location Map
Figure 4-2 Geologic Cross-Section A to A’
Figure 4-3a Groundwater Elevation Contour Map for February 25, 2000
Figure 4-3b Groundwater Elevation Contour Map for Map 23, 2000
Figure 4-3c Groundwater Elevation Contour Map for September 12, 2000
Figure 4-3d Groundwater Elevation Contour Map for February 6, 2001
Figure 5-1 Groundwater Contaminant Distribution Map
Figure 6-1 Geologic Cross-Section B to B’
Figure 6-2 Model Boundaries and Grid
Figure 6-3 Cross-Section of Model Area
Figure 6-4 Initial Concentrations of Lead and Arsenic
Figure 6-5 Flow Directions and Groundwater Elevation Contours
Figure 6-6 Calculated Versus Observed Head
Figure 6-7a Predicted Arsenic Concentration, 27.4 Years, at M12MW16
Figure 6-7b Predicted Arsenic Concentration, 27.4 Years, at M12MW22
Figure 6-7c Arsenic Concentration Versus Time
Figure 6-8a Predicted Lead Concentration, 274 Years, at M12MW21
Figure 6-8b Lead Concentration Versus Time
Figure 6-9 Domestic and Irrigation Wells
Figure 6-10 Outcrop and Thickness of the Composite Confining Unit

TABLE OF CONTENTS (cont.)

TABLES

Table 3-1	Well Construction Summary
Table 3-2	Groundwater Sample Collection Summary
Table 3-3	Surface Water Sample Collection Summary
Table 3-4	Groundwater Elevation Summary
Table 3-5	Soil Boring Sample Collection Summary
Table 4-1	Data for Geologic Cross-Section A to A'
Table 4-2	Slug Testing Results
Table 5-1	Groundwater Quality Sampling Results
Table 5-2	Stream Sample Results
Table 5-3	Determination of Contaminants of Concern
Table 5-4	Subsurface Soil Sample Results
Table 6-1	Groundwater Model Input Parameters
Table 6-2	Groundwater Model Results
Table 6-3	Well Search Summary

APPENDICES

ON CD

Appendix A	Roy F. Weston, Inc. Site Investigation Report, December 1995; Section 4.2.8 – Landfill 12 (M-12)
Appendix B	VERSAR Current Conditions Site Photographs
Appendix C	Boring Logs and Monitoring Well Construction Records
Appendix D	Chain-of-Custody Forms for Groundwater Samples and Laboratory Data Sheets
Appendix E	Chain-of-Custody Forms for Surface Water Samples and Laboratory Data Sheets
Appendix F	Chain-of-Custody Forms for Soil Boring Samples and Laboratory Data Sheets
Appendix G	Slug Test Analyses and Raw Data
Appendix H	Sensitive Receptor Survey
Appendix I	Well Survey and Well Search Summary

EXECUTIVE SUMMARY

VERSAR, Inc. (VERSAR) has been contracted by the United States (U.S.) Army Garrison, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey, to prepare a Remedial Investigation Report (RIR) to document site conditions at the M-12 Landfill site located at Fort Monmouth. This report addresses the remedial investigation activities performed at this site to investigate soil, groundwater and surface water conditions from October 1996 through February 2001.

The M-12 Landfill site was a former historic fill site located on the central portion of the Main Post south of Husky Brook and west of Murphy Drive. The M-12 Landfill site consists of two distinct areas, a northwest area and a southwest area. The approximate size of the northwest area is 60,100 ft^2 (1.4 acres). The approximate size of the southwest area is 29,200 ft^2 (0.7 acre). The Weston SI report (1995) showed that the M-12 historic fill site was suspected to contain domestic and industrial wastes and was used for the disposal of old automobile wastes. The period of operation of the historic fill site is unknown.

Weston (1995) conducted geophysical surveys, including a Ground Penetrating Radar (GPR) survey and magnetometer surveys, to locate the historic fill boundaries. The results of the geophysical surveys identified fill and buried ferrous material within the suspected boundaries of the historic fill site. Monitoring wells (M12MW16, M12MW17 and M12MW18) were installed at strategic locations to monitor groundwater downgradient of these areas. Groundwater sampling results indicated that no analytes exceeded the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Criteria (GWQC) in samples collected from the monitoring wells. The Weston SI Report (1995) also presented a DPW proposal for the M-12 Landfill site that was subsequently implemented by the DPW. A long-term groundwater and surface water monitoring program was developed utilizing the existing monitoring wells and supplemental wells installed during follow-up investigations. The purpose of the long-term monitoring program is to observe surface water and groundwater quality trends, and use them in conjunction with other field and laboratory investigation results to formulate a remedial strategy (if needed) for the site.

Fort Monmouth DPW has conducted Remedial Investigation activities, including the implementation of a long-term monitoring program, subsurface soil and hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater and surface water in the vicinity of the M-12 Landfill site. While the Weston report found no direct evidence of a source area or significant impacts to soil, groundwater, or surface water, the historical use of the site as a landfill, as well as the condition of the near-surface soils (i.e., cover material), were of concern to the DPW. Remedial investigation activities were performed from October 1996 and continued through February 2001. The results of these investigations are presented in this report.

A near-surface soil investigation was conducted at the M-12 Landfill site to characterize the shallow soils that cover the historic fill areas. The DPW obtained samples from the top two feet of soil at various locations throughout the site between March 1998 and September 1999. Low concentrations of various analytes were detected, but no Contaminants of Concern (COC) were identified at concentrations that require remedial actions to be performed. The results of this investigation are presented under separate cover (*Remedial Investigation (RI) Report for Near-Surface Soils,* VERSAR (pending)).

Eleven (11) monitoring wells (M12MW16 through M12MW26) comprise the quarterly groundwater monitoring program conducted by the DPW. Three (3) of the 11 wells were installed in 1995 during the Weston SI (M12MW16, M12MW17, and M12MW18), with the remaining eight wells installed by the DPW during the supplemental investigation of the site. The quarterly groundwater and surface water sampling program was conducted from June 1997 through February 2001 at the M-12 Landfill site. A targeted soil sampling program was conducted by the DPW in March 2001. The locations of the supplemental soil borings and soil sample locations were selected based on the groundwater quality results from two specific monitoring wells at the M-12 Landfill site**, which indicated elevated concentrations of lead and arsenic**. The borings were drilled and soil samples were collected to determine if groundwater impacts by metals identified near M12MW16 and M12MW22 were the result of localized soil contamination or naturally occurring soil constituents. The results of these investigations suggest that groundwater is not adversely impacted by the presence of these compounds in soils proximal to M12MW16 and M12MW22.

The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The conceptual site model considers the site-specific topography, groundwater recharge, groundwater flow conditions and the geologic formations present at the site. The MODFLOW computer model was used to simulate groundwater flow and contaminant transport beneath the M-12 Landfill site.

Arsenic and lead were identified as COCs in groundwater at the M-12 Landfill site. Groundwater modeling and the sensitive receptor survey were conducted to determine whether groundwater from the M-12 Landfill site could impact surface water, off-site domestic wells, and adjacent aquifers. The groundwater modeling illustrates that the impact of arsenic and lead in groundwater is minimal due to the low hydraulic conductivity of the geologic formations, sorption of the metals to the soil (retardation), and the corresponding low potential for contaminant migration. The sensitive receptor survey indicates that there are no domestic or irrigation wells in close proximity to the M-12 Landfill site, and adverse impacts to human health or the environment are unlikely.

To evaluate surface water quality and ensure that groundwater seepage from the M-12 Landfill site is not adversely impacting the surface water, it is recommended that surface water samples be collected and analyzed for arsenic and lead at locations in Husky Brook

near the M-12 Landfill site. The present long-term monitoring program at Fort Monmouth includes quarterly surface water sampling at strategic locations. Additional or alternate locations and focused laboratory analyses (i.e., to include arsenic and lead) are required to better monitor surface water quality adjacent to the M-12 Landfill site.

Further groundwater monitoring and remedial investigation activities at the M-12 Landfill site are not required. No Further Action is recommended with respect to soil and groundwater at the site.

1.0 INTRODUCTION

VERSAR, Inc. (VERSAR) has been contracted by the United States (U.S.) Army Garrison, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare a Remedial Investigation Report (RIR) to document groundwater and surface water conditions at the M-12 Landfill site located at Fort Monmouth. This report addresses the remedial investigation activities performed at this site to investigate soil, groundwater and surface water conditions from October 1996 through February 2001.

1.1 Objectives

The objectives of this RIR are to define aquifer chemical and physical characteristics and to determine the requirement for further remedial activities at the M-12 Landfill site. The remedial investigation was conducted in accordance with New Jersey Department of Environmental Protection (NJDEP) *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq.

The remedial investigation and subsequent preparation of the RIR encompassed the following:

- Characterization of surface water quality through quarterly surface water sampling events conducted from October 1996 through June 2000.
- Characterization of groundwater quality through quarterly groundwater sampling events conducted from June 1997 through January 2001.
- Comparison of the results of the groundwater and surface water quality monitoring programs with the NJDEP Ground Water Quality Criteria (GWQC) and Surface Water Quality Criteria (SWQC).
- Investigation and evaluation of the designated aquifer uses, the associated aquifer classification, and the appropriate groundwater quality criteria for groundwater resources beneath the M-12 Landfill site. The NJDEP Ground Water Quality Standards (GWQS) specify the appropriate quality criteria and designated uses for groundwater and also contain technical and general policies to ensure that the designated uses can be adequately protected.
- Supplemental subsurface soil sampling in the immediate vicinity of two monitoring wells at the site (M12MW16 and M12MW22) to assess whether the incidences of metal compounds in the groundwater at these two locations are the result of localized soil contamination.
- Performance of slug tests during February 2001 to characterize the hydraulic conductivity and groundwater flow regime.
- Development of a groundwater flow and transport model for the M-12 Landfill site based on the hydrogeologic data, field investigation programs and technical research to evaluate the migration of potential contaminants of concern (COCs) beneath the site.
- Formulation of a No Further Action (NFA) proposal for consideration by the NJDEP based on the results of field and laboratory investigations and the

hydrogeologic conditions at the site. The rationale for the NFA proposal is presented in this RIR.

1.2 Report Organization

This report is organized to minimize repetition. The findings of the Roy F. Weston, Inc. (Weston) report entitled, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report (December 1995)*, were used as the basis for this remedial investigation program. **Section 2** provides background information and a general description of the M-12 Landfill site located at Fort Monmouth. **Section 3** describes and summarizes the RI field activities conducted at the M-12 Landfill site, including groundwater, surface water, soil sampling, and aquifer testing. **Section 4** presents the physical characterization of the site including the lithology and groundwater conditions at the site. The site chemical characterization is presented in **Section 5**, which includes groundwater, surface water, and targeted soil sample results, as well as the determination of potential COCs. **Section 6** discusses the potential for contaminant migration in the vicinity of the site, and presents groundwater modeling involving the COCs. Conclusions and a NFA recommendation are presented in **Section 7**.

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING

The following sections describe the site background and environmental setting of the area surrounding Fort Monmouth and the M-12 Landfill site. Included is a description of the site location, background, current conditions and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Creek, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WW I) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

The M-12 Landfill site was a former historic fill site located on the central portion of the Main Post (**Figure 2-2**) south of Husky Brook and west of Murphy Drive. The M-12 Landfill site consists of two areas, a northwest area and a southwest area. The approximate size of the northeast area is 60,100 ft^2 (1.4 acres). The approximate size of the southwest area is 29,200 ft^2 (0.7 acre). The Weston SI report (1995) showed that the M-12 historic fill site was suspected to contain domestic and industrial wastes and was used for the disposal of old automobile wastes. The period of operation of the historic fill site is unknown.

2.2 Site Background

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Roy F. Weston, Inc. (Weston) to perform a field investigation at Fort Monmouth, New Jersey. This investigation was conducted at two separate areas of Fort Monmouth, the Main Post and the Charles Wood area. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). A background investigation was conducted by Weston of the 37 sites and eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled, *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In this background report, additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas, including the M-12 Landfill site. NJDEP

approved the recommendations on April 20, 1995. Additional investigations were also recommended at the Evans Area, and such investigations are being completed under the Base Realignment and Closure (BRAC) program.

The 1995 Weston SI report presents the results of field investigation activities that were performed at 13 sites at the Main Post area and eight sites at the Charles Wood area. The results of the investigation of the M-12 Landfill site are included in the Weston SI report. Initial field investigation activities were performed between November 1994 and March 1995. The field investigation activities included surface geophysical investigations, sediment and surface water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitoring well installation and sampling, and tidal monitoring. The Weston SI report was used as the basis for the supplemental remedial investigations described in the following sections of this report.

2.2.1 Site Investigation Report – Weston

Weston, as part of an SI of the M-12 Landfill site, conducted geophysical surveys including a ground penetrating radar (GPR) survey and magnetometer surveys to locate the historic fill boundaries. The results of the geophysical surveys identified fill and buried ferrous material within the suspected boundaries of the historic fill site. Monitoring wells (M12MW16, M12MW17 and M12MW18) were installed at strategic locations to monitor groundwater downgradient of these areas (see Figure 4.2-15 of the Weston SI presented in **Appendix A** and **Section 3.1** for detailed monitoring well construction information). The monitoring wells were sampled twice for Target Compound List (TCL) plus 30 parameters (TCL+30), Target Analyte List (TAL) metals, and cyanide. Groundwater sampling results obtained during the Weston SI indicated that no analytes exceeded NJDEP GWQC in samples collected from the monitoring wells.

Tidal fluctuations in Husky Brook were monitored by Weston at the M-12 Landfill site to determine if a relationship exists between the water levels in the brook and groundwater levels. Results of the tidal monitoring indicated that there was no apparent relationship between the water levels in the brook and groundwater levels in M12MW19 and M12MW20 (both of these monitoring wells are located in the adjacent M-14 Landfill site). A poor-to-moderate relationship between the groundwater depths and the surface water levels was suggested for M12MW16, M12MW17 and M12MW18. Salinity measurements in Husky Brook indicated the presence of brackish to salty water at the M-12 Landfill site. However, groundwater sampling at each monitoring well location indicated freshwater. Therefore, the groundwater movement is not believed to be tidally influenced to any significant degree and does migrate toward Husky Brook at the M-12 Landfill site.

The Weston SI Report also presented a DPW proposal for the M-12 Landfill site that was subsequently implemented. A long-term groundwater and surface water monitoring program was developed utilizing the existing monitoring wells and supplemental wells installed during follow-up investigations, as well as surface water sampling locations.

The groundwater and surface water monitoring program activities as well as the results of subsurface soil sampling are described in **Section 3.0.**

2.2.2 Remedial Investigation Report for Soil – VERSAR

To characterize the near-surface soils that cover the M-12 Landfill site, DPW obtained samples from the top two feet of soil at various locations throughout the site between March 1998 and September 1999. The soil samples were analyzed for the Target Compound List plus 30 (TCL+30) parameters and Target Analyte List (TAL) metals. The data that exceeded the laboratory method detection limit (MDL) and/or the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC) (May 1999) were summarized by VERSAR in table form in the draft *Remedial Investigation (RI) Report for Near-Surface Soils* (pending). This report will be submitted to the DPW and NJDEP under separate cover when completed.

Analytical results of the near-surface soil site characterization efforts at the M-12 Landfill site were compared to applicable remediation standards as required by NJAC 7:26E-4.8(c)3i. VERSAR used the compliance averaging approach to assess and evaluate compliance with the various NJDEP RDCSCC. While exceedences of NJDEP RDCSCC were identified in the shallow soils for SVOCs and metals within the historic fill site, evaluation of the analytical results did not define a distinctive "source area" or concentrations of contaminants that necessitated the identification and evaluation of potential remedial actions. Either the calculated compliance average was below the respective RDCSCC or the exceedence was considered marginal or an isolated occurrence with a de minimis quantity (i.e., a small amount of contaminated soil with proximal samples showing analyte concentrations below the RDCSCC and/or non-detect). Based upon the frequency of the occurrences and the magnitude of the detections, no further action is warranted with respect to shallow soils. These findings and conclusions are described in detail in VERSAR's *Remedial Investigation (RI) for Near Surface Soils* (pending).

2.3 Current Conditions

VERSAR conducted a site walk on December 11, 2000, to assess current conditions at the M-12 Landfill site. The site consists of two areas separated by a tributary to Husky Brook, which is bounded by trees and shrubs. The western area was recently backfilled and graded with dark organic soil fill material. There was no vegetation present with the exception of areas along Husky Brook on the north side of the site, which was bounded with trees. The eastern portion of the site was an open field of grass. Site photographs are provided in **Appendix B**.

2.4 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding the M-12 Landfill site. Included is a description of the regional geology of

the area surrounding Fort Monmouth, as well as descriptions of the local geology and hydrogeology of the Main Post area.

2.4.1 Regional and Local Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-12 Landfill site is located in what is referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 2-3**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet (ft) per mile and are deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. The individual thickness for these units varies greatly (i.e., from several ft to several hundred ft). The Coastal Plain deposits thicken to the southeast from the Fall Line (i.e., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 ft in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous-age Red Bank Sand and Tinton Sand, and the Tertiary-age Hornerstown Sand crop out at the Main Post area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 ft per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite. The Navesink Formation, which crops out approximately four miles northwest of the Main Post, is dark grayish-black clayey glauconitic sand which conformably overlies the Mount Laurel Sand.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard, 1969).

The Hornerstown Sand unconformably overlies the Red Bank Sand and dips to the southeast at 50 to 60 feet per mile. The Hornerstown Sand consists of a dark green clayey glauconitic sand.

The Tertiary-age Kirkwood and Vincentown Formations crop out approximately two miles south of the Main Post. The Vincentown Formation contains a lower member which is a greenish-gray glauconitic sand and an upper member which ranges from sand to clayey limestone. The Kirkwood Formation consists of alternating layers of sand and clay. The Vincentown and Kirkwood Formations dip to the southeast at approximately 20 and 27 feet per mile, respectively (Jablonski, 1968).

As presented in the Weston SI report (relevant portions presented in **Appendix A**), the lithologic logs from monitoring well installations indicated indicate that the lithology at the M-12 Landfill site consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the fill materials observed in the borings consisted of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay. Groundwater saturation was observed at approximately two feet below ground surface (bgs) across the site. Water-level elevation data collected during the Weston SI indicates that local groundwater flow appears to be consistently to the northwest toward Husky Brook. Further discussion of the subsurface conditions is presented in **Section 4.0**.

2.4.2 Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Wells installed in the Red Bank and Tinton Sands produce two to 25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2 to 9 ft bgs). Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

Based on a review of the NJDEP Ground Water Quality Standards (NJAC 7:9-6), January 7, 1993, VERSAR has determined that the site is underlain by a Class III-A aquifer. A formal presentation of this finding was made to the NJDEP on April 17, 2001. The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable use. Further discussion of the Class III-A aquifer designation is presented in **Section 6.3**.

Shallow groundwater may be locally influenced within the Main Post area by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- Topography
- Nature of the fill material within the Main Post area
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. The groundwater in the vicinity of the M-12 Landfill site appears to be flowing in a north to northwesterly direction toward Husky Brook.

2.4.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey (April 1989), the majority of the Main Post is covered by urban land (**Figure 2-4**). The soil survey describes urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils).

The following soil series and classification units are mapped in the Main Post area:

- DoB Downer sandy loam (with 2 to 5 percent slopes);
- FrB Freehold sandy loam (with 2 to 5 percent slopes);
- FUB Freehold sandy loam/urban land complex (with 0 to 10 percent slopes);
- HV Humaquepts, frequently flooded;
- KvA Kresson loam (with 0 to 5 percent slopes);
- UA Udorthents, smoothed; and
- UD Udorthents – urban land complex (with 0 to 3 percent slopes).

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are one to 10 percent glauconite and are found on uplands. The Humaquepts soils are

somewhat poorly- to very poorly- drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately, well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and glass. The soils in the vicinity of the M-12 Landfill site are classified as UA – Udorthents, smoothed, which may also include old sand and gravel pits that have been smoothed or filled in (**Figure 2-4**).

2.4.4 Topography and Surface Drainage

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities conducted by the military. The land surface at the Main Post is relatively flat and ranges in elevation from approximately 4 ft above mean sea level (msl) in the east at Oceanport Creek to 32 ft msl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft msl in elevation.

Surface water runoff from the western part of the Main Post flows into the Lafetra Creek to the north or into the Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Mill Creek is channelized and flows past the north side of the M-2 Restoration site. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers Creek and Oceanport Creek are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

The M-12 Landfill site is located on the south side of Husky Brook, which flows eastward into Oceanport Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 ft above mean sea level (msl). Surface water runoff from the M-12 Landfill site is likely to flow northward into Husky Brook.

3.0 SITE ACTIVITIES

Fort Monmouth DPW has conducted Remedial Investigation activities at the M-12 Landfill site, including a quarterly surface water and groundwater sampling program and subsurface soil investigations, based on the earlier results and findings of the 1995 Weston SI. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater and surface water in the vicinity of the M-12 Landfill site. While the Weston report found no direct evidence of a source area or significant impacts to soil, groundwater or surface water, the historical use of the site as a landfill, as well as the condition of the near-surface soils (i.e., cover material) were of concern to the DPW. The unknown source of the present fill material prompted the DPW to conduct further investigations. Remedial investigation activities were performed from October 1996 and continued through February 2001. These activities were managed by the Fort Monmouth DPW and performed by DPW's base operations contractor, TECOM-Vinnell Services (TVS). The details of remedial investigation activities that occurred at the M-12 Landfill site are described in the following sections.

3.1 Well Installation

A total of eleven (11) monitoring wells (M12MW16 through M12MW26) comprise the quarterly groundwater monitoring program conducted by the DPW. Three (3) of the 11 wells were installed in 1995 during the Weston SI (M12MW16, M12MW17, and M12MW18), with the remaining eight wells installed by the DPW during the supplemental investigation of the site. **Figure 3-1** shows the selected locations of the monitoring wells at the M-12 Landfill site. The location of each well was strategically selected by the DPW to determine if any potential contaminant was discharging to Husky Brook along the downgradient perimeter of the M-12 Landfill site. Additional wells were located both upgradient and side gradient to monitor the background quality of groundwater flowing onto the M-12 Landfill site. The monitoring well construction details are presented in **Table 3-1**. Well boring logs and monitoring well records are provided in **Appendix C**.

Three monitoring wells (M12MW16, M12MW17 and M12MW18) were initially installed at the M-12 Landfill site to monitor groundwater downgradient of fill area (Weston, 1995). These monitoring wells were installed in the northeastern area of the M-12 Landfill site by Weston in January 1995. The wells were constructed with 4-inch diameter 10 Slot PVC to a maximum finished depth of 14.5 feet (ft) and extended into the historic fill material.

Additional groundwater monitoring wells (M12MW19 through M12MW26) were installed (November 1999) upgradient, downgradient and side gradient of the historic fill area during the Remedial Investigation in the southwestern portion of the M-12 Landfill site. The wells were constructed with 4-inch diameter 10 Slot PVC to a maximum finished depth of 18.0 feet. The wells extend through the historic fill materials to native material.

3.2 Sample Collection Activities

As part of the remedial investigation of the M-12 Landfill site, a quarterly groundwater and surface water sampling program was conducted from June 1997 through January 2001. Sampling activities were performed in accordance with the *Fort Monmouth Standard Sampling Operating Procedure (*December 1997). Laboratory analyses of the samples collected at the M-12 Landfill site were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory (Certification No. 13461).

3.2.1 Groundwater Sampling Activities

This section describes the quarterly groundwater sampling program conducted by the DPW at the M-12 Landfill site from June 1997 through January 2001. Groundwater samples were collected during seventeen (17) quarterly sampling events and analyzed for TCL+30 (VOCs plus 15 tentatively identified compounds and SVOCs plus 15 tentatively identified compounds), pesticides/Polychlorinated Biphenyls (PCBs) and TAL metals. Two additional low-flow sampling rounds for TAL metals were also conducted, which are addressed separately, below.

A total of 149 groundwater samples, including 17 duplicate samples, 18 field blanks, and 18 trip blanks for quality assurance/quality control (QA/QC), were collected from eleven (11) monitoring wells (M12MW16 through M12MW26). Monitoring wells M12MW16, M12MW17 and M12MW18, installed by Weston (1995), were sampled during rounds 1 through 17 from June 1997 through January 2001. The additional monitoring wells (M12MW19 through M12MW26) were incorporated into the quarterly groundwater monitoring program and sampled from February 2000 through January 2001 (rounds 12 through 17). The 149 groundwater samples collected over 17 quarterly sampling rounds were analyzed for TCL+30 (VOCs plus 15 tentatively identified compounds and SVOCs plus 15 tentatively identified compounds), pesticides, PCBs and TAL metals by FMETL using EPA Methods 624, 625, 608, 3113B and 3111D (or 3120B and 3112B).

Copies of the chain-of-custody forms for the laboratory analyses and laboratory data sheets are presented in **Appendix D**. A summary of the groundwater sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters, and analysis method, is provided in **Table 3-2**. The results of these analyses are discussed in **Section 5.1**.

As presented in the SI Report (Weston, 1995), several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, and manganese (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples. A low-

flow sampling methodology was proposed for use by the DPW and accepted by the NJDEP to assess the impact of entrained sediments on the dissolved phase metals concentrations at the site. Using a low-flow sampling methodology to reduce the presence of entrained sediment has generally yielded substantial reductions in the dissolved phase concentrations of metals, such as arsenic, antimony, beryllium, cadmium, chromium, cobalt, lead, mercury, selenium, silver, thallium and vanadium at Fort Monmouth sites. Significant decreases in the concentrations of metals characteristic of glauconitic sand also were observed. These included aluminum, barium, calcium, copper, iron, magnesium, manganese, nickel, potassium, sodium and zinc.

In consideration of the potential benefits of the low-flow sampling procedure, two additional rounds of low-flow sampling (Low-flow #1 and Low-flow #2) were conducted on August 18 through August 22, 2000, and September 9 through September 21, 2000. A total of 34 samples, including six duplicate samples and six field blanks, were collected and analyzed only for TAL metals to determine whether elevated metals concentrations observed in the groundwater samples at the M-12 Landfill site are due to entrained soil particles (i.e., high turbidity) rather than dissolve phased groundwater constituents. The samples were analyzed by FMETL for TAL metals utilizing EPA Methods 3120B and 3112B. The results of these analyses are discussed in greater detail in **Section 5.1**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (1997). Following collection, the groundwater samples were immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

3.2.2 Surface Water Sampling Activities

Surface water sampling was conducted by the DPW from October 1996 through February 2001. A total of 65 surface water samples were collected over 22 rounds of sampling from three (3) distinct surface water sample collection points (Site #9, Site #11 and Site #19). **Figure 3-2** shows the locations of the surface water sample collection points at the M-12 Landfill site. The samples were analyzed by FMETL for VOC plus fifteen tentatively identified compounds (VOC+15) parameters utilizing EPA Methods 601 and 602 (purgeable halocarbons and aromatics). Surface water samples collected beginning June 12, 2000 were also analyzed by FMETL for Total Polychlorinated Biphenyls (PCBs) utilizing EPA Methods 608. The results of these analyses are discussed in **Section 5.2**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (1997). The surface water samples were collected and immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the FMETL under proper chain-of-custody procedures. Copies of the chain-of-custody forms for the laboratory analyses are presented in **Appendix E**. A summary of the surface water sampling activities, including rounds, sample IDs, stream sampling

locations, collection/analysis date, analytical parameters and analysis method is provided in **Table 3-3**.

3.2.3 Supplemental Soil Sampling Activities

Supplemental soil sampling was conducted at the M-12 Landfill site by the DPW on March 3, 2001. A total of 65 subsurface soil samples were collected from fifteen (15) distinct Geoprobe® borings. The locations of these soil borings were selected based on the groundwater quality results from the monitoring wells at the M-12 Landfill site (**Section 5.1**). The borings were drilled and soil samples were collected to determine if groundwater impacts by metals identified in the vicinity of M12MW16 and M12MW22 were the result of localized soil contamination or naturally occurring soil constituents. Nine (9) borings were drilled in the vicinity of monitoring well M12MW16 (borings MW16-A through MW16-I) and six (6) borings were drilled in the vicinity of well M12MW22 (borings MW22-A through MW22-F). The soil samples were collected from each boring at depth intervals ranging from 0 to 66 inches bgs. **Figures 3-3a and 3-3b** shows the locations of the soil sample collection points at the M-12 Landfill site. The samples were analyzed by FMETL for arsenic and lead utilizing EPA Methods 7060A, 7420, and 3051A. The results of these analyses are discussed in **Section 5.4**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (1997). The soil samples were collected and immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the FMETL under proper chain-of-custody procedures. Copies of the soil sample chain-of-custody forms for the laboratory analyses are presented in **Appendix F**. A summary of the soil sampling activities, including rounds, sample IDs, stream sampling locations, collection/analysis date, analytical parameters and analysis method is provided in **Table 3-4**.

3.3 Groundwater Depth Measurements

During each of the groundwater monitoring rounds, measurements of the depth to water in each of the monitoring wells was recorded with an accuracy of 0.01 feet. These depth to groundwater measurements, recorded from June 1997 through January 2001, are presented in **Table 3-5**. The groundwater elevation at each well was calculated by subtracting the measured depth to groundwater from the elevation of the top of the well casing. The groundwater elevations are discussed in **Section 4.2**.

3.4 Slug Testing Procedures

VERSAR conducted slug testing in eleven monitoring wells located at the M-12 Landfill site on February 6 and 7, 2001. The slug testing was performed to estimate hydrogeologic properties of the shallow soils at this site, such as groundwater velocity, to be used for contaminant transport modeling. The equipment used to perform the slug

testing included a Hermit Environmental Data logger (Model 1000C), a 10-psi pressure transducer, and a 4-foot long, 3.5-inch diameter PVC slug.
The slug testing was performed by first recording the depth to top of groundwater, then placing the slug and the transducer in the well and allowing the water to equilibrate to a level close to the original water level. The new water level was set as the reference water level for the data logger during the slug test. The slug was then removed and the data logger recorded the changing water level with time. The collected data were then transferred to a personal computer for later review and reduction. The raw data are presented in **Appendix G**.

3.3 Sensitive Receptors/Well Survey

Searches were conducted using various databases and historical information to identify receptors and groundwater wells that may be potentially affected by the M-12 Landfill site. An Offsite Receptor Report (dated March 12, 2001) was prepared for the M-12 Landfill site by Environmental Data Resources, Inc. (EDR).

In addition, a search of the comprehensive well database maintained by the NJDEP – Well Permitting and Regulations Section of the Bureau of Water Allocation was performed to identify groundwater wells that may potentially be affected by the M-12 Landfill site. The search was performed for a one mile radius surrounding the central point of the M-12 Landfill site. A copy of the sensitive receptor survey is provided in **Appendix H** and a copy of the Well Search Summary is provided in **Appendix I**. The results of the sensitive receptor survey and well survey are discussed in **Section 6.2**.

4.0 SITE PHYSICAL CHARACTERISTICS

The following sections represent the findings of the site geologic and hydrogeologic characterization program. These sections include a detailed discussion of the physical properties of the unconsolidated soil, bedrock and groundwater underlying the study area. Groundwater elevation and water quality data collected by the DPW from June 1997 through January 2001 are presented in this RI report. Surface water quality data collected during the period October 1996 through February 2001 are also discussed in this report. The surface water and groundwater sampling and associated laboratory analytical data comprise the long-term monitoring (LTM) program that was instituted by the DPW after the Weston SI activities.

4.1 Lithology

The lithology encountered at the site consists primarily of fill material, fine sand, silt and clay. A geologic cross section (A-A') was prepared for nine monitoring wells situated along Husky Brook. The cross section location map is included as **Figure 4-1**. Cross-section A-A' is presented in **Figure 4-2**. The data used to create the cross section are presented in **Table 4-1**.

Cross section A-A' depicts the profiles for monitoring wells M12MW22, M12MW21, M12MW26, M12MW20, M12MW25, M12MW19, M12MW17, M12MW16 and M12MW18. These wells consistently encountered fill (Layer 1) consisting of green to brown sand, little silt and clay at the top of the boring, with the maximum depth of the fill ranging from four to 10 feet bgs. There was a small zone of fill (Layer 3) in monitoring wells M12MW20, M12MW25, and M12MW19 consisting of cinders, ash slag and coal. Native soil (Layer 2) was encountered below the fill in each monitoring well, consisting of brown to black fine sand, silt and clay with organic material with a maximum depth of 14 to 18 feet. There is likely a high variability in the hydraulic conductivity of the different soil types because of the presence and heterogeneity of the fill materials.

4.2 Groundwater Flow

Groundwater was encountered in both the fill and native soils in each monitoring well at depths ranging from one to 6.5 feet bgs with a slight gradient toward Husky Brook. Groundwater velocity and flow directions were predicted based on the groundwater elevation data and slug test results (see below), as well as the interpretation of groundwater contour maps prepared for selected sampling events.

4.2.1 Groundwater Flow Direction

Four groundwater contour maps were generated based on groundwater depth measurements from the monitoring wells collected on February 25, 2000 (Figure 4-3a), May 23, 2000 (Figure 4-3b), September 12, 2000 (Figure 4-3c), and February 6, 2001 (Figure 4-3d). The groundwater underlying the site appears to be flowing consistently to the northwest into Husky Brook. Variations in groundwater elevation were observed

during the 18 rounds of water level measurements. The groundwater elevation data are presented in **Table 3-5**.

4.2.2 Hydrogeologic Properties

As discussed in **Section 3.4**, VERSAR conducted slug testing on all monitoring well located on the M-12 Landfill site on February 6 and 7, 2001. VERSAR used the computer software *Aquifer Test* by Waterloo Hydrogeologic, Inc. (version 3.0, 2001) to reduce the slug testing data using the Bouwer-Rice methodologies. Data plots generated by Aquifer Test are presented in **Appendix G**. A summary of the calculated conductivity values is presented in **Table 4-2**. The calculated conductivity values range from 0.0899 feet/day at Monitoring Well M12MW26 to 208 feet/day at Monitoring Well M12MW17, with a calculated geometric mean of 4.4 feet/day. The geometric mean was used because of the high variability of the slug test results. This high variability in the range of hydraulic conductivities is associated with the shallow depth of the monitoring wells, partial penetration into the aquifer, and the heterogeneous nature of the fill material at the site.

The groundwater flow gradient for the site was estimated using the groundwater elevation data discussed above. The groundwater flow gradient (i) is calculated by measuring the distance (L) between two equipotential lines h_1 and h_2 using the following equation:

$$i = \frac{h_1 - h_2}{L}$$

The groundwater flow gradient for the site, based on water level measurements collected February 6, 2001, was calculated to be 0.04 feet per foot for the M-12 Landfill site.

Groundwater flow velocity (V) in the vicinity of the site was then estimated using the groundwater flow gradient (i), an estimated hydraulic conductivity (K) for the surrounding soils based on the slug test results, and an assumed porosity (α) in the following equation:

$$V = \frac{Ki}{\alpha}$$

The hydraulic conductivity (K) used in the calculation, 4.4 feet/day, is a geometric average based on the results of slug testing performed by VERSAR. The geometric average was used in the calculation due to the range of variability of the slug test results. The porosity (α) was estimated at 40% using average values for silt and sands (Heath, USGS, 1989). The groundwater velocity for the site was calculated at 0.44 feet per day (approximately 160 feet per year) based on the February 6, 2001 water-level measurements.

5.0 SITE CHEMICAL CHARACTERIZATION

This section includes a discussion of the chemical characterization of the site based on the various samples collected and analyzed, including seventeen quarterly rounds of monitoring well samples, two low-flow rounds of monitoring well sampling, and nineteen rounds of surface water samples. DPW personnel were responsible for the collection of samples during this site investigation. Sample analyses were performed by the FMETL, a New Jersey certified laboratory (Certification No. 13461).

5.1 Groundwater Sample Results

A total of 149 quarterly groundwater samples plus 34 additional low-flow samples were collected to evaluate potential chemical impacts to groundwater from the M-12 Landfill site. The laboratory analytical results are summarized in **Table 5-1**. This section presents a discussion of the results of laboratory analyses performed for the 17 rounds of groundwater samples collected from June 1997 through January 2001 from the eleven monitoring wells at the M-12 Landfill site. Three monitoring wells (M12MW16, M12MW17 and M12MW18) were installed in January 1995 as part of the Weston SI and sampled by the DPW between June 1997 and January 2001. The remaining eight monitoring wells (M12MW19 through M12MW26) were installed in November 1999 and sampled by the DPW from February 2000 through January 2001. The groundwater samples were collected and analyzed for TCL+30 (Volatile Organic Compounds and Semi-Volatile Organic Compounds), pesticides/PCBs, and TAL metals. The groundwater sampling program included two additional (non-quarterly) rounds of sampling conducted on August 18 through August 22, 2000 (Low-flow #1), and September 9 through September 21, 2000 (Low-flow #2) using a low-flow groundwater sampling technique for TAL metals. As stated above, a low-flow sampling methodology was proposed for use by the DPW and accepted by the NJDEP to assess the impact of suspended sediments on the dissolved phase metals concentrations at the site.

For the purposes of this report, the NJDEP criteria used for comparison of the M-12 Landfill site groundwater analytical results were the higher of the Practical Quantitation Limits (PQLs) and the NJDEP Ground Water Quality Criteria (GWQC) **for Class II-A** aquifers (NJAC 7:9-6, Table 1). However, as discussed in **Section 2.4.2**, Fort Monmouth is underlain by a Class III-A aquifer. The appropriate groundwater quality criteria for Class III-A are the criteria for the most stringent classification for vertically or horizontally adjacent groundwaters that are not Class III-A (NJAC 7:9-6.7(e)).

Analytes detected in groundwater samples at concentrations above the NJDEP criteria are bold and highlighted in **Table 5-1**. The laboratory chain of custody forms and laboratory data sheets for groundwater samples are provided in **Appendix D**. **Figure 5-1** shows the groundwater contaminant distribution within the area of the M-12 Landfill site. This section discusses the detection of the compounds and analytes of the four analytical categories, VOCs, SVOCs, Pesticides, PCBs and TAL metals.

During seventeen (17) rounds of groundwater samples collected from June 1997 through January 2001, a total of three (3) VOCs were detected in site groundwater, each of which were detected below the respective NJDEP criteria. A total of nine (9) SVOCs were detected in site groundwater at concentrations below the respective NJDEP criteria. There were no pesticides or PCBs detected during the groundwater sampling events at any of the groundwater monitoring well locations at the M-12 Landfill site. A total of 23 metals were detected in site groundwater. Eight (8) metals were detected at concentrations that exceed the respective NJDEP criteria in at least one sample, while the remaining fifteen (15) metals were detected below the respective NJDEP criteria.

The following sections present the analytes detected above the NJDEP criteria found in the groundwater at the M-12 Landfill site.

5.1.1 Contaminants of Concern

Arsenic and Lead are considered to be the only COCs at the M-12 Landfill site. The following paragraphs present the results of the COCs.

Arsenic was detected at concentrations above the NJDEP criteria of 8 ug/L during eighteen (18) separate rounds of sampling collected from three (3) separate monitoring well locations. Concentrations ranged from 8.85 ug/L in M12MW16 (sampling round #12) to 52.9 ug/L in M12MW22 (Low-Flow #1).

Lead was detected at concentrations exceeding the NJDEP criteria of 10 ug/L during eight (8) separate rounds of sampling collected at eight (8) monitoring well locations. Concentrations ranged from 14 ug/L in M12MW26 (sampling round #16) to 82.9 ug/L in M12MW21 (sampling round #15).

5.1.2 Remaining Analytes

The remaining contaminants, some of which were detected above the NJDEP criteria, occur at low to moderate concentrations in a limited number of groundwater monitoring well samples collected from June 1997 through January 2001. **Sections 5.1.2.1 through 5.1.2.4** summarize these results.

5.1.2.1 Volatile Organic Compounds

No VOCs were detected above the appropriate NJDEP criteria at the site.

5.1.2.2 Semi-volatile Organic Compounds

No SVOCs were detected above the appropriate NJDEP criteria at the site.

5.1.2.3 Pesticides/PCBs

No pesticides or PCBs were detected at the site.

5.1.2.4 Metals

During seventeen (17) rounds of groundwater samples collected from June 1997 through January 2001, a total of eight (8) metals were detected in site groundwater at concentrations that exceed the respective NJDEP criteria in at least one sample.

Aluminum was detected at concentrations exceeding the NJDEP criteria of 200 ug/L during nineteen (19) separate rounds (i.e., 17 quarterly rounds plus two low-flow sampling rounds) of sampling collected at nine (9) separate monitoring well locations. Concentrations ranged from 204 ug/L in M12MW18 (sampling round #5) to 7540 ug/L in M12MW23 (sampling round #10).

Cadmium was detected at concentrations exceeding the NJDEP criteria of 4 ug/L during three (3) separate rounds of sampling collected at four (4) separate monitoring well locations. Concentrations ranged from 4.01 ug/L in M12MW16 (sampling round #11) to 19.4 ug/L in M12MW17 (sampling round #9).

Iron was detected at concentrations exceeding the NJDEP criteria of 300 ug/L during nineteen (19) separate rounds (i.e., 17 quarterly rounds plus two low-flow sampling rounds) of sampling collected at eleven (11) separate monitoring well locations. Concentrations ranged from 305 ug/L in M12MW23 (Low-Flow #1) to 124000 ug/L in M12MW22 (sampling round #17).

Manganese was detected at concentrations exceeding the NJDEP criteria of 50 ug/L during nineteen (19) separate rounds (i.e., 17 quarterly rounds plus two low-flow sampling rounds) of sampling collected at ten (10) separate monitoring well locations. Concentrations ranged from 50.1 ug/L in M12MW17 (sampling round #10) to 5440 ug/L in M12MW16 (sampling round #2).

Silver was detected at concentrations exceeding the NJDEP criteria of 2 ug/L during four (4) separate rounds of sampling collected at three (3) separate monitoring well locations. Concentrations ranged from 5.61 ug/L in M12MW18 (sampling round #11) to 60 ug/L in M12MW18 (sampling round #3).

Sodium was detected at concentrations exceeding the NJDEP criteria of 50000 ug/L during two (2) separate rounds of sampling collected at one (1) separate monitoring well location. Concentrations ranged from 84600 ug/L in M12MW25 (sampling round #12) to 107000 ug/L in M12MW25 (sampling round #15).

5.1.3 Low-Flow Sampling

Two (2) separate rounds of sampling (August 18 through August 22, 2000 and September 9 through September 21, 2000) were performed during the quarterly groundwater sampling program using the low-flow groundwater sampling technique as discussed in **Section 3.2.1**. This technique was used to determine if the detected metal concentrations

observed in the groundwater samples are a function of entrained sediments suspended in the groundwater during the course of well purging and sampling activities, or an accurate representation of dissolved phase aquifer/groundwater conditions. The use of the low-flow sampling approach did not eliminate the detection of the two (2) uncharacteristic metals (arsenic and lead), which persisted at concentrations exceeding the NJDEP cleanup criteria during the two low-flow sampling rounds mentioned above.

5.1.4 Metals Exceedences Discussion

These specific metals exceedances and the identification of each constituent as a potential contaminant of concern are discussed below. **Table 5-3** summarizes the process used to identify contaminants of concern at the M-12 Landfill site.

As presented in the SI Report (Weston, 1995), several natural and man-made factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, and manganese (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples. A low-flow sampling methodology was proposed for use by the DPW and accepted by the NJDEP to assess the impact of suspended sediments on the dissolved phase metals concentrations at the site. Using a low-flow sampling methodology to reduce the presence of suspended sediment yielded substantial reductions in the dissolved phase concentrations of metals, particularly for the constituents regarded as “non-native” (i.e., arsenic, antimony, beryllium, cadmium, chromium, cobalt, lead, mercury, selenium, silver, thallium, vanadium). Significant decreases in the concentrations of naturally occurring metals also were observed when the low-flow sampling procedure was used prior to analysis, including the results for aluminum, barium, calcium, copper, iron, magnesium, manganese, nickel, potassium, sodium, and zinc. However, the native metal constituents (i.e., those indigenous to the soil types present at Fort Monmouth) were consistently present in the groundwater, even when the low-flow sampling methodology was employed.

The eight different metals that were detected in site groundwater at concentrations exceeding the New Jersey GWQC (aluminum, arsenic, cadmium, iron, lead, manganese, silver and sodium) are distinguished into background and non-native metals. The indigenous metals are compared to the Main Post Maximum Background Concentrations (MBC) identified in the SI (Weston, 1995), which are presented in **Tables 5-1 and 5-3**. The non-native metals are discussed in relation to the New Jersey GWQC only.

Of the eight metals detected in site groundwater that exceed the NJDEP cleanup criteria, three metals (aluminum, iron and manganese) are common background constituents in Monmouth County soils. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. Elevated concentrations of these metals are routinely observed in groundwater samples collected at Fort Monmouth. In consideration

of these facts, the groundwater analytical results for aluminum, iron and manganese were compared to their respective MBCs of 121,000 ug/L, 431,000 ug/L and 331 ug/L. The MBC for each constituent was not exceeded during any sampling event at the M-12 Landfill site and therefore, these constituents are not identified as a COC.

The MBC for sodium of 21,500 ug/L was exceeded at monitoring well locations M12MW18, M12MW23 M12MW24 M12MW25 during at least one sampling event. However, based on the proximity of Husky Brook and the likelihood of brackish or saline waters, sodium is not identified as a COC.

There were four (4) non-native metals detected in site groundwater that exceeded the NJDEP criteria (arsenic, cadmium, lead and silver).

Cadmium had only a single exceedance of the NJDEP cleanup criteria, which is believed to be erroneous. Silver had eight exceedances of the NJDEP cleanup criteria, however there were no exceedances since October 1999. Based on the frequency of occurrence and the magnitude of the detection, cadmium and silver were not identified as COCs.

Of the eight metals detected above the NJDEP criteria, two (2) are considered to be COCs (arsenic and lead). Arsenic was detected above the NJDEP GWQC of 8 ug/L during 18 of 19 sampling events at three different monitoring well locations. Lead was detected above the NJDEP GWQC of 10 ug/L during eight of 19 sampling events at eight of 11 different monitoring well locations.

Based on the magnitude of the exceedances, the frequency of occurrences, and the wide-ranging results, arsenic and lead are identified as potential COC at the M-12 Landfill site and are given further consideration with regard to contaminant migration potential in **Section 6.0** of this RI report.

No other potential contaminants of concern were identified in groundwater at the M-12 Landfill site.

5.2 Surface Water Sample Results

This section presents a summary of the laboratory analyses performed for the 22 rounds of surface water sampling (a total of 65 surface water samples) that were conducted from October 1996 through February 2001 from three (3) surface water sample collection points (Site #9, Site #11 and Site #19) at the M-12 Landfill site. The samples were analyzed by FMETL for VOC+15 utilizing EPA Methods 601 and 602 (purgeable halocarbons and aromatics). Surface water samples collected beginning with the June 12, 2000 sampling event were also analyzed by FMETL for PCBs utilizing EPA Method 608.

The purpose of this section of the report is to determine if the contaminants of concern identified in groundwater are impacting the surface water quality at the M-12 Landfill site. The laboratory analytical results for stream sampling are summarized in **Table 5-2**. The results were compared to the NJDEP Surface Water Quality Standards (SWQS).

Analytes detected above the respective NJDEP cleanup criteria in **Table 5-2** are highlighted in yellow shading and bold typeface. The laboratory chain of custody forms for surface water samples are provided in **Appendix E**.

A total of twelve (12) VOCs were detected in surface water samples. Of the 12 VOCs detected, eight (8) VOCs were detected at concentrations below the NJDEP SWQS. The remaining four (4) VOCs detected during the sampling events were detected above the NJDEP SWQS in at least one sample. There were no PCBs/pesticides detected in any of the surface water samples.

A discussion of the four (4) VOCs found at concentrations above the SWQS is provided below:

Methylene chloride was detected above the NJDEP SWQS of 2.49 ug/L in nine (9) separate rounds of sampling collected at three (3) separate site locations. *Methylene chloride* was detected above the SWQS at concentrations ranging from 2.71 ug/L in sampling round #4 at Site #11 to 3.83 ug/L in sampling round #3 at Site #19.

Tetrachloroethene (PCE) was detected above the NJDEP SWQS of 0.39 ug/L in two (2) separate rounds of sampling collected at one (1) separate site location. *PCE* was detected above the SWQS at concentrations ranging from 0.49 ug/L in sampling round #2 at Site #11 to 0.60 ug/L in sampling round #3 at Site #11.

Trichloroethene (TCE) was detected above the NJDEP SWQS of 1.09 ug/L in nine (9) separate rounds of sampling collected at one (1) separate site location. *TCE* was detected above the SWQS at concentrations ranging from 1.22 ug/L in sampling round #5 at Site #11 to 2.75 ug/L in sampling round #3 at Site #11.

Vinyl chloride was detected above the NJDEP SWQS of 0.08 ug/L in two (2) separate rounds of sampling collected at one (1) separate site location. *Vinyl chloride* was detected above the SWQS at concentrations ranging from 1.21 ug/L in sampling round #1 at Site #11 to 1.71 ug/L in sampling round #4 at Site #11.

Surface water samples were not analyzed for metal constituents and organic compounds (SVOCs, Pesticides and PCBs) are not identified as COCs at the site, as discussed in Section 5.2.

It is the contention of the DPW that the concentrations of the four (4) VOCs detected above the NJDEP SWQC in the surface water samples are from a source upgradient of the M-12 Landfill site beyond the boundary of Fort Monmouth. No similar constituents were detected in groundwater at the M-12 Landfill site. Therefore, the constituents detected in surface water adjacent to the M-12 Landfill site are not identified as COC.

There were no VOC, SVOCs or PCBs detected in groundwater at concentrations exceeding the NJDEP criteria. Of the three (3) VOCs (2-butanone, chlorobenzene and acetone) that were detected in groundwater above the laboratory method detection limit,

only the acetone was similarly detected in the surface water samples, but at concentrations below the appropriate SWQS. The concentrations of analytes detected in both groundwater and surface water at the site are significant because the presence of an analyte in both matrices (i.e., in groundwater and surface water) may signify the migration of groundwater contaminants into the nearby surface water body (Husky Brook) at the M-12 Landfill site. This situation has not occurred.

5.3 Supplemental Soil Sample Results

After identifying arsenic and lead to be COCs in site groundwater, the DPW installed 15 GeoProbe borings and conducted subsurface soil sampling in the vicinity of wells M12MW16 and M12MW22, the primary locations of significant groundwater exceedances. There were nine (9) borings extended in the vicinity of monitoring well M12MW16 (borings MW16-A through MW16-I) and six (6) borings extended in the vicinity of well M12MW22 (borings MW22-A through MW22-F). The soil samples were collected from each boring at depth intervals ranging from 0 to 66 inches bgs. A total of 65 subsurface soil samples were collected from the 15 soil borings installed at the M-12 Landfill site. The samples were analyzed by FMETL for arsenic and lead utilizing EPA Methods 7060, 7420, and 3051A. **Figures 3-3a and 3-3b** show the locations of the subsurface soil sample collection points at the M-12 Landfill site. A summary of the subsurface soil sample analytical results is provided in **Table 5-4**.

Arsenic was detected at concentrations above the NJDEP RDCSCC of 20 mg/kg at ten (10) separate soil boring locations. Concentrations ranged from 26.13 mg/kg in soil boring location MW16-A (depth of 0-6") to 466.74 mg/kg in soil boring location MW22-F (depth of 24-30").

Lead was detected at concentrations below the RDCSCC of 400 mg/kg in each of the 65 soil samples collected from the 15 boring locations installed at the M-12 Landfill site.

The results of the soil sampling do not support a localized source of arsenic or lead contamination in soil in the vicinity of monitoring wells M12MW16 and M12MW22 at the M-12 Landfill site. Lead was not detected above the RDCSCC at any soil boring sample location. Arsenic was detected at 10 of 15 soil boring locations at concentrations greater than the RDCSCC, but only a single location indicated an arsenic concentration that exceeds the RDCSCC by more than one order of magnitude (M22-F). Therefore, the arsenic is likely attributable to the native soil characteristics or a non-point source distributed throughout the M-12 Landfill site. Because the constituents are not found to a significant degree, it is unlikely that either soil constituent is adversely affecting the quality of shallow groundwater at the site.

5.4 Quality Assurance/Quality Control (QA/QC)

In order to verify the reliability of the analytical results, Versar reviewed the holding times for each sample and the results of the analysis of twenty-six (26) method blanks, seventeen (17) trip blanks, twenty-three (23) field blanks, and twenty-two (22) field

duplicate samples. All samples were analyzed by the Fort Monmouth Environmental Testing Laboratory (FMETL) within the prescribed holding time requirements for each analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-12 Landfill site. These method blanks consist of laboratory grade water that is processed identically to the samples and analyzed with the sample batch. A total of twenty-six (26) method blanks were analyzed with the M-12 Landfill site samples.

No VOCs were detected in any method blank samples.

Four (4) SVOCs were detected in three (3) method blank samples. These SVOCs were diethylphthalate, di-n-butylphthalate, n-Nitrosodiphenylamine and bis (2-ethylhexyl) phthalate, each of which are components of plastics and are common laboratory contaminants. None of these SVOCs was detected in concentrations exceeding the NJDEP criteria, and their presence in so few samples is not indicative of a widespread laboratory contamination problem.

No pesticides or PCBs were detected in any method blank samples.

Several metals were detected in at least one method blank sample, including aluminum, antimony, barium, cadmium, calcium, chromium, copper, iron, magnesium, manganese, nickel, potassium, silver, sodium and zinc. Most of the metals were detected in only a few samples at very low concentrations. However, silver was detected in at least one method blank at a concentration greater than the NJDEP criteria; silver was also found in the M-12 Landfill site groundwater samples at levels exceeding the NJDEP criteria. Therefore, any subsequent evaluation of silver's analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples. However, silver is not the primary contaminant of concern for the M-12 Landfill site.

Trip Blanks

Seventeen (17) trip blanks were included as part of the M-12 Landfill site sampling programs to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by FMETL and consisted of sample bottles filled with laboratory deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis with the groundwater samples.

Two (2) VOCs were detected in at least one trip blank. Acetone was detected in one of the trip blanks, but it did not exceeded the NJDEP criteria. Chloroform was detected in two (2) of the trip blanks, with no exceedences of the NJDEP criteria. The detections of acetone and chloroform indicate that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process.

Field Blanks

One (1) field blank sample was obtained during each day's sampling activities to document the equipment decontamination procedures. A total of twenty-three (23) field samples (i.e., field blanks) were collected during the M-12 Landfill site sampling events. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for each day's activities. The water was collected in clean laboratory-supplied sample jars and submitted for analysis along with the M-12 Landfill site groundwater samples.

The results of the field blank analyses showed that two (2) VOCs were detected in at least one field blank. Acetone was detected in two (2) of the field blanks, but neither exceeded the NJDEP criteria. Chloroform was also detected in two (2) of the field blanks, but again, neither exceeded the NJDEP criteria. As noted for the trip blanks, the detections of chloroform and acetone indicate that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process. In addition, the same VOCs found in the field blanks were also found in the trip blanks, suggesting that the sampling and decontamination procedures did not introduce additional contamination.

Three (3) SVOCs, diethylphthalate, di-n-butylphthalate and bis (2-ethylhexyl) phthalate were each detected in at least one field blank sample. All three (3) analytes were detected at low concentrations that are below the NJDEP criteria. In addition, each of these compounds was also identified in the method blanks; therefore, their presence in the field blank samples does not suggest that the sampling and decontamination procedures introduced additional contamination.

As noted for the method blanks, several metals were detected in at least one field blank sample, including aluminum, antimony, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, vanadium and zinc. Most of the metals were detected in only a few samples at very low concentrations. However, aluminum, cadmium, iron, lead and silver were detected in at least one field blank at concentrations greater than the NJDEP criteria. Because these metals were all also detected in the method blank samples, the sampling and decontamination procedures do not appear to have been the source of sample contamination. However, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

Duplicate Samples

Twenty-two (22) field duplicate samples were also collected during the M-12 Landfill site sampling events to verify the consistency of the entire sampling and analytical procedure. The results for all of the duplicate samples were close to those obtained for the original samples. The relative percent differences (RPDs) for the duplicate samples VOCs ranged from 21.4% to 24.7%. These RPDs are well below the established limit of

30% for laboratory duplicate samples and indicate that a high level of precision was maintained throughout the sampling and analytical procedures.

The RPDs for the duplicate samples metals analyses ranged from 0.0% to 193.5%, however, the average RPD for all of the metals results is 29.7%. This indicates that, overall, good precision was maintained, but that the metals results were much more varied than those for the VOCs. The apparent metals contamination noted in the method and field blanks may have impacted the precision of the metals analysis.

The QC sample results indicate good precision for all of the analyses. However, the presence of metals in the method blanks and field blanks indicate that contamination may have been introduced by the sampling and analysis procedures. Therefore, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

6.0 GROUNDWATER USE DESIGNATION

The purpose of developing a groundwater model was to predict the migration of the identified COCs, arsenic and lead, in groundwater at the M-12 Landfill site. For the model, specific areas of the site were assigned initial concentrations of these COCs and predictions of the migration and change in COC concentration over time were made. The initial COC concentrations, as well as future predictions (results) of the COC concentrations, are presented graphically. The time required to achieve compliance with the NJDEP criteria was estimated for each COC.

6.1 Groundwater Model Development

A conceptual site model for the M-12 Landfill site was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site (discussed in **Section 4.2**).

The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (i.e., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations.

6.1.1 Conceptual Site Model

The land surface at the Main Post is relatively flat and ranges in elevation from 4 ft above mean sea level (amsl) in the east at Oceanport Creek to 32 ft amsl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft amsl in elevation. The M-12 Landfill site is located on the south side of Husky Brook, which flows eastward into Oceanport Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 ft amsl. Surface water runoff from the M-12 Landfill site is likely to flow northward into Husky Brook.

According to Jablonski (1968), the average precipitation for Monmouth County is 44.67 inches per year. After precipitation reaches the ground, the water cycle begins and the water is lost to the atmosphere through evapotranspiration, discharged to receiving waters as surface runoff, or percolates into the soil as groundwater recharge. Groundwater is then separated into water utilization and groundwater flow ("base flow"). The average groundwater recharge for the site was calculated from Jablonski (1968) to be approximately 13.28 inches per year, which is the sum of the base flow (11.56 inches per year), utilization from groundwater (0.84 inches per year), and the utilization from surface water (0.88 inches per year).

As discussed in **Section 2.4.1**, the geologic formations that outcrop at the Fort Monmouth Army Base include the Tinton and Red Bank Sands, as well as the Hornerstown Formation. These formations, along with the Navesink Formation, are part of the Composite Confining Unit that overlies the Wenonah-Mount Laurel Aquifer (Zapecza, 1990). A cross section of the New Jersey Coastal plain that shows these formations is presented in **Figure 6-1.**

As discussed in **Section 4.1**, the lithology encountered during drilling of the monitoring wells at the M-122 Restoration site consists primarily of fill material, fine sand, silt and clay. The wells consistently encountered fill with a maximum depth ranging from four to 10 feet bgs. The fill consists of green to brown sand, with some silt and clay at the top of the boring. Native soil was encountered below the fill in each of the monitoring well borings, which consisted of brown to black fine sand, silt and clay with organic material.

On February 6, 2001, groundwater was encountered at depths ranging from 1.91 to 8.16 feet bgs (**Table 3-4**) with a hydraulic gradient indicating flow in a northerly direction toward Husky Brook at the M-12 Landfill site. The slug testing on conducted at the M-12 Landfill site indicates conductivity values ranging from 0.0899 to 208 feet per day, with a geometric mean of 4.5 feet per day. As stated previously, the wide-ranging hydraulic conductivity values are considered to be representative of the variability in the fill materials that exist in the investigated areas of the site. The groundwater flow gradient for the site was estimated to be 0.04 feet per foot for the site. Groundwater flow velocity in the vicinity of the site was then estimated at 0.44 feet per day (**Section 4.2.2**).

6.1.2 Model Input Parameters

Visual MODFLOW version 2.7.2 (Waterloo Hydrogeologic, Inc.) was used to simulate the groundwater flow, and MT3D (1996, Papadopolos & Associates, Inc.) was used to simulate the movement of the contaminants over time. Surfer for Windows Version 6 (Golden Software, Inc.) was used to create the initial groundwater elevation map used in MODFLOW, as well as the map of the ground surface that was used in the simulation. The input parameters for the groundwater model are presented in **Table 6-1**.

Physical Boundaries and Grid

Figure 6-2 presents the model grid for the M-12 Landfill site with the topographic contours shown as brown lines, areas of zero recharge highlighted in yellow, the Husky Brook highlighted as blue (groundwater boundary condition of 0 ft amsl), and the Fort Monmouth Base Map in purple. The Fort Monmouth Base Map was used to determine the locations of the paved areas and the Husky Brook.

The model area was 3,900 feet (West to East) by 2,400 feet (South to North). This area was divided into a grid with 211 columns and 135 rows. A majority of the grid cells are 20 by 20 feet, and the grid size is reduced to 10 by 10 feet in the vicinity of wells M12MW16 and M12MW22.

The ground surface elevations were obtained from the Fort Monmouth topographic survey map, and the surface water at the site was assumed to be at an elevation of 0 ft amsl. The ground surface was obtained using Golden Software Surfer.

The groundwater recharge was estimated to be 13.28 inches, as discussed in **Section 6.1.1**. The paved area south of the M-12 Landfill site was assigned zero recharge because precipitation that falls on the paved area enters the Husky Brook through drainage pipes without contributing to groundwater recharge (i.e., surface runoff or stormwater discharge).

The grid cells that are located within Husky Brook were designated as a river and assigned the boundary condition of 0 ft amsl for the groundwater head. In addition, this boundary condition was assigned to the small stream that enters Husky Brook in the center of the M-12 area, the Husky Brook Lake at the southwest corner of the model area, and the buried portion of Husky Brook that connects to the Husky Brook Lake.

The porosity and specific yield of 0.4 and 0.2, respectively, were taken from Heath (USGS, 1989). The bulk density of 45 kg/ft^3 was derived from the porosity (0.4), and a typical soil particle density of 2.65 g/ml (Brady and Weil 1996).

Groundwater Flow Parameters

The model area for the M-12 Landfill site was divided into five layers, which relate to three published hydrogeologic units and one layer of fill. **Figure 6-3** presents a cross section of the model area showing these layers. Each color on this figure represents a different hydrogeologic unit and a different hydraulic conductivity. Conductivity values for the lower four layers were taken to be the geometric mean of conductivity values obtained from Martin (1998). The thicknesses of the lower four layers correspond to the thicknesses of geologic formations (as presented in Zapecza, 1990). The five model layers are discussed below:

- The top layer, identified as Layer 1, is five feet thick, and corresponds to fill material. This thickness was estimated from the cross section through the M-12 Landfill site (**Figure 4-2**) and the boring logs of wells at the M-12 Landfill site (**Appendix C**). Layer 1 was assigned a hydraulic conductivity of 4.4 feet per day, which is the geometric mean of the conductivity values obtained from slug tests (described in **Sections 3.4 and 4.2.2**).
- Layers 2 and 3 both correspond to the Navesink-Hornerstown Confining Unit. This confining unit was divided into two layers to identify potential contamination within 20 feet of the ground surface. Layer 2 was 15 feet thick and Layer 3 was 110 feet thick. Both Layers 2 and 3 were assigned a hydraulic conductivity of 0.12 feet per day.
- Layer 4, which corresponds to the Wenonah-Mount Laurel Aquifer, was assigned a thickness of 75 feet and a hydraulic conductivity of 15.96 feet per day.

- The bottom layer, Layer 5, corresponds to the Marshalltown-Wenonah Confining Unit and was assigned the thickness of 10 feet. The hydraulic conductivity of 0.00018 feet per day was assigned to this lowermost layer.

Contaminant Transport Inputs: Initial Concentrations

The physical and chemical parameters that affect contaminant transport were set up for the identified COCs (arsenic and lead). These parameters include initial concentrations of the COCs, dispersivity, bulk density, sorption type and sorption coefficients. The initial concentrations of lead and arsenic are portrayed in **Figure 6-4**.

Arsenic was detected above the NJDEP criteria of 8 ug/L in two of the 11 monitoring wells, M12MW16 and M12MW22 (see **Section 5.1**) during 16 of 17 separate quarterly rounds and both low-flow rounds (i.e., Low-flow #1 and Low-flow #2) of sampling. To determine the initial concentrations of arsenic at each of these wells, the arsenic concentrations determined during the groundwater monitoring were arithmetically averaged. The average concentrations of arsenic detected in the groundwater samples collected from M12MW16 and M12MW22 are 17.5 and 28.8 ug/L, respectively. Since arsenic was not detected in Round 16 in well M12MW22, the MDL of 8.0 ug/L (**Appendix D**) was used in place of "ND" for calculating the average detection of 28.8 ug/L in that well. These average concentrations for arsenic were assigned to grid cells within approximately 50 feet of the appropriate wells to simulate contaminant plumes. The average arsenic concentrations were applied only to the top two layers, the shallow portion of the unconfined aquifer. Grid cells that were further than 50 feet from wells M12MW16 and M12MW22, and all of Layers 3, 4, and 5, were assigned initial concentrations of 0 ug/L.

Lead was detected in eight of the 11 monitoring wells at concentrations exceeding the NJDEP criteria of 10 ug/L during six of 19 quarterly rounds and both low-flow rounds (i.e., Low-flow #1 and Low-flow #2) of sampling. However, in six of the seven wells, lead exceeded the NJDEP criteria in just one of the 19 rounds of groundwater samples. The one-time detections of lead in these six wells are considered unrepresentative of the lead concentrations and were not factored into the model input parameters. Only the concentrations of lead at well M12MW21, where lead was detected in eight of 17 separate rounds of groundwater collected, were used to derive input parameters. Similar to the initial concentrations for arsenic (discussed above), the initial lead concentration within approximately 50 feet of M12MW21 was assigned 29.9 ug/L, which was the average concentration at this well. For samples in which lead was not detected ("ND" on **Table 5.1**), one half the MDL was used for the initial lead concentration. Because the lead detections were more consistent in M12MW21, it is conservative to assume that lead actually existed each sample but below the MDL, so using a zero concentration for this monitoring well location was not appropriate. The MDL for lead was 2.0 ug/L in each of the sample rounds (**Appendix D**), so 1 ug/L was used in place of ND in Rounds 12, 13 and Low-flow #2. Grid cells that were further than 50 feet from well M12MW21, and all of Layers 3, 4, and 5, were assigned initial concentrations of 0 ug/L.

Contaminant Transport Inputs: Aquifer Characteristics

The contaminant transport simulation incorporated the sorption of the COCs to the solid soil particles. The sorption coefficient, K_d, represents the fraction of a particular substance that is "sorbed" to the soil (absorption and/or adsorption) versus that fraction dissolved in the groundwater. The linear isotherm portrayed in the following equation describes the simplest relationship involving sorption:

$$S = K_d C$$

where S represents the sorbed fraction and C represents the dissolved concentration, and the sorption coefficient, K_d, is a constant that does not vary with the dissolved concentration. The ratio of the groundwater velocity to the velocity of a dissolved substance is called the "retardation factor," or R_d. The retardation factor can be calculated using the following equation:

$$R_d = 1 + (\rho_d / \alpha) * (K_d)$$

where R_d is the retardation factor, ρ_d is the bulk density of the soil, α is the porosity, and K_d is the sorption coefficient (Domenico and Schwarts, 1998).

The contaminant transport simulation was conducted using a linear isotherm and K_d values from the USEPA (1996). The K_d values used in the arsenic and lead simulations were 1.02 and 31.4 ft^3/kg, respectively. As shown in **Table 6-2**, and based on the equations and relationships shown above, these sorption coefficients imply retardation factors of 74 and 2,205 for arsenic and lead, respectively.

Dispersion was incorporated in the model to predict the effects of dilution of the COCs. The dispersivity of 24.3 feet was used in the model, which is the geometric mean of the maximum and minimum of 109 dispersivity coefficients worldwide (Gelhar and Others, 1992).

6.1.3 Model Calibration

The model was first run to simulate the groundwater conditions, without the contaminant transport simulation. **Figure 6-5** shows the flow directions and groundwater elevation contours that were predicted by the model. These conditions represent steady-state, which was achieved by running the model until the head change variation was less than 0.01 feet between iterations. **Figure 6-6** presents a comparison of the groundwater elevations simulated in the model ("Calculated Heads") and field measurements ("Observed Heads") conducted on February 6, 2001 (see **Table 3-4** for groundwater elevation data). The model calibration results shown in **Figures 6-5 and 6-6** provide evidence that the model accurately predicts groundwater flow conditions at the site and that the output (predictions) of the model match closely with field measurements.

6.1.4 Model Results

The migration of arsenic and lead in groundwater was simulated using the same grid setup and input parameters, but differing initial concentrations and sorption coefficients. The estimated times to achieve compliance with NJDEP groundwater standards are shown in **Table 6-2**.

Arsenic

After the groundwater flow was calibrated, the transport simulation for arsenic was run for 10,000 simulated days (~27.4 years). The model was run for this lengthy period to allow for prediction of the time required for the arsenic concentration in site groundwater to decrease below the NJDEP criteria. **Figures 6-7a and 6-7b** show the predicted arsenic distributions in site groundwater plotted as brown contour lines for wells M12MW16 and M12MW22, respectively, at the simulated time of 99 and 150 years, respectively. The arsenic concentrations presented in **Figures 6-7a and 6-7b** represent the first time steps in the model in which the arsenic concentration is entirely below 8 ug/L. The concentrations of arsenic at wells M12MW16 and M12MW22 are plotted against simulation time in **Figure 6-7c**, which confirms the 99 and 150-year predictions. The groundwater modeling results indicate that arsenic migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

Lead

The transport simulation for lead was run for 100,000 days (274 years). The model was run for this lengthy period to allow for prediction of the time required for the lead concentration in site groundwater to decrease below the NJDEP criteria. **Figure 6-8a** shows the predicted lead distribution in site groundwater at 274 years plotted as brown contour lines. Because the lead concentration contours did not fall below the NJDEP criterion of 10 ug/L, projections for the lead concentration at these two wells were made using the observed concentration trends from the model. The slope of the line shown in **Figure 6-8b** was 1.2×10^{-5} ug/L per day, which led to an estimated time to achieve compliance with the NJDEP criterion of 4,500 years. Similar to arsenic, the results of the groundwater modeling indicate that lead migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

6.2 Sensitive Receptor Survey Results

The sensitive receptor survey was completed by performing two tasks: an Offsite Receptor Report and an NJDEP well record search.

6.2.1 Offsite Receptor Report

An Offsite Receptor Report (dated March 12, 2001) was prepared for the M-12 Landfill site by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut.
A copy of the Offsite Receptor Report, identifying sensitive receptors in the area, is provided in **Appendix H**.

The Offsite Receptor Report indicates that there are three schools and one day care center located within one mile of the site. The three schools were located between ¼ and one mile from the M-12 Landfill site, and the day care center is located between ½ mile and one mile from the site.

6.2.2 Well Record Search

A search of the comprehensive well database maintained by the NJDEP Well Permitting and Regulations Section of the Bureau of Water Allocation was performed by VERSAR to identify groundwater wells that may be potentially affected by the M-12 Landfill site. The search was performed for a one mile radius surrounding the central point of the M-12 Landfill site.

The well records obtained during the Well Search are provided in **Appendix I** and are summarized in **Table 6-3**. The wells designated for domestic or irrigation uses are shown in **Figure 6-9**. There were four domestic wells identified by records within 1,000 feet of the M-12 Landfill site, though actual water use and physical presence were not verified. These include:

1. NJDEP Permit #2913691
   Original Owner: Redacted - Privacy Act
   Permit Date: 12/23/53
   Location: N40°18'39" W74°02'40"
   Depth of Well: 150 ft.
   Approximate Distance from Site: 700 ft. (up-gradient)

2. NJDEP Permit #2904782
   Original Owner: Redacted - Privacy Act
   Permit Date: 8/5/65
   Location: N40°18'39" W74°02'40"
   Depth of Well: 50 ft.
   Approximate Distance from Site: 700 ft. (up-gradient).

3. NJDEP Permit #2905673
   Original Owner: P.V.C. Container Corp.
   Permit Date: 1/22/69
   Location: N40°18'39" W74°02'26"
   Depth of Well: 100 ft.
   Approximate Distance from Site: 400 ft. (up-gradient).

4. NJDEP Permit #2908438
   Original Owner: Redacted - Privacy Act
   Permit Date: 8/3/76
   Location: N40°18'53" W74°02'00"
   Depth of Well: 60 ft.

Approximate Distance from Site: 800 ft. (downstream).

Using the latitude and longitude found in the Well Search for each well, a visual search was conducted by DPW personnel using a Global Positioning System (GPS). No evidence of any of the wells was observed, indicating that the above wells were never installed on Fort Monmouth property.

Due to the absence of domestic or irrigation wells near the M-12 Landfill site and the significant distance of the M-12 Landfill site from any of the potential sensitive receptors, as well as the quarterly monitoring of Husky Brook immediately adjacent to the impacted area, the concern for sensitive receptors is minimal. Furthermore, based on the MODFLOW model predictions, the lead and arsenic will not migrate beyond the boundaries of the M-12 Landfill site, and would seep into Husky Brook before reaching any identified receptor. Therefore, no sensitive receptors are likely to be impacted by the presence of lead and arsenic in the groundwater beneath the M-12 Landfill site.

6.3 Aquifer Classification

Upon review of the *NJDEP Groundwater Quality Standards* (NJAC 7:9-6), January 7, 1993, the M-12 Landfill site is found to be underlain by a Class III-A aquifer. The primary designated use for Class III-A ground water is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable uses. For an area to be classified as a Class III-A aquifer, the groundwater must meet the following characteristics:

- Class III-A ground water includes portions of the saturated zones (that meet the criteria below) of the Woodbury Formation, Merchantville Formation, Marshalltown Formation, Navesink Formation, Hornerstown Formation, aquitard formations of the Potomac-Raritan-Magothy aquifer system and the Kirkwood aquifer system, portions of the glacial moraine and glacial lake deposits, and other geologic units having the characteristics of an aquitard. Class III-A areas have the following characteristics (NJAC 7:9-6.5):
- The average thickness of a Class III-A aquifer must be at least 50 feet
- Typical hydraulic conductivity of a Class III-A aquifer is approximately 0.1 ft/day or less
- The areal extent defined as Class III-A must be at least 100 acres.

The shallow aquifer at Fort Monmouth meets each of the four criteria listed above. These criteria are discussed below.

- As presented in **Figure 6-10**, Fort Monmouth is located within the outcrop area of the "Navesink-Hornerstown Confining Unit." The Navesink and Hornerstown Formations are part of the Composite Confining Unit (Martin, 1998), which also includes the Red Bank Sand, Tinton Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation (see **Section 2.4.2**).

- **Figure 6-10** also illustrates the thickness of the Hornerstown-Navesink Confining Unit, which in the vicinity of Fort Monmouth, is approximately 125 feet.
- Published hydraulic conductivities (Martin, 1998) for the Navesink-Hornerstown Confining Unit shown in **Table 6-1** yield a geometric mean of 0.12 feet per day, which was the conductivity used in the MODFLOW Model (**Section 6.1.2**) which is consistent with an aquitard.
- The area of Fort Monmouth is greater than 100 acres.

6.4 Contaminant Migration Summary

Arsenic and lead were identified as COCs at the M-12 Landfill site using the NJDEP GWQS for Class II-A aquifers. The Class II-A criteria were used for comparison with site-specific data obtained from the various sampling rounds because the Ground Water Quality Standards (NJAC 7:9-6.7e) state that the groundwater quality criteria to be used for Class III-A aquifers are the most stringent criteria associated with vertically or horizontally adjacent groundwaters that are not Class III-A.

Groundwater modeling and a sensitive receptor survey were conducted to determine whether groundwater from the M-12 Landfill site could impact surface water, off-site domestic wells, and the subsurface groundwater aquifers. The groundwater modeling shows the impact of arsenic and lead migration in groundwater will be minimal due to low hydraulic conductivity and sorption of the metals to the soil (retardation). The results of the groundwater modeling (**Section 6.1**) and sensitive receptor survey (**Section 6.2**) are summarized below:

- The closest surface water at the M-12 Landfill site is the Husky Brook. Due to the low concentrations of the identified COCs at the site, and the very slow migration rates for the COCs in the groundwater, there is little potential for significant COC impact by migration (seepage) into the stream.
- The closest aquifer, the Wenonah-Mount Laurel Aquifer, is located approximately 125 ft bgs. The results of the groundwater modeling indicate that this aquifer is too deep to be affected by the COCs near the ground surface, and that the vertical exchange of groundwater between the aquifers (leakance) is minimal.
- The risk of impacts to human health or to domestic animals associated with the ingestion of the COC is negligible. It is unlikely that the wells in the vicinity of the site are used for consumptive purposes due to poor overall water quality and low well yields. The potential migration of the COCs to these well in any reasonable time period is not possible.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Geologic publications show that the M-12 Landfill site is located within an aquitard (the Navesink-Hornerstown Confining Unit). The low hydraulic conductivity of the aquitard and the thickness of the aquitard at the site conform to the requirements of a Class III-A aquifer, as specified in the NJDEP Groundwater Quality Standards (NJAC 7:9-6, January 7, 1993).

The analytical results for the groundwater samples collected between June 1997 and January 2001 indicate that concentrations of arsenic and lead exceed the GWQC at the M-12 Landfill site. The Class II-A criteria were used for comparison with site-specific data obtained from the various sampling rounds because the Ground Water Quality Standards (NJAC 7:9-6.7e) state that the groundwater quality criteria to be used for Class III-A aquifers are the most stringent criteria associated with vertically or horizontally adjacent groundwaters that are not Class III-A.

The analytical results for the supplemental soil samples collected indicate the presence of arsenic and lead at the M-12 Landfill site. However, lead was not detected above the RDCSCC at any soil boring sample location. Arsenic was detected at 10 of 15 soil boring locations at concentrations greater than the RDCSCC, but only a single location indicated an arsenic concentration that exceeds the RDCSCC by more than one order of magnitude (M22-F). Therefore, the arsenic is likely attributable to the native soil characteristics or a non-point source distributed throughout the M-12 Landfill site. Because the constituents are not found to a significant degree, it is unlikely that either soil constituent is adversely affecting the quality of shallow groundwater at the site.

In addition, due to the low concentrations of COCs in groundwater at the M-12 Landfill site and the extremely slow migration rates for the COCs in the site groundwater, there is little potential for significant COC impact by migration into the adjacent Husky Brook. The Wenonah Mount Laurel aquifer, which is approximately 125 feet bgs, is too deep to be affected by the COCs near the ground surface. In addition, the sensitive receptor survey indicates that there are no domestic or irrigation wells that are close enough to the M-12 Landfill site to be adversely impacted by COC migration. Therefore, further groundwater monitoring at the M-12 Landfill site is not required, and No Further Action is recommended with regard to groundwater remedial alternatives.

To evaluate surface water quality and ensure that groundwater seepage from the M-12 Landfill site is not adversely impacting the surface water, surface water samples should be collected and analyzed for arsenic and lead at locations near the M-12 Landfill site. The long-term monitoring program at Fort Monmouth includes quarterly surface water sampling at strategic locations; additional or alternate locations may be selected to better monitor surface water quality adjacent to the M-12 Landfill site.

8.0 REFERENCES

Domenico, P.A. and F.W. Schwartz, 1998, *Physical and Chemical Hydrogeology, 2nd ed.* New York, John Wiley and Sons, New York.

Gelhar, L. W., C. Welty, and K. R. Reyfeldt, 1992, "A Critical Review of Field-Scale Dispersion in Aquifers," in *Water Resources Research* v. 28, pp. 1955-1974.

Heath, R.C., 1989, *Basic ground-water hydrology*, U.S. Geological Survey Water-Supply Paper 2220, 5th printing, U.S. Government Printing Office, Washington, DC.

Jablonski, L.A., 1968, *Groundwater Resources of Monmouth County, New Jersey. USGS Special Report 23*. USGS, Washington, DC.

Martin, M., 1998, *Groundwater Flow in the New Jersey Coastal Plain*. USGS Professional Paper 1404-H.

Meisler, H., J.A. Miller, L.L. Knobel, and R.L. Wait, 1988, "Region 22, Atlantic and Eastern Gulf Coastal Plan," in *Hydrogeology: The Geology of North America*, W. Back, J.S. Rosenhein, and P.R. Seaber, editors. Vol. 0-2. pp. 209-218.

Minard, J.P., 1969, *Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey*. U.S. Government Printing Office, Washington, DC.

New Jersey Geological Survey, 1994, *Geologic Map of New Jersey*.

U.S. Army Garrison, Fort Monmouth, Directorate of Public Works (DPW), December 1997, *Fort Monmouth Standard Sampling Operating Procedure*, New Jersey.

U.S. Army Garrison, Fort Monmouth, Directorate of Public Works (DPW), Nad-83 Base Map of Fort Monmouth, New Jersey.

U.S. Army Garrison, Fort Monmouth, Directorate of Public Works (DPW), Nad-83 Topographic Survey of Fort Monmouth, New Jersey.

USDA Soil Conservation Service, 1989, *Soil Survey of Monmouth County, New Jersey.*

U.S. Geological Survey, 1981, *Long Branch Quadrangle Map*.

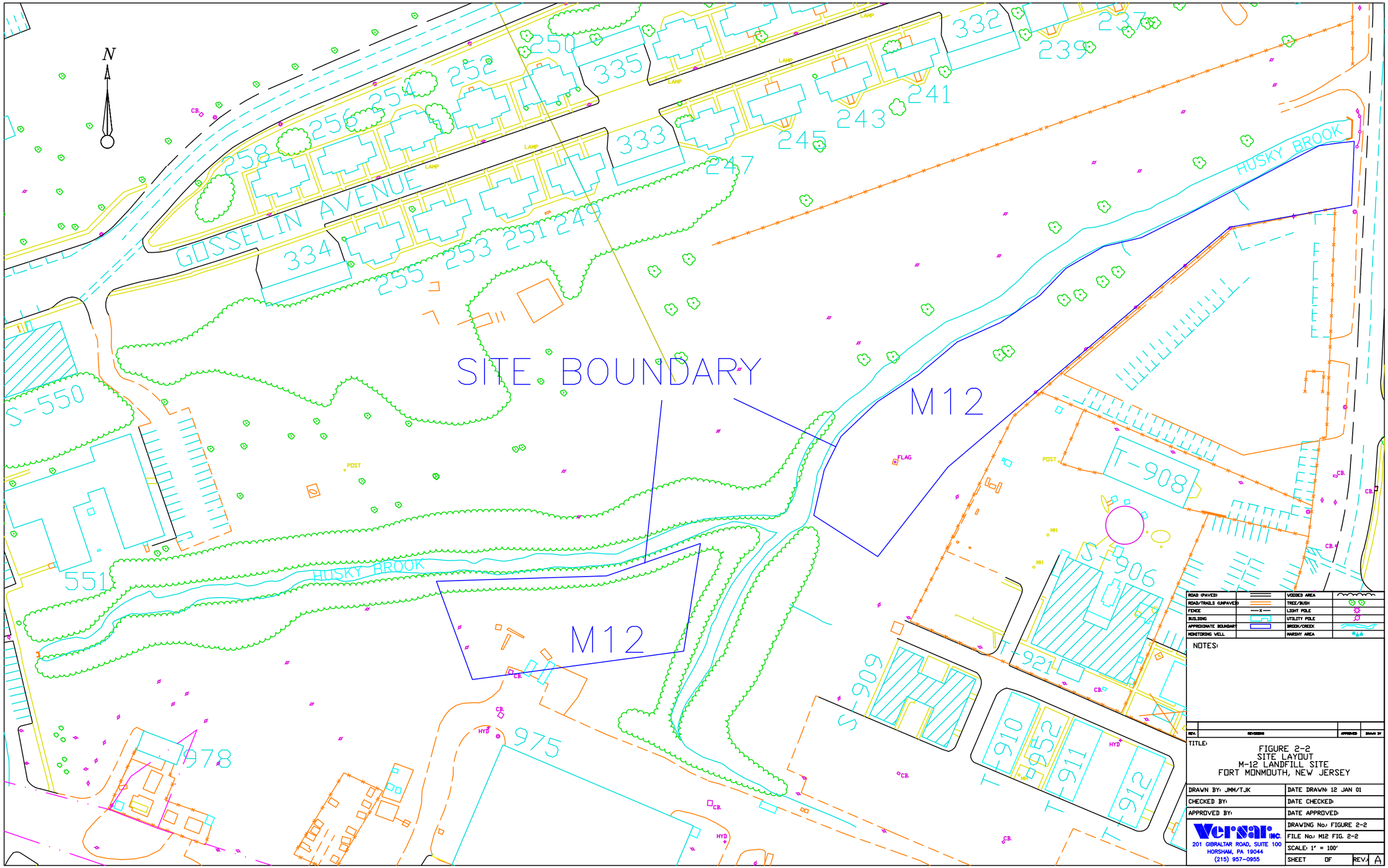
VERSAR Inc. (VERSAR), 8 September, 2000, *Indefinite Quantity Indefinite Delivery Contract No. DACA51-00-D-0004, Fort Monmouth, New Jersey, Contract Support Services Relating to the Investigation of Groundwater and Surface Water at Three Restoration Sites*.

Weston (Roy F. Weston, Inc.), December 1995, Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey.

Zapecza, O., 1989, *Hydrogeologic Framework of the New Jersey Coastal Plain*. U.S. Geological Survey Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURES

THIS
PAGE
INTENTIONALLY
REMOVED



ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
MONITORING WELL		MARSHY AREA	

NOTES:

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:

FIGURE 2-2
SITE LAYOUT
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JMM/TJK	DATE DRAWN: 12 JAN 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 2-2
	FILE No.: M12 FIG. 2-2
	SCALE: 1" = 100'
	SHEET OF REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

Geologic Map of New Jersey

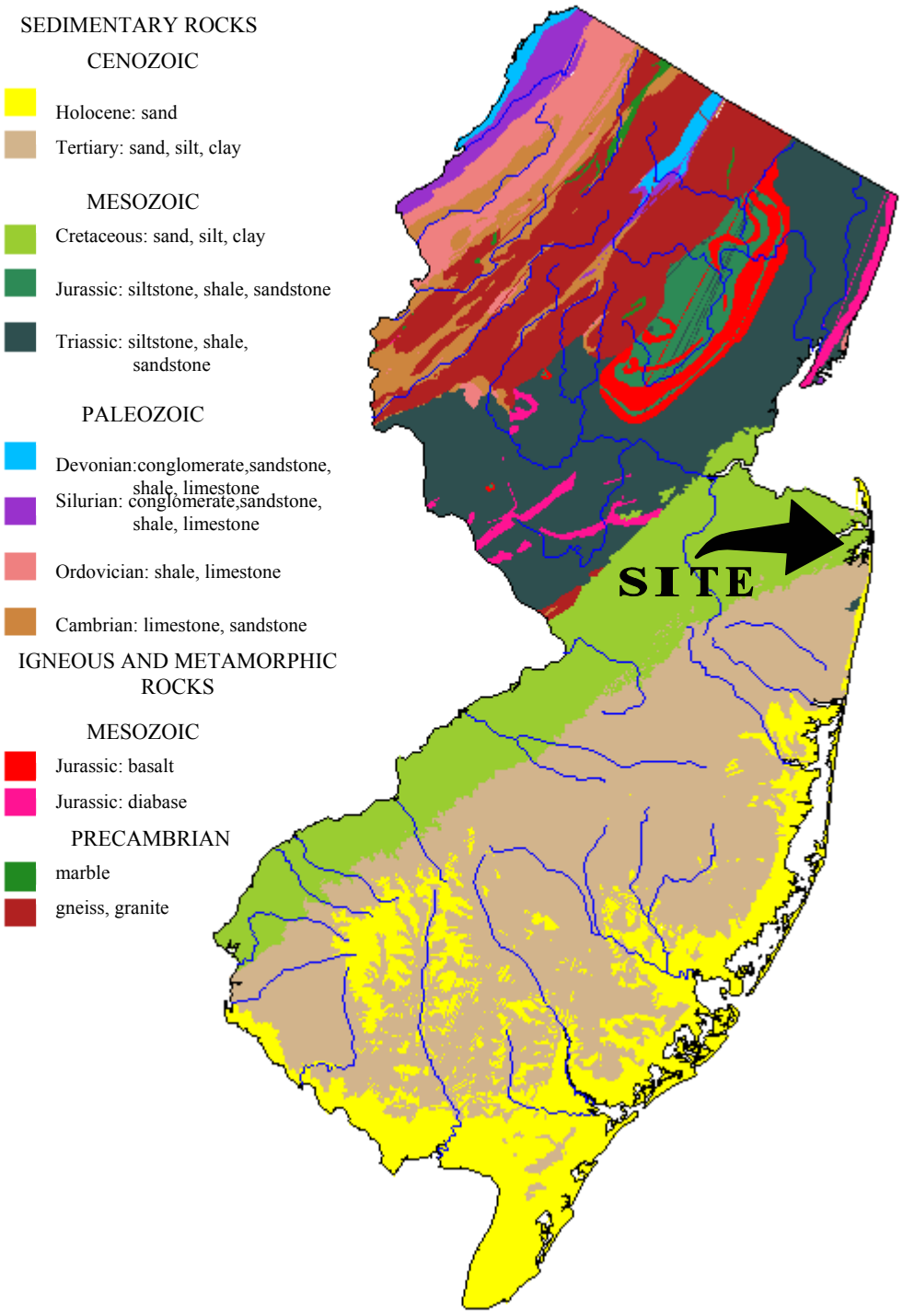
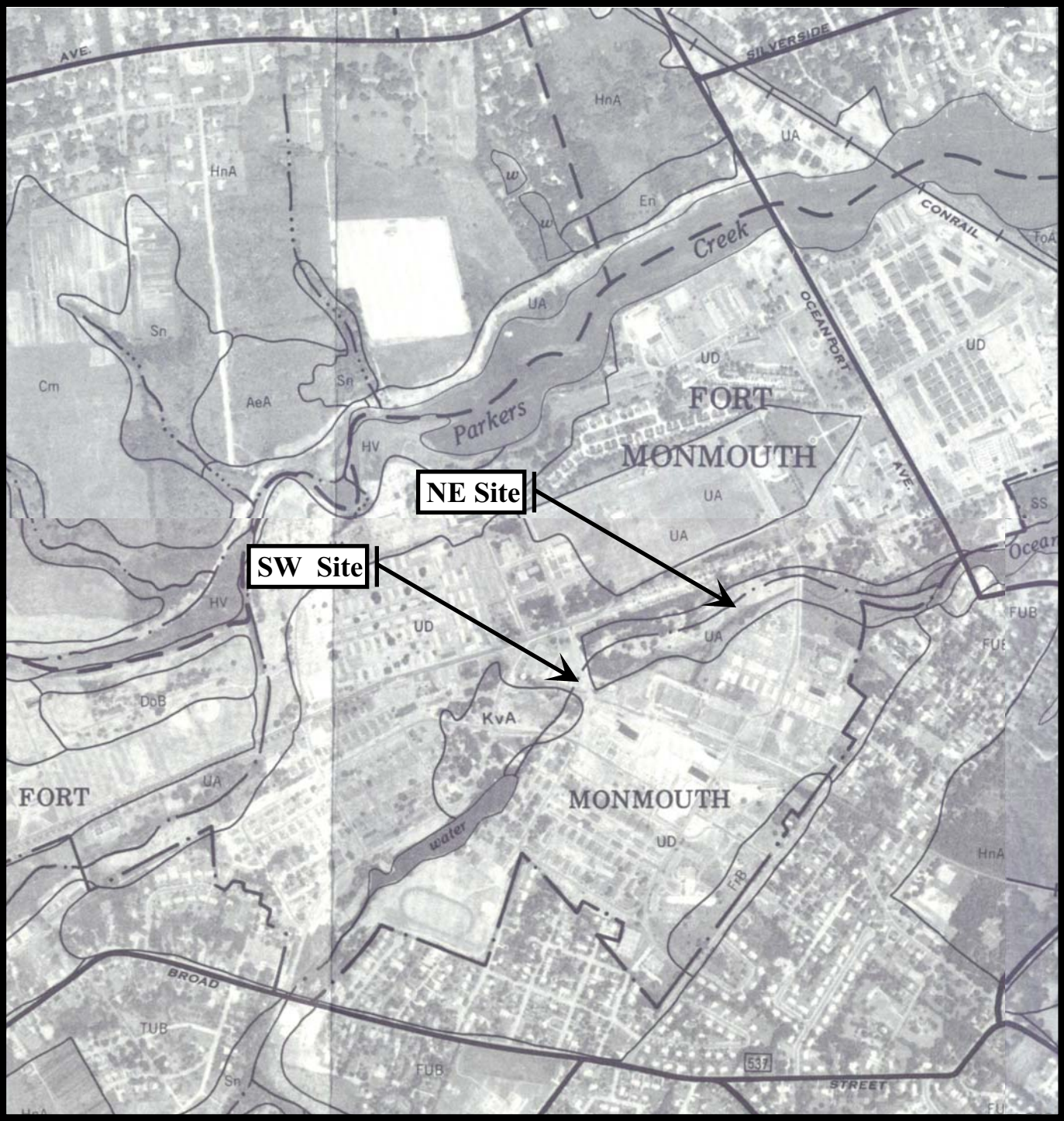


FIGURE 2-3
Geological Map of New Jersey
M-12 Landfill Site
Fort Monmouth, New Jersey

Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, Pennsylvania, 19007
(215)-788-7844



Fort Monmouth
M-12 Landfill Site

FIGURE 2-4

Soil Map of Monmouth County, New Jersey

US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

Versar INC.

N

GOSSELIN AVENUE

HUSKY BROOK

M12

M12–MW16

M12–MW17

M12–MW18

M12–MW19

M12–MW20

M12–MW21

M12–MW22

M12–MW23

M12–MW24

M12–MW25

M12–MW26

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
MONITORING WELL		MARSHY AREA	

NOTES:

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:
FIGURE 3-1
MONITORING WELL LOCATION MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JMM/TJK	DATE DRAWN: 12 JAN 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 3-1
	FILE No.: M12 FIG. 3-1
	SCALE: 1" = 100'
	SHEET OF REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

THIS
PAGE
INTENTIONALLY
REMOVED

N

M-14 LANDFILL

M12-MW18

MW16-G

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-F

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-E

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-D

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-C

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

M12MW16

MW16-H

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-A

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-I

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW16-B

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

M12-MW17

M-12 LANDFILL

FLAG

POST

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

= MONITORING WELL LOCATION

● = GEOPROBE BORING LOCATION

S = SOIL SAMPLE

24-30" (S)
SAMPLE DEPTH — SAMPLE TYPE

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-3A
SOIL SAMPLE LOCATION MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 17 JUL 01
CHECKED BY:	DATE CHECKED: 17 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: M12 FIG.3-3A
	FILE No.: M12 FIG.3-3A
	SCALE: 1" = 30'
	SHEET 1 OF 1 REV.: A

Vet-Sall INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

N

M-14 LANDFILL

551

M12-MW26

M12-MW20

M12-MW25

M12-MW19

M12-MW21

M-12 LANDFILL

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)
48-54" (S)
60-66" (S)

MW22-B

M12MW22

MW22-A

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW22-E

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW22-D

MW22-C

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

MW22-F

0-6" (S)
12-18" (S)
24-30" (S)

0-6" (S)
12-18" (S)
24-30" (S)
36-42" (S)

C.B.

C.B.

HYD

975

978

M12-MW23

M12-MW24

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	— x —	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

= MONITORING WELL LOCATION

= GEOPROBE BORING LOCATION

S = SOIL SAMPLE

24-30" (S)

SAMPLE DEPTH — SAMPLE TYPE

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-3B
SOIL SAMPLE LOCATION MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 17 JUL 01
CHECKED BY:	DATE CHECKED: 17 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: M12 FIG.3-3B
	FILE No.: M12 FIG.3-3B
	SCALE: 1" = 50'
	SHEET OF REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

N

GOSSELIN AVENUE

258 256 254 252 250 335 333 332 239 237

247 245 243 241

334 255 253 251 249

HUSKY BROOK

M12–MW18

M12–MW16

M12–MW17

M12

A'

T-908

S-550

551

HUSKY BROOK

M12–MW26 M12–MW20 M12–MW25 M12–MW19

M12–MW21

M12

M12–MW22

S-906

T-921

S-909

T-910 T-952 T-911 T-912

978 M12–MW23

975 M12–MW24

A

NOTES:

- M-12 LANDFILL
- BUILDING
- ROAD/CURB
- BROOK/CREEK
- MONITORING WELL
- CROSS SECTION LINE

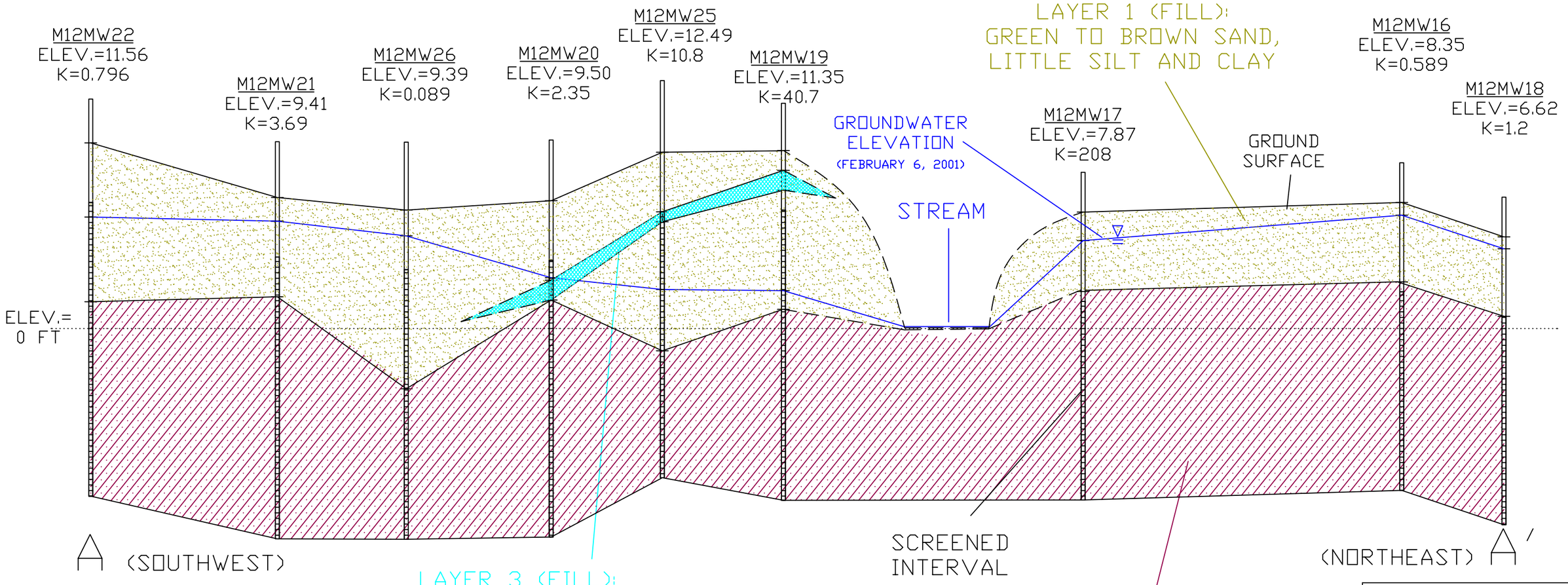
REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:

FIGURE 4-1
CROSS SECTION A TO A' LOCATION MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 15 FEB 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-1
	FILE No.: M12 FIG. 4-1
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



NOTES:

1) CROSS SECTION LINE (A TO A') IS SHOWN ON FIGURE 4-1.

2) VERTICAL SCALE: 1" = 5'.
HORIZONTAL SCALE: 1" = 100'.
VERTICAL EXAGGERATION = 20.

3) ELEV. = ELEVATION OF INNER WELL CASING SURVEY MARK (FEET ABOVE MEAN SEA LEVEL).

4) K = HYDRAULIC CONDUCTIVITY (FEET PER DAY) WAS DETERMINED FROM SLUG TESTS ON FEB. 6-7, 2001.

5) EACH OF THE WELLS HAS A DIAMETER OF 4 INCHES WHICH IS ENLARGED ON THIS DRAWING FOR PRESENTATION.

6) BOUNDARIES ARE DASHED WHERE INFERRED.

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:
FIGURE 4-2
GEOLOGIC CROSS SECTION A TO A'
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 12 FEB 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-2
	FILE No.: M12 FIG. 4-2
	SCALE: 1"=100' (VERT. 1"=5')
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

N

GOSSELIN AVENUE

258 256 254 252 250 335 333 332 247 245 243 241 239 237 334 255 253 251 249

HUSKY BROOK

M12-MW18
3.17

M12-MW16
4.83

M12-MW17
3.89

M12

2

4

6

M12-MW26
3.54

M12-MW20
2.56

M12-MW25
1.59

M12-MW19
1.75

M12-MW21
4.41

M12-MW22
6.31

M12-MW23
4.03

M12-MW24
7.21

S-550

551

978

975

T-908

S-906

S-909

T-921

910

952

911

912

NOTES:

- M-12 LANDFILL
- BUILDING
- ROAD/CURB
- BROOK/CREEK
- MONITORING WELL
- 6.29 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- ~4~ GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:
FIGURE 4-3A
GROUNDWATER ELEVATION CONTOUR MAP
FOR FEBRUARY 25, 2000
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 12 JAN 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-3A
	FILE No.: M12 FIG. 4-3A
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

N

GOSSELIN AVENUE

258 256 254 252 250 335 333 247 245 243 241 332 239 237

334 255 253 251 249

HUSKY BROOK

M12–MW18

2.88

M12–MW16

5.33

M12–MW17

4.36

M12

M12–MW26

3.64

M12–MW20

2.70

M12–MW25

2.09

M12–MW19

2.04

M12–MW21

5.11

M12–MW22

5.41

M12–MW23

4.51

M12–MW24

7.59

2 3 4 5 6

S-550

551

978

975

T-908

S-906

S-909

T-921

910 952 911 912

NOTES:

- M-12 LANDFILL
- BUILDING
- ROAD/CURB
- BROOK/CREEK
- MONITORING WELL
- 6.29 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 4 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:
FIGURE 4-3B
GROUNDWATER ELEVATION CONTOUR MAP
FOR MAY 23, 2000
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 12 JAN 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-3B
	FILE No.: M12 FIG. 4-3B
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

N

GOSSELIN AVENUE

258 256 254 252 250 335 333 247 245 243 241 332 239 237

334 255 253 251 249

HUSKY BROOK

M12-MW18
3.91

M12-MW16
4.73

M12-MW17
4.33

M12-MW26
3.11

M12-MW20
1.87

M12-MW25
1.63

M12-MW19
1.67

M12-MW21
4.54

M12-MW22
4.94

M12-MW23
3.16

M12-MW24
6.64

M12

4

6

2

S-550

551

978

975

T-908

S-906

S-909

T-921

T-910

T-952

T-911

T-912

NOTES:

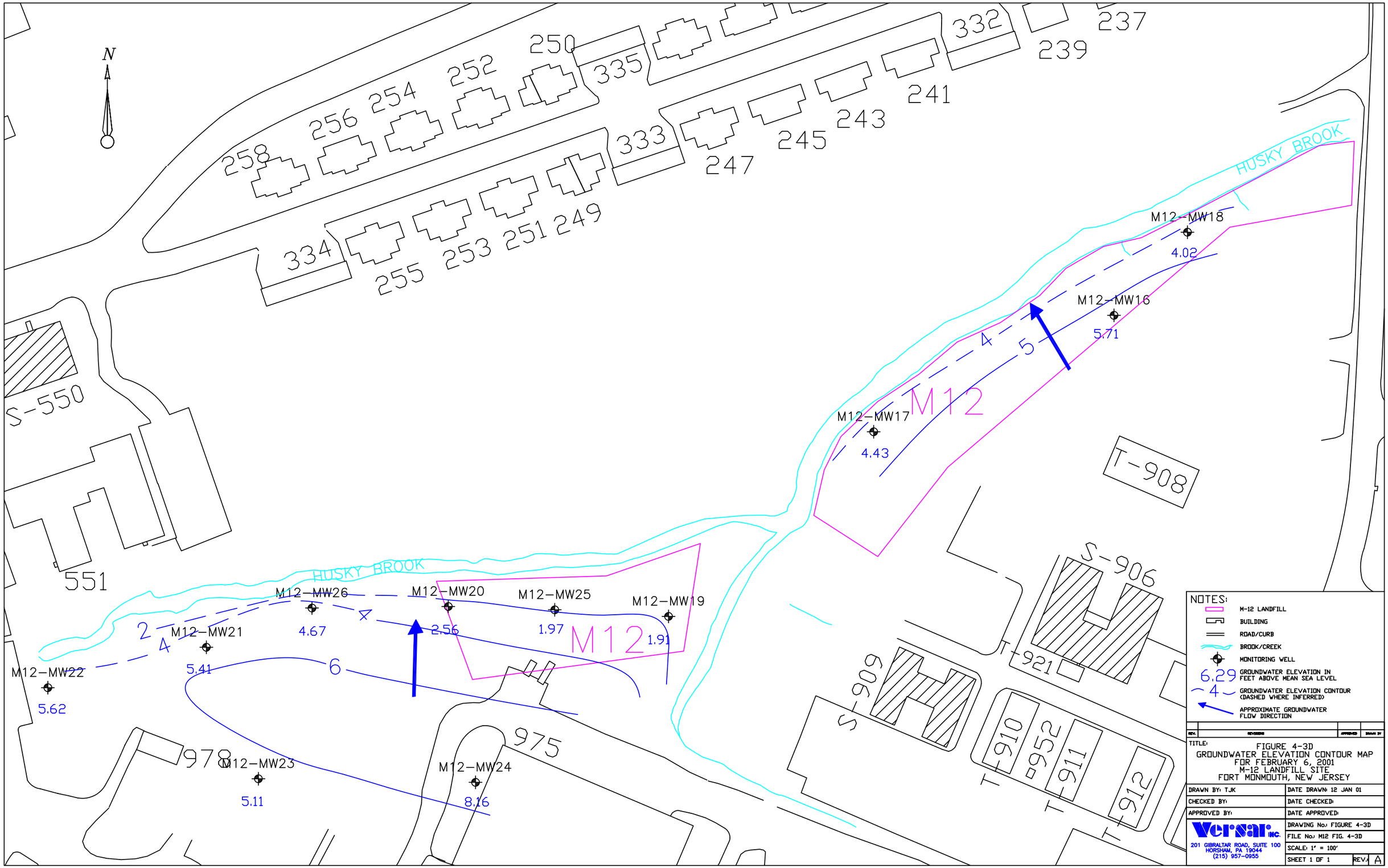
- M-12 LANDFILL
- BUILDING
- ROAD/CURB
- BROOK/CREEK
- MONITORING WELL
- 6.29 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 4 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

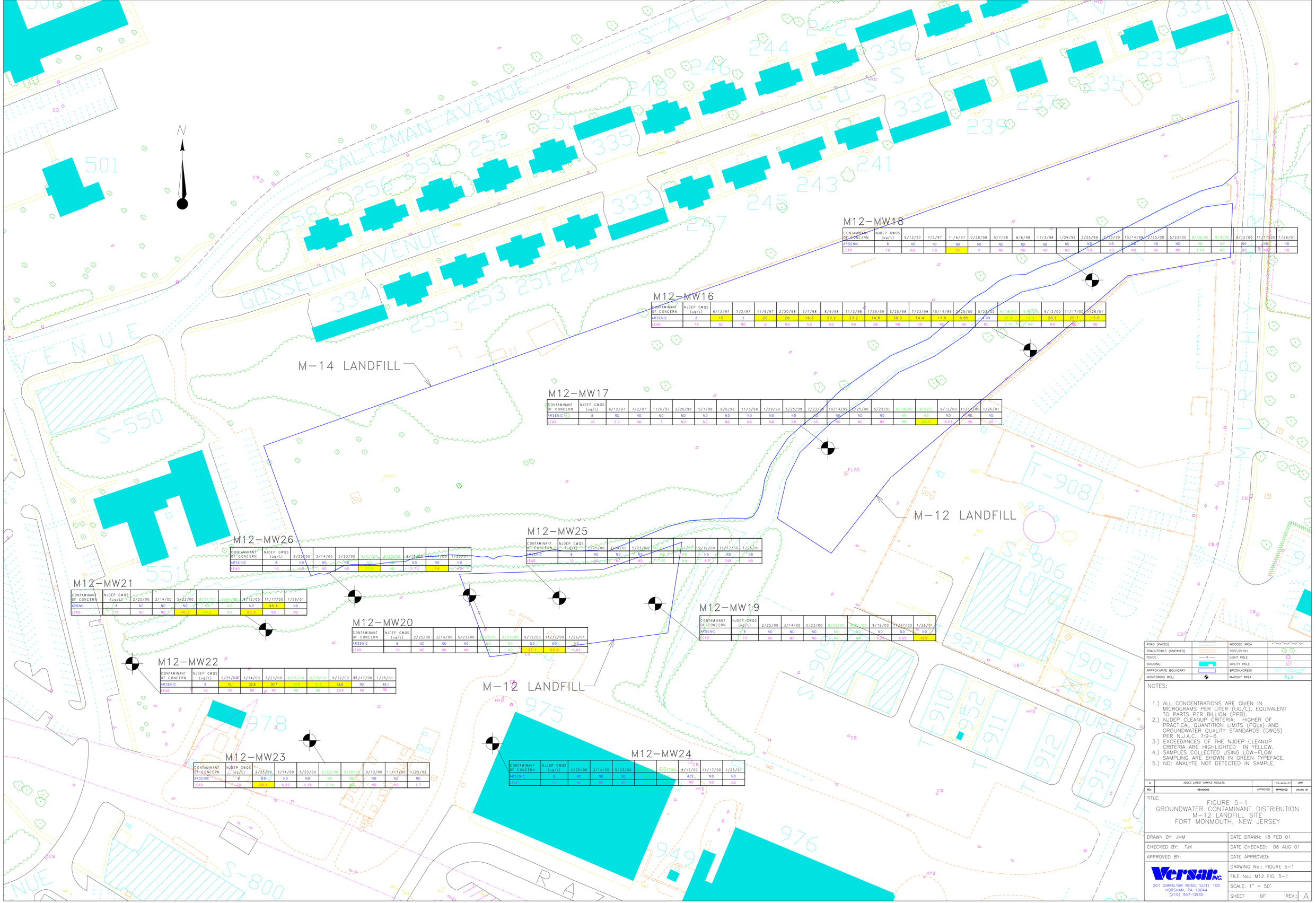
REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:
FIGURE 4-3C
GROUNDWATER ELEVATION CONTOUR MAP
FOR SEPTEMBER 12, 2000
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 12 JAN 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-3C
	FILE No.: M12 FIG. 4-3C
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955


N
258
256
254
252
250
335
333
332
237
239
241
243
245
247
334
255
253
251
249
HUSKY BROOK
M12-MW18
4.02
M12-MW16
5.71
M12-MW17
4.43
M12
4
5
T-908
S-550
551
HUSKY BROOK
M12-MW26
4.67
M12-MW20
2.56
M12-MW25
1.97
M12-MW19
1.91
M12
2
4
M12-MW21
5.41
M12-MW22
5.62
6
S-906
T-921
S-909
T-910
952
T-911
T-912
978
975
M12-MW23
5.11
M12-MW24
8.16
NOTES:
M-12 LANDFILL
BUILDING
ROAD/CURB
BROOK/CREEK
MONITORING WELL
6.29 GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
4 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
APPROXIMATE GROUNDWATER FLOW DIRECTION
REV.
REVISIONS
APPROVED
DRAWN BY
TITLE:
FIGURE 4-3D
GROUNDWATER ELEVATION CONTOUR MAP
FOR FEBRUARY 6, 2001
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY
DRAWN BY: TJK
DATE DRAWN: 12 JAN 01
CHECKED BY:
DATE CHECKED:
APPROVED BY:
DATE APPROVED:
Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955
DRAWING No.: FIGURE 4-3D
FILE No.: M12 FIG. 4-3D
SCALE: 1" = 100'
SHEET 1 OF 1
REV.: A



CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	6/12/97	7/2/97	11/6/97	2/28/98	5/7/98	8/6/98	11/3/98	1/29/99	5/25/99	7/23/99	10/14/99	2/25/00	5/23/00	8/18/00	9/9/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	0.6	ND	15	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.74	ND	ND	ND	ND

M12-MW18

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	6/12/97	7/2/97	11/6/97	2/20/98	5/7/98	8/6/98	11/3/98	1/29/99	5/25/99	7/23/99	10/14/99	2/25/00	5/23/00	8/18/00	9/9/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	10	2	20	26	16.8	20.2	23.2	14.8	30.3	14.4	11.9	8.85	4.99	16.2	18.1	20.1	25.7	15.6
LEAD	10	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.72	ND	ND	ND	ND

M12-MW16

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	6/12/97	7/2/97	11/6/97	2/20/98	5/7/98	8/6/98	11/3/98	1/29/99	5/25/99	7/23/99	10/14/99	2/25/00	5/23/00	8/18/00	9/9/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	0.7	ND	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	80.6	6.41	ND	ND

M12-MW17

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/25/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	38.4	4.29	4.35	2.14	ND	ND	2.60	1.7

M12-MW23

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/25/01
ARSENIC	8	10.1	22.8	30.7	52.9	21.6	54.8	ND	49.1
LEAD	10	ND	ND	ND	ND	ND	28.4	ND	ND

M12-MW22

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/21/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	49.4	ND	ND
LEAD	10	ND	ND	40.2	54.6	ND	43.8	ND	ND

M12-MW21

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	ND	ND	ND	ND	ND	85.1	58.9	64

M12-MW20

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	ND	ND	ND	ND	ND	4.72	ND	ND

M12-MW24

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	ND	ND	ND	ND	ND	4.37	3.69	ND

M12-MW25

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/22/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	ND	ND	ND	70.8	ND	5.75	3.4	ND

M12-MW26

CONTAMINANT OF CONCERN	NJDEP GWQS (ug/L)	2/25/00	3/14/00	5/23/00	8/21/00	9/20/00	9/12/00	11/17/00	1/26/01
ARSENIC	8	ND	ND	ND	ND	ND	ND	ND	ND
LEAD	10	ND	ND	40.2	54.6	ND	43.8	ND	ND

M12-MW21

ROAD (PAVED)	WOODED AREA
ROAD/TRAILS (UNPAVED)	TREE/BUSH
FENCE	LIGHT POLE
BUILDING	UTILITY POLE
APPROXIMATE BOUNDARY	BROOK/CREEK
MONITORING WELL	MARSHY AREA

NOTES:

1.) ALL CONCENTRATIONS ARE GIVEN IN MICROGRAMS PER LITER (UG/L), EQUIVALENT TO PARTS PER BILLION (PPB).
2.) NJDEP CLEANUP CRITERIA: HIGHER OF PRACTICAL QUANTITION LIMITS (PQLs) AND GROUNDWATER QUALITY STANDARDS (GWQS) PER N.J.A.C. 7:9-6.
3.) EXCEEDANCES OF THE NJDEP CLEANUP CRITERIA ARE HIGHLIGHTED IN YELLOW.
4.) SAMPLES COLLECTED USING LOW-FLOW SAMPLING ARE SHOWN IN GREEN TYPEFACE.
5.) ND: ANALYTE NOT DETECTED IN SAMPLE.

REV.	REVISIONS	APPROVED	APPROVED	DRAWN BY
B	ADDED LATEST SAMPLE RESULTS		03-AUG-01	JMM

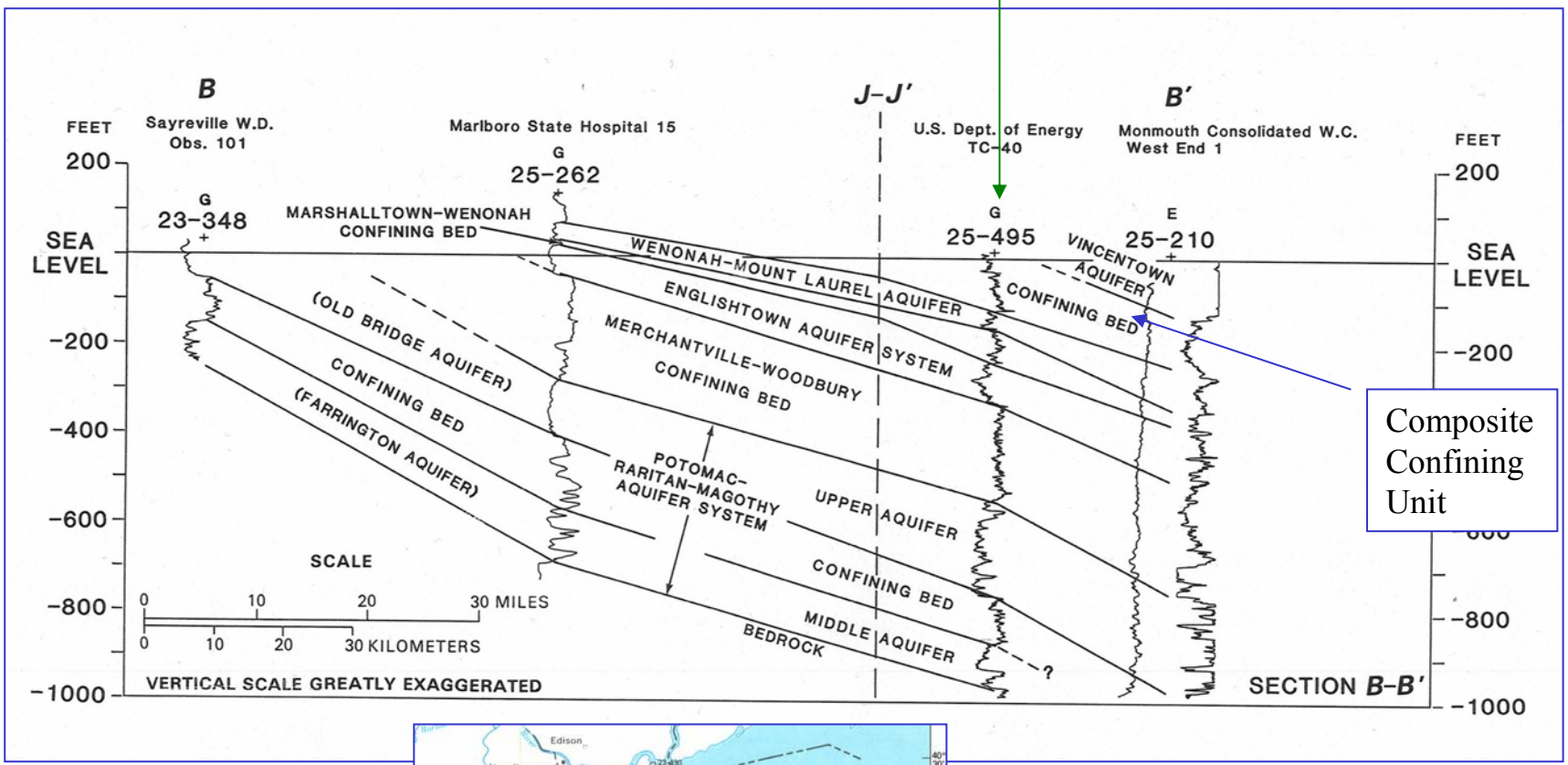
TITLE:

FIGURE 5-1
GROUNDWATER CONTAMINANT DISTRIBUTION
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

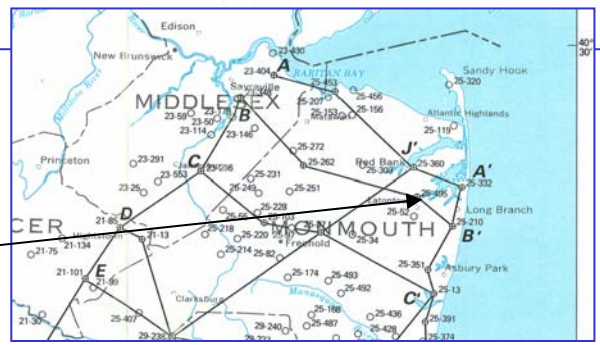
DRAWN BY: JMM	DATE DRAWN: 18 FEB 01
CHECKED BY: TJK	DATE CHECKED: 06 AUG 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 5-1
	FILE No.: M12 FIG. 5-1
	SCALE: 1" = 50'
	SHEET OF REV.: A

Versar, Inc.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

Fort Monmouth



Composite Confining Unit



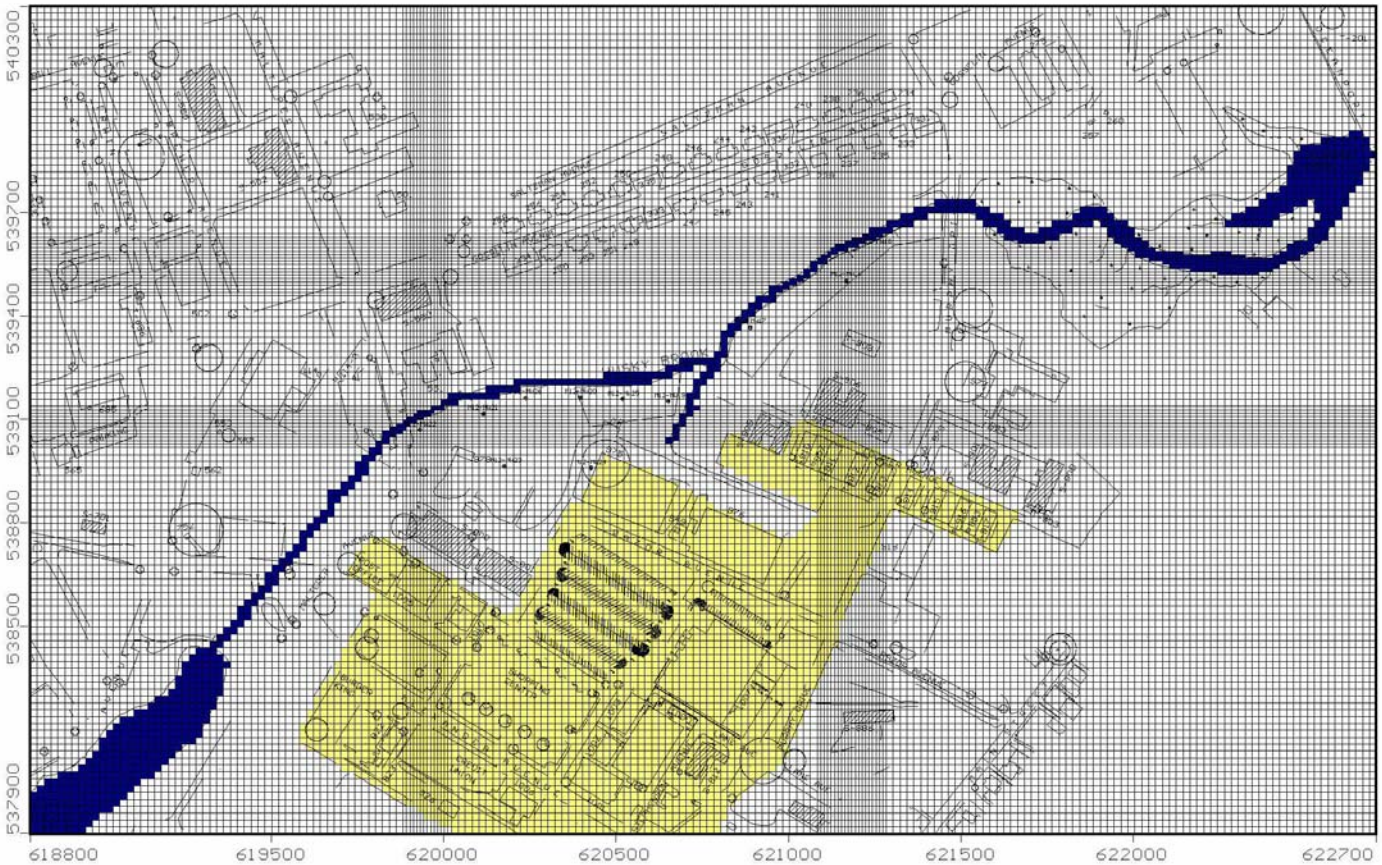
Fort Monmouth

Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 6-1

Geologic Cross-Section B to B'
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

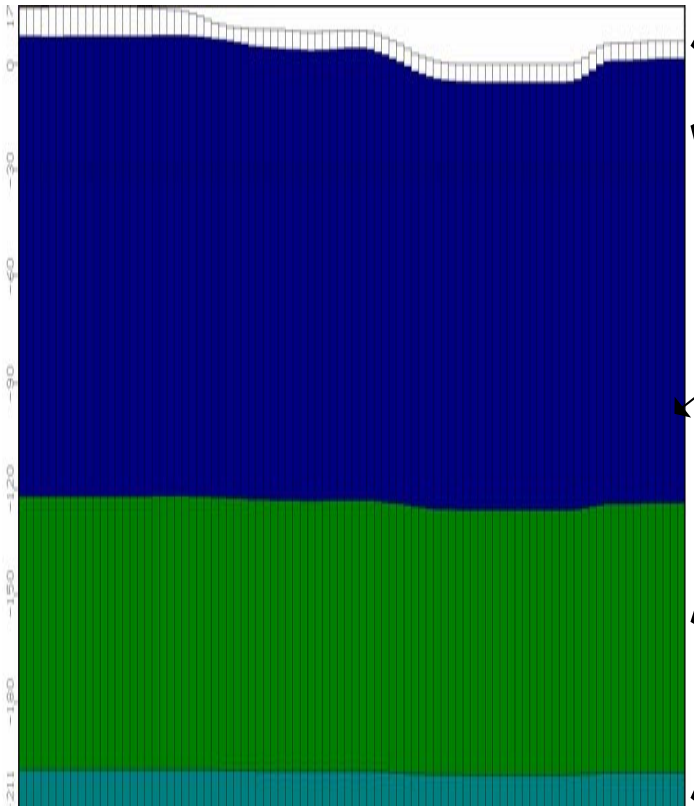


Notes:
1) Grid size is 20’ by 20’ except in vicinity of wells M12MW16 and M12MW22, where the grid size is 10’ x 10’.
2) Yellow represents area with zero recharge.
3) Husky Brook shown in blue, represents river boundary with constant head of zero feet (mean sea level).
4) Coordinates shown represent NAD-83 survey feet.

FIGURE 6-2

Model Boundaries and Grid
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



Layer 1: Fill

Thickness = 5 feet

K = 4.4 ft/day (at M-12 Site)

Layers 2 and 3: Navesink-Hornerstown Confining Unit

Thickness = 125 feet

K = 0.12 ft/day

Layer 4: Wenonah-Mount Laurel Aquifer

Thickness = 75 feet

K = 15.96 ft/day

Layer 5: Marshaltown-Wenonah Confining Unit

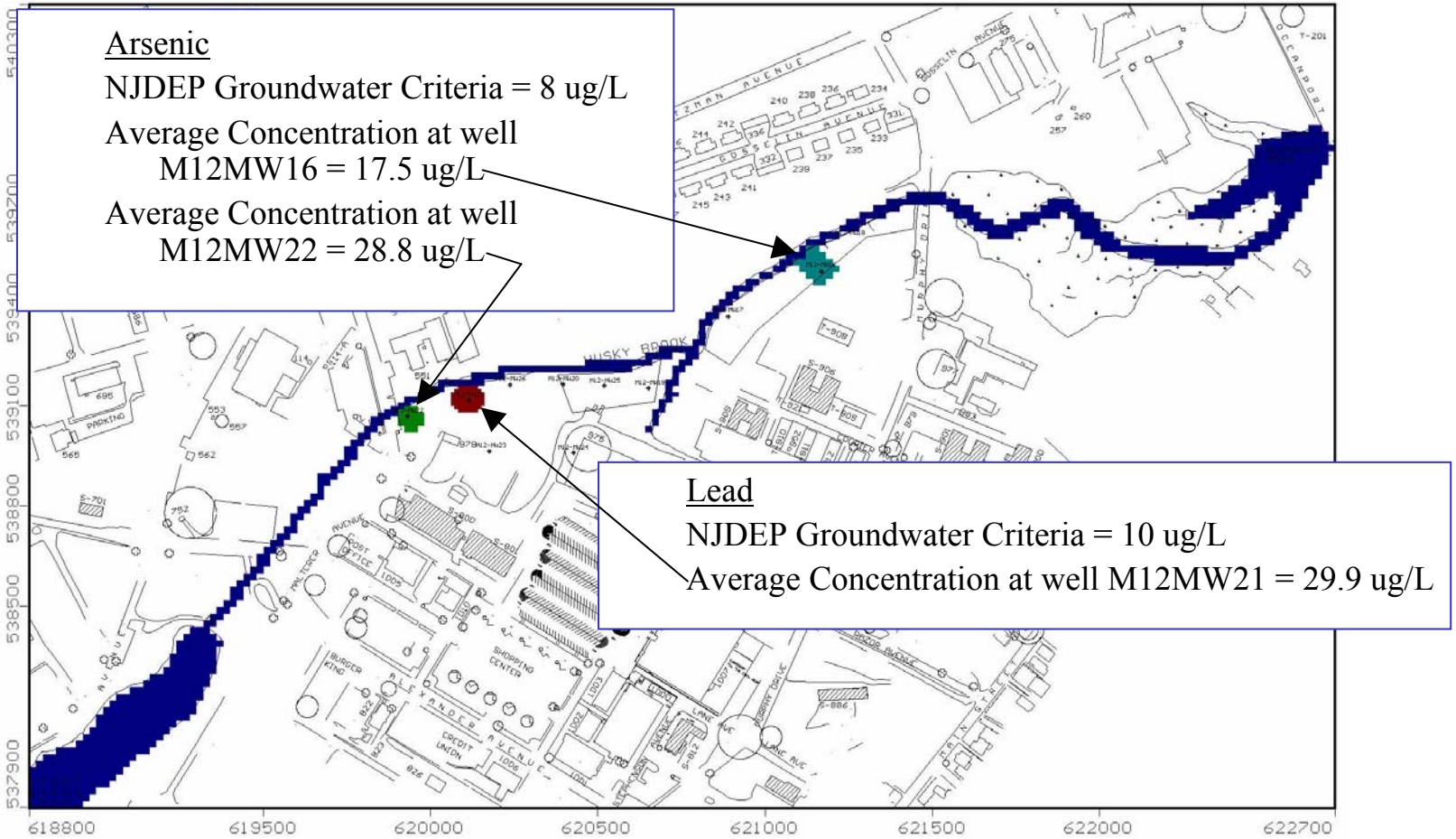
Thickness = 10 feet

K = 0.00018 ft/day

FIGURE 6-3

Cross Section of Model Area
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



Notes:
1) Initial Concentrations based on averaged concentrations from groundwater sampling program. See Table 5-1 for groundwater sampling results.
2) Husky Brook shown in blue, represents river boundary with constant head of zero feet (mean sea level).
3) Coordinates shown represent NAD-83 survey feet.

FIGURE 6-4

Initial Concentrations of Lead and Arsenic M-12 Landfill Site Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

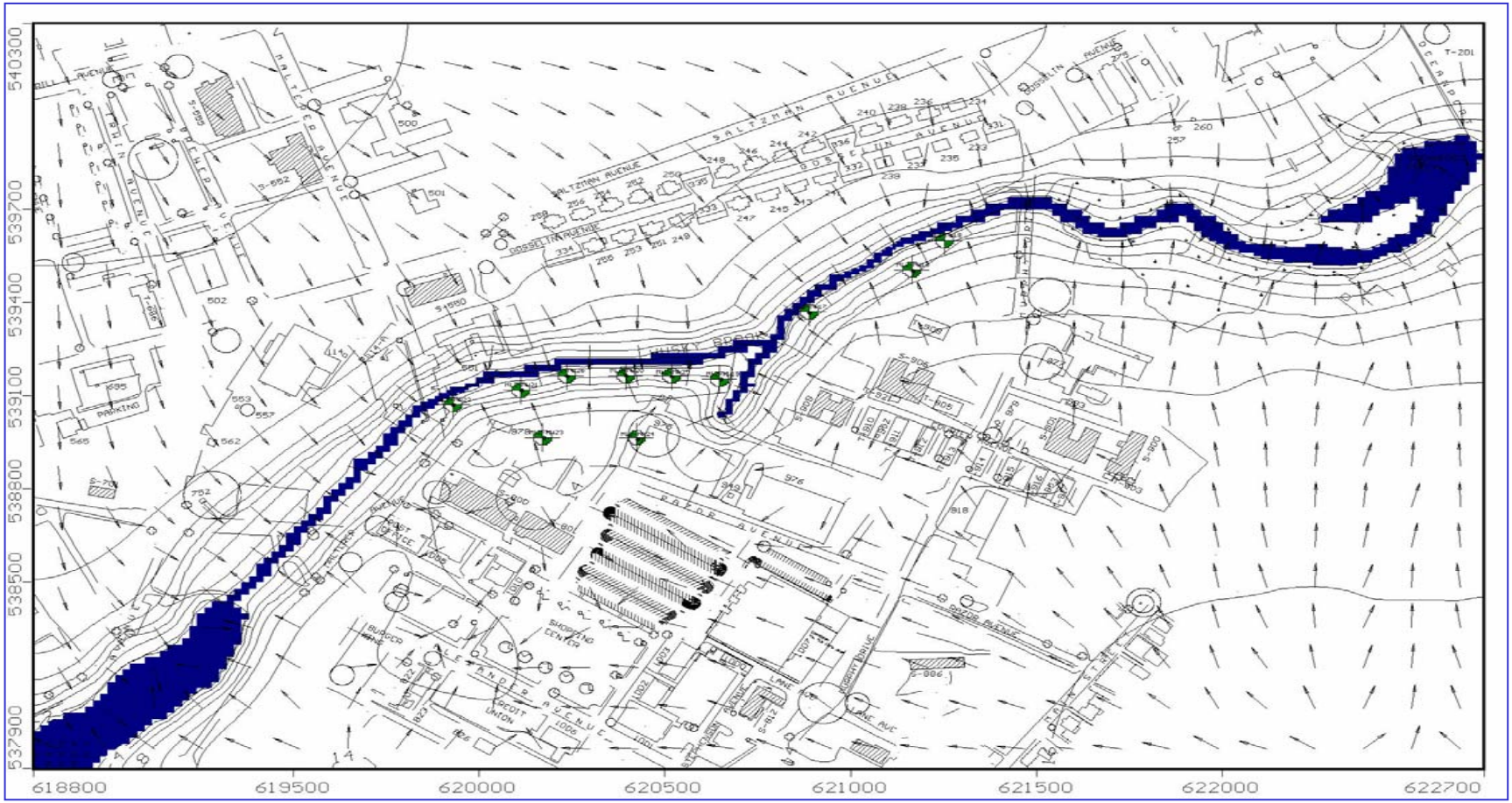


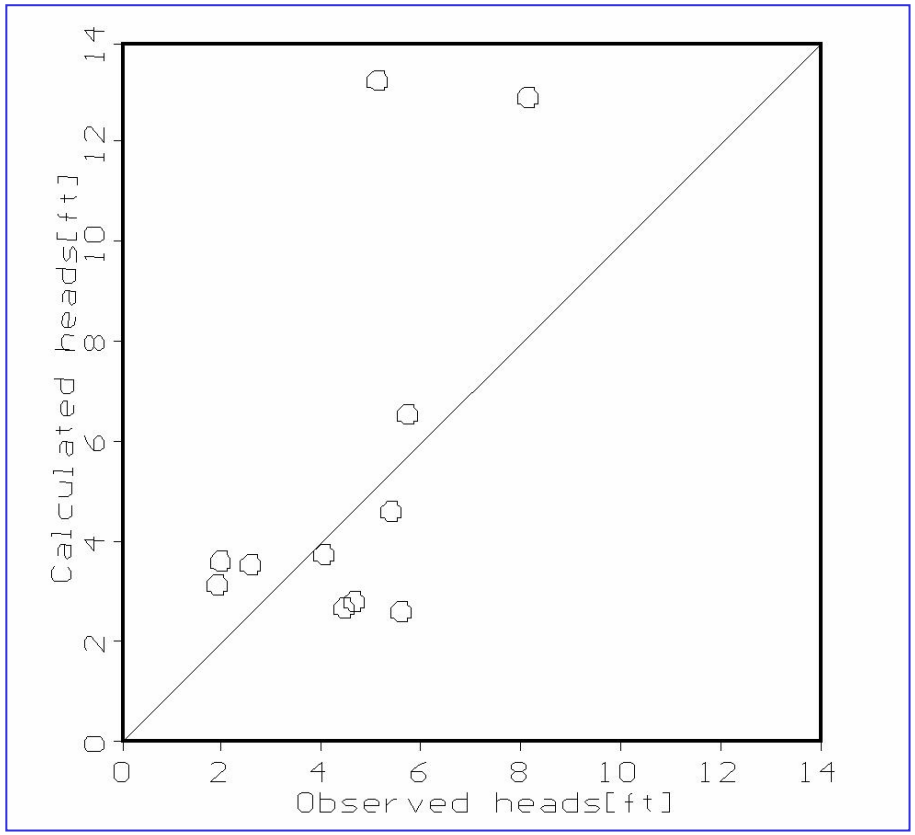
FIGURE 6-5

Flow Directions and Groundwater Elevation Contours M-12 Landfill Site Fort Monmouth, New Jersey

Notes:

1) Arrows indicate groundwater flow direction
2) Monitoring Wells shown in green
3) Contour Lines indicate groundwater elevation contours
4) Husky Brook shown in blue, represents river boundary with constant head of zero feet (mean sea level).
5) Coordinates shown represent NAD-83 survey feet.
6) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

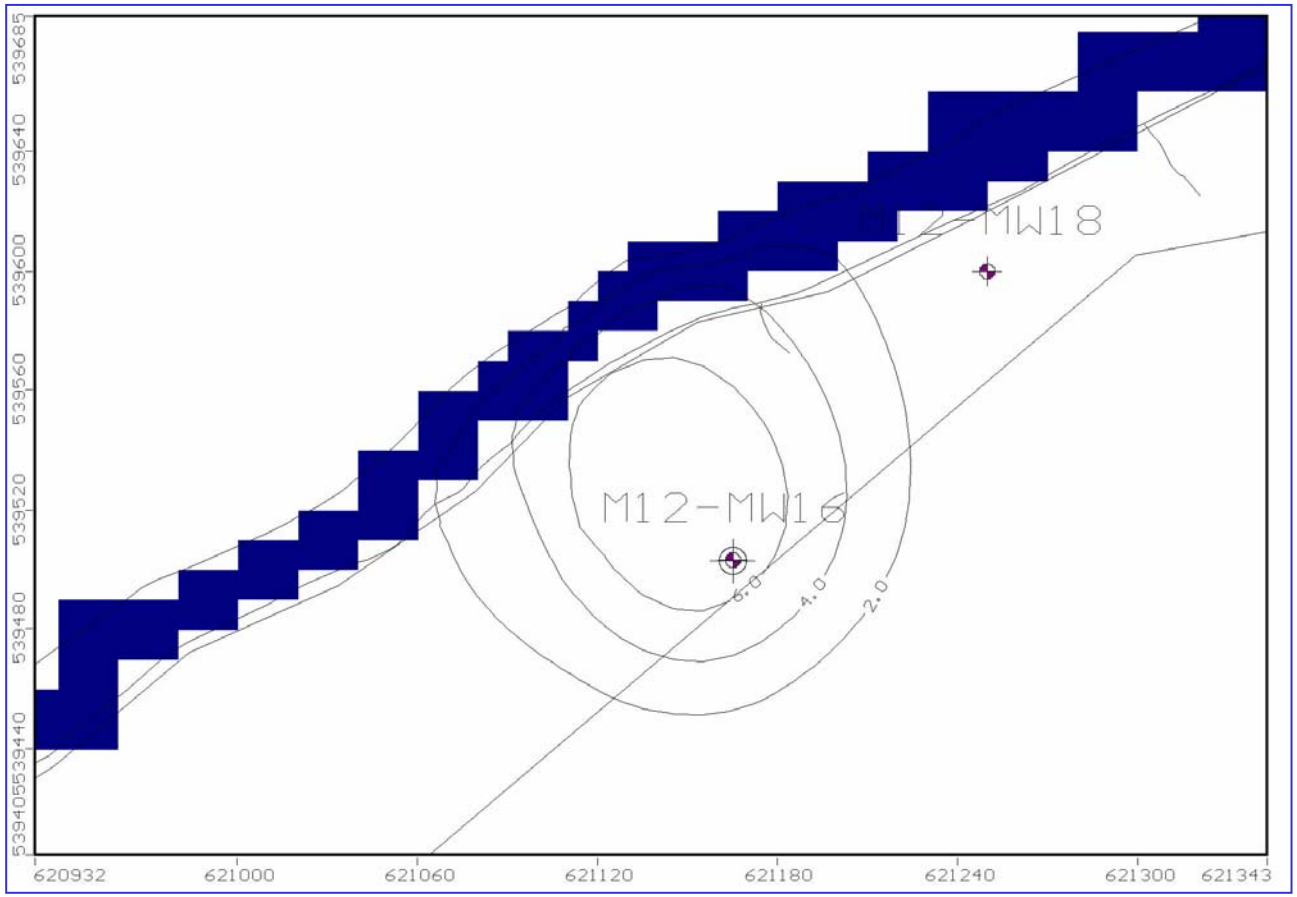


Notes:
1) This graph represents a comparison between heads calculated in the model with heads observed in monitoring wells at the M-12 Restoration Site, February 6-7, 2001
2) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-6

Calculated Versus Observed Head
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



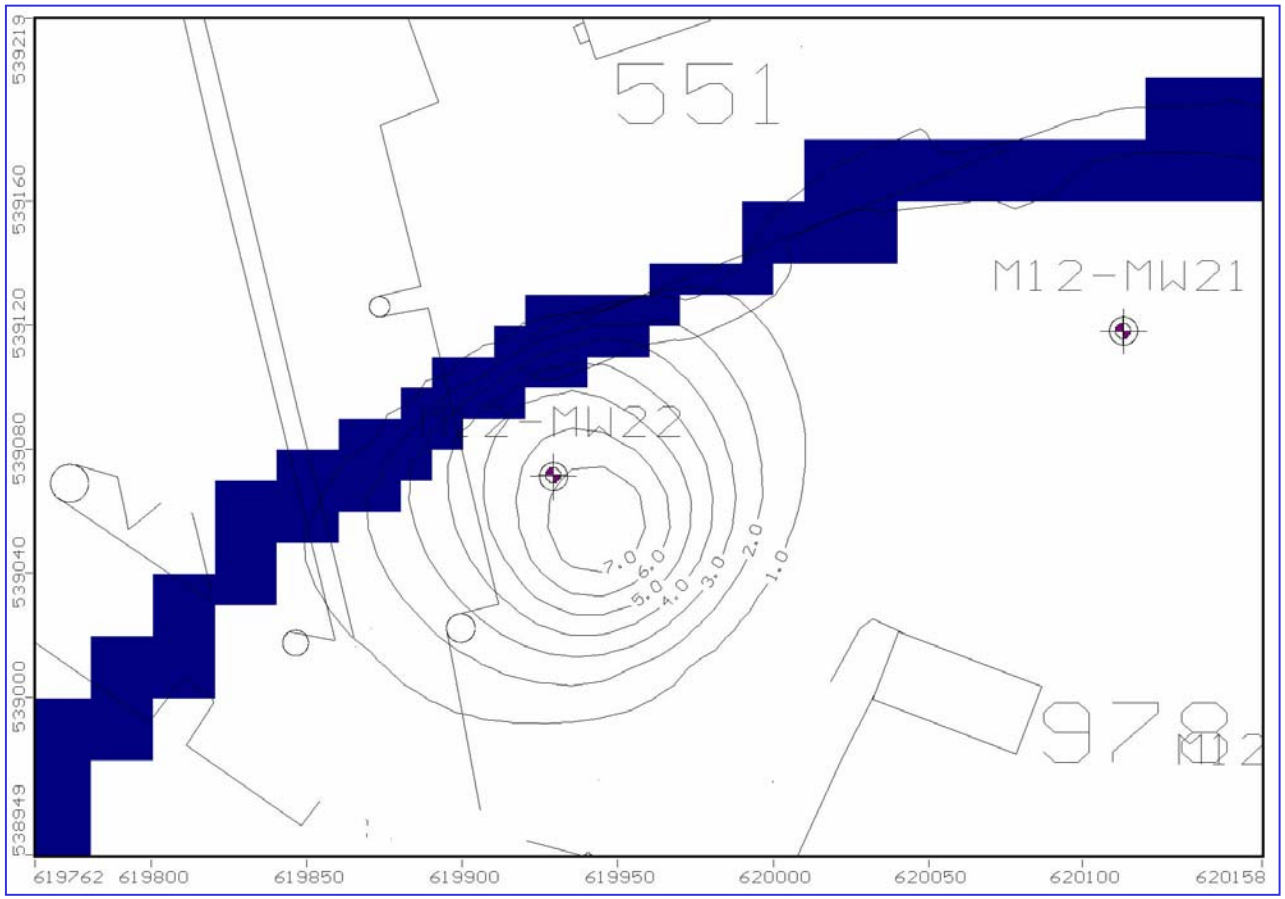
Notes:

1) Isoconcentration contours represent predicted arsenic concentrations at 99 years, in the vicinity of monitoring well M12MW16.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-7a

Predicted Arsenic Concentration
99 Years, Well M12MW16
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



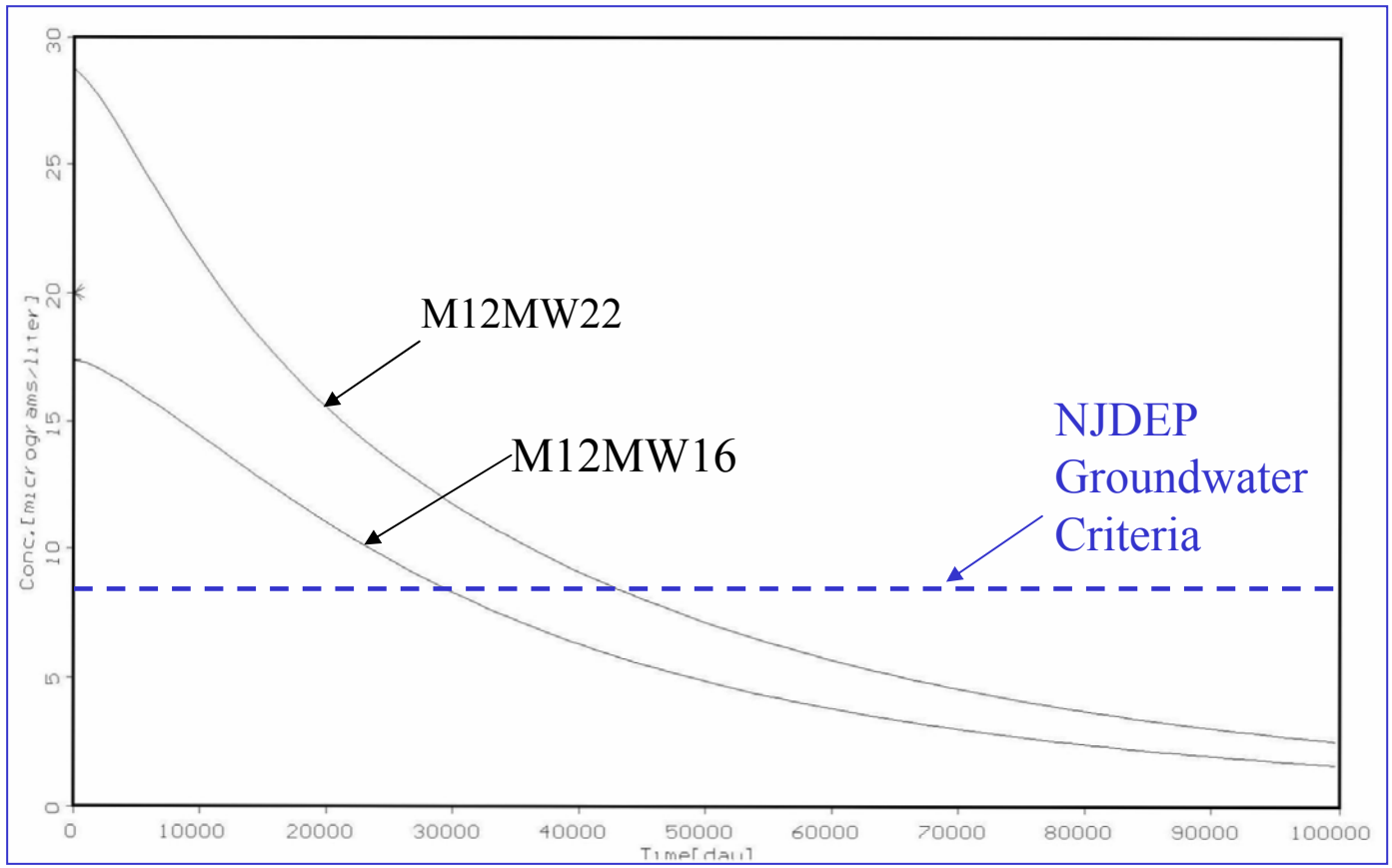
Notes:

1) Isoconcentration contours represent predicted arsenic concentrations at 150 years, in the vicinity of monitoring well M12MW22.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-7b

Predicted Arsenic Concentration
150 Years, Well M12MW22
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

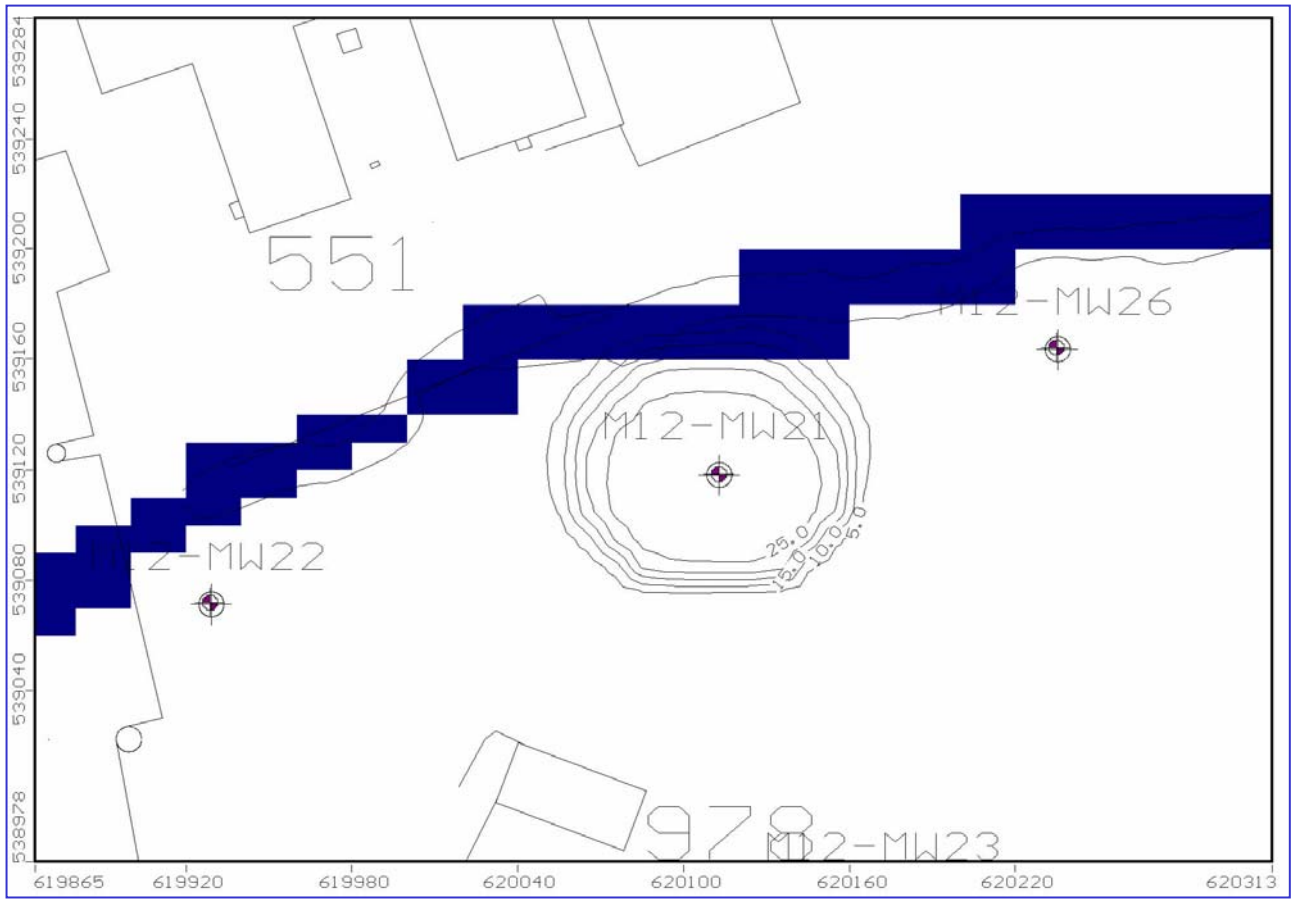


Notes:
1) NJDEP groundwater criteria for arsenic is 8 micrograms per liter (ug/L).
2) Time for compliance at well M12MW16 is 99 years.
3) Time for compliance at well M12MW22 is 150 years.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-7c

Predicted Arsenic Concentration Versus Time
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



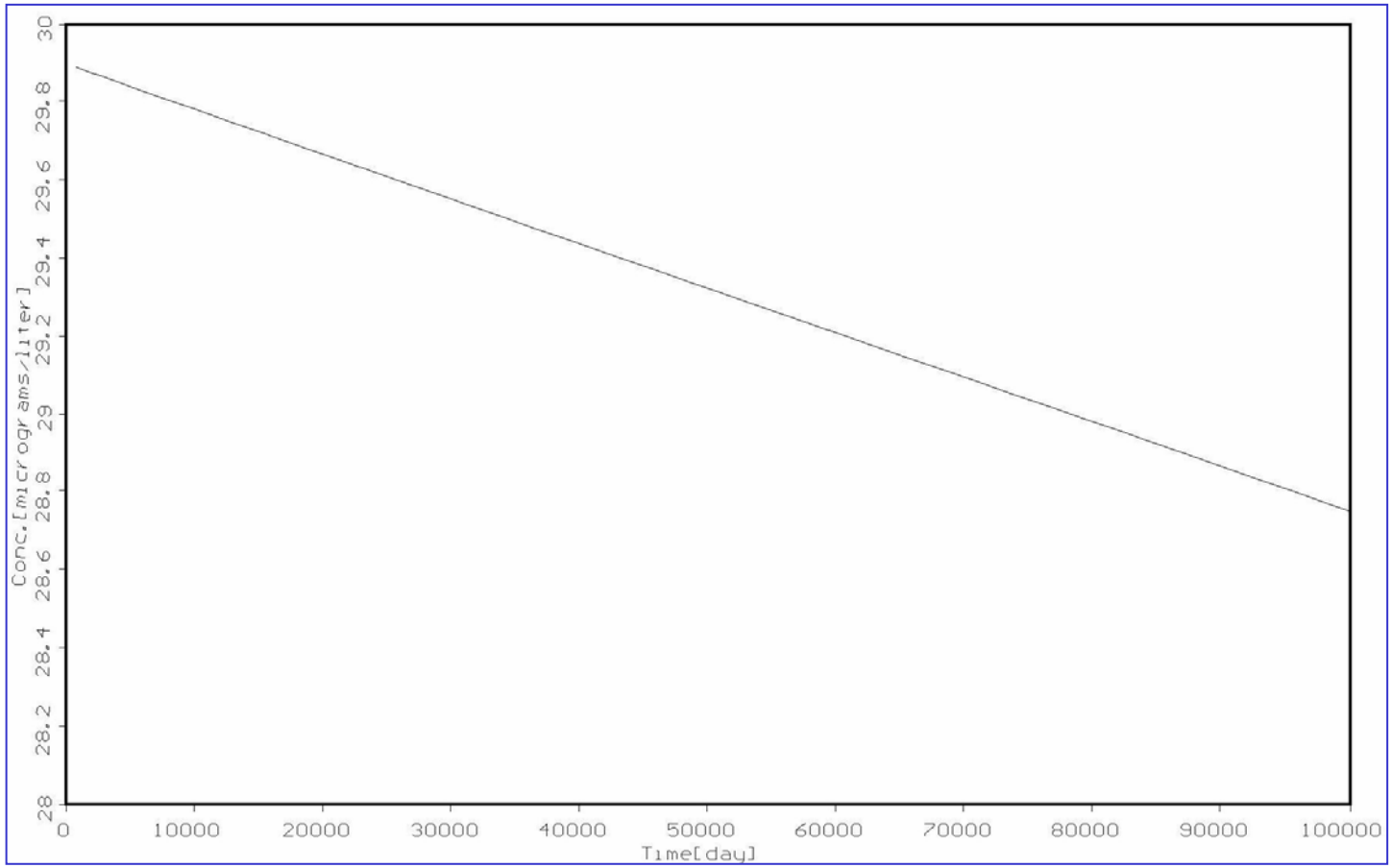
Notes:

1) Isoconcentration contours represent predicted lead concentrations at 274 years, in the vicinity of monitoring well M12MW21.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-8a

Predicted Lead Concentration
274 Years, Well M12MW21
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844



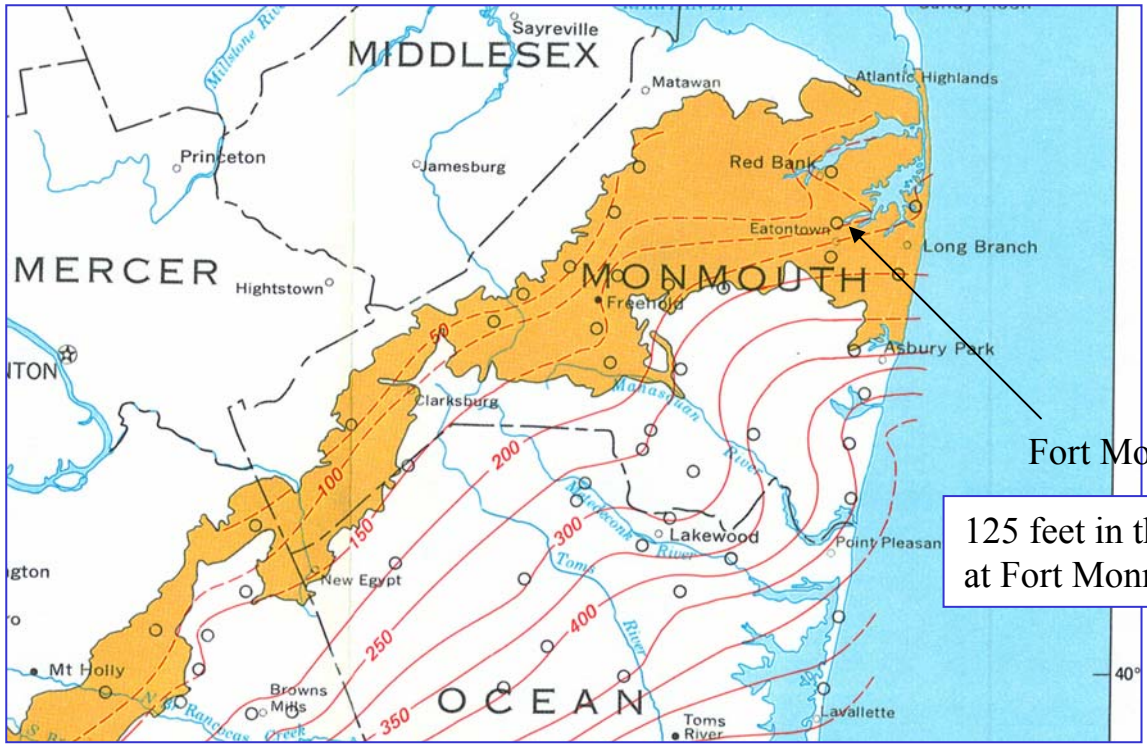
Notes:
1) NJDEP groundwater criteria for lead is 10 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 6-8b

Predicted Lead Concentration Versus Time
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

THIS
PAGE
INTENTIONALLY
REMOVED



Fort Monmouth

125 feet in thickness at Fort Monmouth

EXPLANATION

Outcrop area of the Navesink Formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, and Manasquan Formation

600 — Line of equal thickness of the composite confining bed. Dashed where approximately located. Interval 50 feet

Well location

Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 6-10

Outcrop and Thickness of Composite Confining Unit
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

TABLES

Table 3-1
Well Construction Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Northing	Easting	Elevation of Inner Casing Survey Mark	Elevation of Ground Surface	Hole Diameter	Total Depth of Well	Depth to Top of Screen	Screen Length	Screen Material	Depth from Ground to Native Material	Approx. Yield[3]	Date of Construction
Units	ft	ft	ft (amsl)[1]	ft (amsl)[1]	in	ft (bgs)[2]	ft (bgs)[2]	ft	--	ft	gpm[4]	--
M12MW16, NJDEP #29-32576	539503.212	621164.902	8.35	6.35	12	14.5	4.5	10.0	10 Slot PVC	4	1.5	1/4/1995
M12MW17, NJDEP #29-32577	539368.203	620886.295	7.87	5.87	12	14.5	4.5	10.0	10 Slot PVC	4	1	1/11/1995
M12MW18, NJDEP #29-32578	539599.606	621250.052	6.62	4.62	12	14.5	4.5	10.0	10 Slot PVC	4	1	1/11/1995
M12MW19, NJDEP #29-41779	539154.15	620648.513	11.35	8.97	10	18.0	3.0	15.0	10 Slot PVC	8	<2	11/19/1999
M12MW20, NJDEP #29-41780	539165.647	620393.214	9.50	6.44	10	18.0	3.0	15.0	10 Slot PVC	5	<1	11/20/1999
M12MW21, NJDEP #29-41781	539118.396	620112.754	9.41	6.6	10	18.0	3.0	15.0	10 Slot PVC	5	<2	11/18/1999
M12MW22, NJDEP #29-41782	539071.522	619929.045	11.56	9.35	10	18.0	3.0	15.0	10 Slot PVC	8	<2	11/19/1999
M12MW23, NJDEP #29-41783	538965.912	620173.09	8.71	5.33	10	18.0	3.0	15.0	10 Slot PVC	8	<2	11/19/1999
M12MW24, NJDEP #29-41784	538961.797	620424.815	14.04	10.54	10	18.0	3.0	15.0	10 Slot PVC	5	<1	11/19/1999
M12MW25, NJDEP #29-41785	539161.785	620516.646	12.49	8.88	10	18.0	3.0	15.0	10 Slot PVC	10	<2	11/22/1999
M12MW26, NJDEP #29-41786	539163.885	620235.222	9.39	5.97	10	18.0	3.0	15.0	10 Slot PVC	9	NA	11/24/1999

Notes:

Wells M12MW16 through M12MW18 installed by Roy F. Weston, Inc.

Wells M12MW29 through M12MW26 installed by the DPW.

Where a difference in reported data exists between a monitoring well permit and the corresponding boring log, data from the permit was used.

[1]amsl = above mean sea level

[2]bgs = below ground surface

[3]Pump rate during well development

[4]gpm = gallons per minute

NA = Not available

DPW = Department of Public Works

Table 3-2
Groundwater Sample Collection Summary
June 1997 to January 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Monitoring Well ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
1	2677.01	Trip Blank	06/12/97	07/07/97	Aqueous	BLANK	TCL VOA +15	Method 624
	2677.02	Field Blank	06/12/97	07/07/97	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2687.01	M12MW18, NJDEP #29-32578	06/12/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2687.02	M12MW16, NJDEP #29-32576	06/12/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2687.03	M12MW17, NJDEP #29-32577	06/12/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2687.04	Duplicate	06/12/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
2	2770.01	Trip Blank	07/02/97	07/10/97	Aqueous	BLANK	TCL VOA +15	Method 624
	2770.02	Field Blank	07/02/97	07/10/97	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2770.03	M12MW18, NJDEP #29-32578	07/02/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2770.04	M12MW16, NJDEP #29-32576	07/02/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2770.05	M12MW17, NJDEP #29-32577	07/02/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
	2770.06	Duplicate	07/02/97	07/07/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3111D, 3111B, 3112B, 3113B; Method 608, 624, 625
3	3148.01	Trip Blank	11/06/97	11/12/97	Aqueous	BLANK	TCL VOA +15	Method 624
	3148.02	Field Blank	11/06/97	11/26/97	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3148.03	M12MW18, NJDEP #29-32578	11/06/97	12/04/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3148.04	M12MW16, NJDEP #29-32576	11/06/97	12/04/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3148.05	M12MW17, NJDEP #29-32577	11/06/97	12/04/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3148.06	Duplicate	11/06/97	12/04/97	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
4	3358.01	Trip Blank	02/20/98	03/17/98	Aqueous	BLANK	TCL VOA +15	Method 624
	3358.02	Field Blank	02/20/98	03/17/98	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3358.03	M12MW16, NJDEP #29-32576	02/20/98	03/17/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3358.04	M12MW17, NJDEP #29-32577	02/20/98	03/17/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3358.05	M12MW18, NJDEP #29-32578	02/20/98	03/17/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3358.06	Duplicate	02/20/98	03/17/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
5	3553.01	Trip Blank	05/07/98	05/28/98	Aqueous	BLANK	TCL VOA +15	Method 624
	3553.02	Field Blank	05/07/98	05/28/98	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3553.03	M12MW16, NJDEP #29-32576	05/07/98	05/28/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3553.04	M12MW17, NJDEP #29-32577	05/07/98	05/28/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3553.05	M12MW18, NJDEP #29-32578	05/07/98	05/28/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3553.06	Duplicate	05/07/98	05/28/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
6	3788.01	Trip Blank	08/06/98	08/20/98	Aqueous	BLANK	TCL VOA +15	Method 624
	3788.02	Field Blank	08/06/98	08/20/98	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3788.03	M12MW16, NJDEP #29-32576	08/06/98	08/20/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3788.04	M12MW17, NJDEP #29-32577	08/06/98	08/20/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3788.05	M12MW18, NJDEP #29-32578	08/06/98	08/20/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	3788.06	Duplicate	08/06/98	08/20/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625

Table 3-2
Groundwater Sample Collection Summary
June 1997 to January 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Monitoring Well ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
7	4025.01	Trip Blank	11/03/98	11/07/98	Aqueous	BLANK	TCL VOA +15	Method 624
	4025.02	Field Blank	11/03/98	11/07/98	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4025.03	M12MW17, NJDEP #29-32577	11/03/98	12/01/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4025.04	M12MW16, NJDEP #29-32576	11/03/98	12/01/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4025.05	M12MW18, NJDEP #29-32578	11/03/98	12/01/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4025.06	Duplicate	11/03/98	12/01/98	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
8	4234.01	M12MW16, NJDEP #29-32576	01/29/99	02/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4234.02	M12MW17, NJDEP #29-32577	01/29/99	02/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4234.03	M12MW18, NJDEP #29-32578	01/29/99	02/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4284.01	Trip Blank	01/29/99	02/26/99	Aqueous	BLANK	TCL VOA +15	Method 624
	4284.02	Field Blank	01/29/99	02/23/99	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
9	4508.01	Trip Blank	05/25/99	05/27/99	Aqueous	BLANK	TCL VOA +15	Method 624
	4508.02	Field Blank	05/25/99	05/27/99	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4508.03	M12MW18, NJDEP #29-32578	05/25/99	06/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4508.04	M12MW16, NJDEP #29-32576	05/25/99	06/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4508.05	M12MW17, NJDEP #29-32577	05/25/99	06/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4508.06	Duplicate	05/25/99	06/04/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
10	4647.01	Trip Blank	07/23/99	07/29/99	Aqueous	BLANK	TCL VOA +15	Method 624
	4647.02	Field Blank	07/23/99	07/29/99	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4647.03	Duplicate	07/23/99	07/30/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4647.04	M12MW16, NJDEP #29-32576	07/23/99	07/30/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4647.05	M12MW17, NJDEP #29-32577	07/23/99	07/30/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4647.06	M12MW18, NJDEP #29-32578	07/23/99	07/30/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
11	4855.01	Trip Blank	10/14/99	10/15/99	Aqueous	BLANK	TCL VOA +15	Method 624
	4855.02	Field Blank	10/14/99	10/15/99	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4855.03	Duplicate	10/14/99	10/20/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4855.04	M12MW16, NJDEP #29-32576	10/14/99	10/20/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4855.05	M12MW17, NJDEP #29-32577	10/14/99	10/20/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	4855.06	M12MW18, NJDEP #29-32578	10/14/99	10/20/99	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
12	5199.01	Trip Blank	02/25/00	03/03/00	Aqueous	BLANK	TCL VOA +15	Method 624
	5199.02	Field Blank	02/25/00	03/03/00	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.03	Duplicate	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.04	M12MW16, NJDEP #29-32576	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.05	M12MW17, NJDEP #29-32577	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.06	M12MW18, NJDEP #29-32578	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.07	M12MW19, NJDEP #29-41779	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.08	M12MW20, NJDEP #29-41780	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.09	M12MW21, NJDEP #29-41781	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.10	M12MW22, NJDEP #29-41782	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.11	M12MW23, NJDEP #29-41783	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.12	M12MW24, NJDEP #29-41784	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.13	M12MW25, NJDEP #29-41785	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5199.14	M12MW26, NJDEP #29-41786	02/25/00	03/04/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625

Table 3-2
Groundwater Sample Collection Summary
June 1997 to January 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Monitoring Well ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
13	5244.01	Trip Blank	03/14/00	03/22/00	Aqueous	BLANK	TCL VOA +15	Method 624
	5244.02	Field Blank	03/14/00	03/17/00	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.03	Duplicate	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.04	M12MW19, NJDEP #29-41779	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.05	M12MW20, NJDEP #29-41780	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.06	M12MW21, NJDEP #29-41781	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.07	M12MW22, NJDEP #29-41782	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.08	M12MW23, NJDEP #29-41783	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.09	M12MW24, NJDEP #29-41784	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.10	M12MW25, NJDEP #29-41785	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5244.11	M12MW26, NJDEP #29-41786	03/14/00	03/28/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
14	5430.01	Trip Blank	05/23/00	05/30/00	Aqueous	BLANK	TCL VOA +15	Method 624
	5430.02	Field Blank	05/23/00	05/30/00	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.03	Duplicate	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.04	M12MW16, NJDEP #29-32576	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.05	M12MW17, NJDEP #29-32577	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.06	M12MW18, NJDEP #29-32578	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.07	M12MW19, NJDEP #29-41779	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.08	M12MW20, NJDEP #29-41780	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.09	M12MW21, NJDEP #29-41781	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.10	M12MW22, NJDEP #29-41782	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.11	M12MW23, NJDEP #29-41783	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.12	M12MW24, NJDEP #29-41784	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.13	M12MW25, NJDEP #29-41785	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5430.14	M12MW26, NJDEP #29-41786	05/23/00	05/23/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
Low-Flow #1	5642.01*	Field Blank	08/18/00	08/18/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
	5642.02*	M12MW18, NJDEP #29-32578	08/18/00	08/18/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5642.03*	M12MW16, NJDEP #29-32576	08/18/00	08/18/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5642.04*	M12MW17, NJDEP #29-32577	08/18/00	08/18/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5642.05*	Duplicate	08/18/00	08/18/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5645.01	Field Blank	08/21/00	08/21/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
	5645.02*	M12MW22, NJDEP #29-41782	08/21/00	08/21/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5645.03*	M12MW21, NJDEP #29-41781	08/21/00	08/21/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5645.04*	M12MW26, NJDEP #29-41786	08/21/00	08/21/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5645.05*	Duplicate	08/21/00	08/21/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.01*	Field Blank	08/22/00	08/22/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
	5649.02*	M12MW23, NJDEP #29-41783	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.03*	M12MW24, NJDEP #29-41784	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.04*	M12MW19, NJDEP #29-41779	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.05*	M12MW25, NJDEP #29-41785	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.06*	M12MW20, NJDEP #29-41780	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5649.07*	Duplicate	08/22/00	08/22/00	Aqueous	GW	TAL metals	Method 3120B, 3112B

Table 3-2
Groundwater Sample Collection Summary
June 1997 to January 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Monitoring Well ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
15	5705.01	Trip Blank	09/12/00	09/18/00	Aqueous	BLANK	TCL VOA +15	Method 624
	5705.02	Field Blank	09/12/00	09/18/00	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.03	Duplicate	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.04	M12MW16, NJDEP #29-32576	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.05	M12MW17, NJDEP #29-32577	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.06	M12MW18, NJDEP #29-32578	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.07	M12MW19, NJDEP #29-41779	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.08	M12MW20, NJDEP #29-41780	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.09	M12MW21, NJDEP #29-41781	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.10	M12MW22, NJDEP #29-41782	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.11	M12MW23, NJDEP #29-41783	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.12	M12MW24, NJDEP #29-41784	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.13	M12MW25, NJDEP #29-41785	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5705.14	M12MW26, NJDEP #29-41786	09/12/00	09/18/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
Low-Flow #2	5728.02*	Duplicate	09/09/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5728.03*	M12MW18, NJDEP #29-32578	09/09/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5728.04*	M12MW16, NJDEP #29-32576	09/09/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5728.05*	M12MW17, NJDEP #29-32577	09/09/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5732.02*	Duplicate	09/20/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5732.03*	M12MW22, NJDEP #29-41782	09/20/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5732.04*	M12MW21, NJDEP #29-41781	09/20/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5732.05*	M12MW23, NJDEP #29-41783	09/20/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5732.06*	M12MW26, NJDEP #29-41786	09/20/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5735.02*	Duplicate	09/21/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5735.03*	M12MW19, NJDEP #29-41779	09/21/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5735.04*	M12MW25, NJDEP #29-41785	09/21/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5735.05*	M12MW20, NJDEP #29-41780	09/21/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5735.06*	M12MW24, NJDEP #29-41784	09/21/00	09/28/00	Aqueous	GW	TAL metals	Method 3120B, 3112B
	5728.01*	Field Blank	09/19/00	09/28/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
	5732.01*	Field Blank	09/20/00	09/28/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
	5735.01*	Field Blank	09/21/00	09/28/00	Aqueous	BLANK	TAL metals	Method 3120B, 3112B
16	5861.01	Trip Blank	11/17/00	11/20/00	Aqueous	BLANK	TCL VOA +15	Method 624
	5861.02	Field Blank	11/17/00	11/20/00	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.03	Duplicate	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.04	M12MW16, NJDEP #29-32576	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.05	M12MW17, NJDEP #29-32577	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.06	M12MW18, NJDEP #29-32578	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.07	M12MW19, NJDEP #29-41779	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.08	M12MW20, NJDEP #29-41780	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.09	M12MW21, NJDEP #29-41781	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.1	M12MW22, NJDEP #29-41782	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.11	M12MW23, NJDEP #29-41783	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.12	M12MW24, NJDEP #29-41784	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.13	M12MW25, NJDEP #29-41785	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	5861.14	M12MW26, NJDEP #29-41786	11/17/00	11/20/00	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625

Table 3-2
Groundwater Sample Collection Summary
June 1997 to January 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Monitoring Well ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
17	365	Trip Blank	01/25/01	02/02/01	Aqueous	BLANK	TCL VOA +15	Method 624
	366	Field Blank	01/25/01	02/02/01	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	367	Duplicate	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	368	M12MW26, NJDEP #29-41786	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	369	M12MW25, NJDEP #29-41785	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	370	M12MW24, NJDEP #29-41784	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	371	M12MW23, NJDEP #29-41783	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	372	M12MW22, NJDEP #29-41782	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	373	M12MW21, NJDEP #29-41781	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	374	M12MW20, NJDEP #29-41780	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	375	M12MW19, NJDEP #29-41779	01/25/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	389	Trip Blank	01/26/01	02/02/01	Aqueous	BLANK	TCL VOA +15	Method 624
	390	Field Blank	01/26/01	02/02/01	Aqueous	BLANK	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	392	Duplicate	01/26/01	02/02/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	393	M12MW16, NJDEP #29-32576	01/26/01	02/03/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	394	M12MW17, NJDEP #29-32577	01/26/01	02/03/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625
	395	M12MW18, NJDEP #29-32578	01/26/01	02/03/01	Aqueous	GW	TCL+30; TAL metals; Pesticides/PCBs	Method 3120B, 3112B; Method 608, 624, 625

Notes:
GW : Groundwater
TCL+30 : Target Compound List plus 30 parameters
TAL metals : Target Analyte List metals

*Low Flow Sampling Method was used to collect sample

Table 3-3
Surface Water Sample Collection Information
Quarterly Events (1996-2001)
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Stream Sampling Location	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
1	2178.09	Site #9	10/08/96	10/21/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2178.11	Site #11	10/08/96	10/21/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
2	2223.04	Site #9	11/25/96	12/09/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2223.08	Site #11	11/25/96	12/09/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2223.05	Site #19	11/25/96	12/09/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
3	2246.04	Site #9	12/12/96	12/17/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2246.08	Site #11	12/12/96	12/17/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2246.05	Site #19	12/12/96	12/17/96	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
4	2298.04	Site #9	01/29/97	02/06/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2298.08	Site #11	01/29/97	02/06/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2298.05	Site #19	01/29/97	02/06/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
5	2361.04	Site #9	02/26/97	03/07/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2361.08	Site #11	02/26/97	03/07/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2361.05	Site #19	02/26/97	03/07/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
6	2375.04	Site #9	03/10/97	03/11/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2375.08	Site #11	03/10/97	03/11/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2375.05	Site #19	03/10/97	03/11/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
7	2439.04	Site #9	04/08/97	04/18/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2439.08	Site #11	04/08/97	04/18/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2439.05	Site #19	04/08/97	04/18/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
8	2810.04	Site #9	07/17/97	07/29/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2810.08	Site #11	07/17/97	07/29/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	2810.05	Site #19	07/17/97	07/29/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
9	3121.04	Site #9	10/30/97	11/04/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3121.08	Site #11	10/30/97	11/04/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3121.05	Site #19	10/30/97	11/04/97	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
10	3331.04	Site #9	02/10/98	02/12/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3331.08	Site #11	02/10/98	02/12/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3331.05	Site #19	02/10/98	02/12/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
11	3499.04	Site #9	04/21/98	04/30/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3499.08	Site #11	04/21/98	04/30/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3499.05	Site #19	04/21/98	04/30/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
12	3816.04	Site #9	08/19/98	08/21/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3816.08	Site #11	08/19/98	08/21/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	3816.05	Site #19	08/19/98	08/21/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
13	4060.06	Site #9	11/17/98	11/20/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4060.07	Site #19	11/17/98	11/20/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4069.05	Site #11	11/18/98	11/20/98	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
14	4300.04	Site #9	02/25/99	03/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4300.08	Site #11	02/25/99	03/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4300.05	Site #19	02/25/99	03/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
15	4579.06	Site #9	06/29/99	07/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4579.10	Site #11	06/29/99	07/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4579.07	Site #19	06/29/99	07/10/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602

Table 3-3
Surface Water Sample Collection Information
Quarterly Events (1996-2001)
M-12 Landfill Site
Fort Monmouth, New Jersey

Round #	Sample ID	Stream Sampling Location	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
16	4802.06	Site #9	09/21/99	09/24/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4802.10	Site #11	09/21/99	09/24/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4802.07	Site #19	09/21/99	09/24/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
17	4997.07	Site #9	12/08/99	12/13/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4997.18	Site #11	12/08/99	12/13/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	4997.08	Site #19	12/08/99	12/13/99	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
18	5211.07	Site #9	03/01/00	03/04/00	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	5211.18	Site #11	03/01/00	03/04/00	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
	5211.08	Site #19	03/01/00	03/04/00	Aqueous	Surface Water	VOA+15, Wet Chemistry	Method 601/602
19	5468.07	Site #9	06/12/00	06/14/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5468.11	Site #11	06/12/00	06/14/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5468.08	Site #19	06/12/00	06/14/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
20	5658.07	Site #9	08/24/00	08/29/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5658.11	Site #11	08/24/00	08/29/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5658.08	Site #19	08/24/00	08/29/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
21	5868.07	Site #9	11/20/00	11/21/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5868.11	Site #11	11/20/00	11/21/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	5868.08	Site #19	11/20/00	11/21/00	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
22	957	Site #9	02/21/01	02/27/01	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	961	Site #11	02/21/01	02/28/01	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608
	958	Site #19	02/21/01	02/27/01	Aqueous	Surface Water	VOA+15, PCBs, Wet Chemistry	Method 601/602; Method 608

Notes:
VOA +15: Volatile Organic Analysis plus 15 parameters
PCBs: PolyChlorinated Biphenyls

Table 3-4
Soil Sample Collection Information for Geoprobe Borings near MW16 and MW22
M-12 Landfill Site
Fort Monmouth, New Jersey

Sample Location / Depth	Sample ID	Date Collected	Date Analysis	Matrix	Sample Type	Analytical Parameters	Analysis Method
MW16A/0-6"	1250	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16A/12-18"	1251	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16A/24-30"	1252	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16A/36-42"	1253	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16B/0-6"	1254	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16B/12-18"	1255	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16B/24-30"	1256	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16B/36-42"	1257	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16C/0-6"	1258	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16C/12-18"	1259	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16C/24-30"	1260	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16C/36-42"	1261	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16D/0-6"	1262	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16D/12-18"	1263	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16D/24-30"	1264	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16D/36-42"	1265	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16E/0-6"	1266	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16E/12-18"	1267	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16E/24-30"	1268	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16E/36-42"	1269	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16F/0-6"	1270	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16F/12-18"	1271	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16F/24-30"	1272	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16F/36-42"	1273	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16G/0-6"	1274	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16G/12-18"	1275	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16G/24-30"	1276	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16G/36-42"	1277	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16H/0-6"	1278	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16H/12-18"	1279	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16H/24-30"	1280	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16H/36-42"	1281	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A

Table 3-4
Soil Sample Collection Information for Geoprobe Borings near MW16 and MW22
M-12 Landfill Site
Fort Monmouth, New Jersey

Sample Location / Depth	Sample ID	Date Collected	Date Analysis	Matrix	Sample Type	Analytical Parameters	Analysis Method
MW16I/0-6"	1282	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16I/12-18"	1283	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16I/24-30"	1284	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW16I/36-42"	1285	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22A/0-6"	1225	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22A/12-18"	1226	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22A/24-30"	1227	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22A/36-42"	1228	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/0-6"	1229	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/12-18"	1230	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/24-30"	1231	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/36-42"	1232	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/48-54"	1233	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22B/60-66"	1234	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22C/0-6"	1235	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22C/12-18"	1236	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22C/24-30"	1237	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22C/36-42"	1238	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22D/0-6"	1239	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22D/12-18"	1240	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22D/24-30"	1241	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22D/36-42"	1242	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22E/0-6"	1243	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22E/12-18"	1244	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22E/24-30"	1245	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22E/36-42"	1246	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22F/0-6"	1247	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22F/12-18"	1248	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
MW22F/24-30"	1249	03/03/01	03/05/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
F.D./0-6"	1286	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
F.D./12-18"	1287	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
F.D./24-30"	1288	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A
F.D./36-42"	1289	03/03/01	03/06/01	Soil	Soil Boring	Arsenic and Lead	Methods 7060A, 7420, and 3051A

Table 3-5
Groundwater Elevation Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M12MW16, NJDEP #29-32576	8.35	06/12/97	3.70	4.65	07/02/97	3.95	4.40	11/06/97	3.80	4.55	02/20/98	3.00	5.35
M12MW17, NJDEP #29-32577	7.87	06/12/97	3.91	3.96	07/02/97	4.25	3.62	11/06/97	4.20	3.67	02/20/98	3.70	4.17
M12MW18, NJDEP #29-32578	6.62	06/12/97	3.40	3.22	07/02/97	3.50	3.12	11/06/97	3.45	3.17	02/20/98	3.10	3.52
M12MW19, NJDEP #29-41779	11.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW20, NJDEP #29-41780	9.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW21, NJDEP #29-41781	9.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW22, NJDEP #29-41782	11.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW23, NJDEP #29-41783	8.71	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW24, NJDEP #29-41784	14.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW25, NJDEP #29-41785	12.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW26, NJDEP #29-41786	9.39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.
3) NS: Not Sampled

Table 3-5
Groundwater Elevation Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M12MW16, NJDEP #29-32576	8.35	05/07/98	3.33	5.02	08/06/98	3.80	4.55	11/03/98	4.28	4.07	01/29/99	3.41	4.94
M12MW17, NJDEP #29-32577	7.87	05/07/98	3.49	4.38	08/06/98	4.21	3.66	11/03/98	5.58	2.29	01/29/99	3.76	4.11
M12MW18, NJDEP #29-32578	6.62	05/07/98	2.63	3.99	08/06/98	3.50	3.12	11/03/98	3.60	3.02	01/29/99	3.38	3.24
M12MW19, NJDEP #29-41779	11.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW20, NJDEP #29-41780	9.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW21, NJDEP #29-41781	9.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW22, NJDEP #29-41782	11.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW23, NJDEP #29-41783	8.71	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW24, NJDEP #29-41784	14.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW25, NJDEP #29-41785	12.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
M12MW26, NJDEP #29-41786	9.39	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1) Elev.: Elevation in feet
above mean sea level.
2) Depth to water: depth in feet
from the inner casing survey mark.
3) NS: Not Sampled

Table 3-5
Groundwater Elevation Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M12MW16, NJDEP #29-32576	8.35	05/25/99	3.15	5.20	07/23/99	3.63	4.72	10/14/99	3.87	4.48	02/25/00	3.52	4.83
M12MW17, NJDEP #29-32577	7.87	05/25/99	4.08	3.79	07/23/99	4.45	3.42	10/14/99	4.43	3.44	02/25/00	3.98	3.89
M12MW18, NJDEP #29-32578	6.62	05/25/99	3.17	3.45	07/23/99	3.35	3.27	10/14/99	3.34	3.28	02/25/00	3.45	3.17
M12MW19, NJDEP #29-41779	11.35	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	9.60	1.75
M12MW20, NJDEP #29-41780	9.50	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	6.94	2.56
M12MW21, NJDEP #29-41781	9.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	5.00	4.41
M12MW22, NJDEP #29-41782	11.56	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	5.25	6.31
M12MW23, NJDEP #29-41783	8.71	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	4.68	4.03
M12MW24, NJDEP #29-41784	14.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	6.83	7.21
M12MW25, NJDEP #29-41785	12.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	10.90	1.59
M12MW26, NJDEP #29-41786	9.39	NS	NS	NS	NS	NS	NS	NS	NS	NS	02/25/00	5.85	3.54

Notes:
1) Elev.: Elevation in feet
above mean sea level.
2) Depth to water: depth in feet
from the inner casing survey mark.
3) NS: Not Sampled

Table 3-5
Groundwater Elevation Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M12MW16, NJDEP #29-32576	8.35	NS	NS	NS	05/23/00	3.02	5.33	08/18/00	3.20	5.15	09/12/00	3.62	4.73
M12MW17, NJDEP #29-32577	7.87	NS	NS	NS	05/23/00	3.51	4.36	08/18/00	2.80	5.07	09/12/00	3.54	4.33
M12MW18, NJDEP #29-32578	6.62	NS	NS	NS	05/23/00	3.74	2.88	08/18/00	2.36	4.26	09/12/00	2.71	3.91
M12MW19, NJDEP #29-41779	11.35	03/14/00	9.45	1.90	05/23/00	9.31	2.04	08/22/00	9.45	1.90	09/12/00	9.68	1.67
M12MW20, NJDEP #29-41780	9.50	03/14/00	6.48	3.02	05/23/00	6.80	2.70	08/22/00	7.80	1.70	09/12/00	7.63	1.87
M12MW21, NJDEP #29-41781	9.41	03/14/00	4.33	5.08	05/23/00	4.30	5.11	08/21/00	4.43	4.98	09/12/00	4.87	4.54
M12MW22, NJDEP #29-41782	11.56	03/14/00	6.22	5.34	05/23/00	6.15	5.41	08/21/00	6.20	5.36	09/12/00	6.62	4.94
M12MW23, NJDEP #29-41783	8.71	03/14/00	4.37	4.34	05/23/00	4.20	4.51	08/22/00	4.80	3.91	09/12/00	5.55	3.16
M12MW24, NJDEP #29-41784	14.04	03/14/00	6.43	7.61	05/23/00	6.45	7.59	08/22/00	6.70	7.34	09/12/00	7.40	6.64
M12MW25, NJDEP #29-41785	12.49	03/14/00	10.76	1.73	05/23/00	10.40	2.09	08/22/00	10.80	1.69	09/12/00	10.86	1.63
M12MW26, NJDEP #29-41786	9.39	03/14/00	5.53	3.86	05/23/00	5.75	3.64	08/21/00	6.10	3.29	09/12/00	6.28	3.11

Notes:

1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.
3) NS: Not Sampled

Table 3-5
Groundwater Elevation Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M12MW16, NJDEP #29-32576	8.35	09/09/00	3.50	4.85	02/06/01	2.64	5.71
M12MW17, NJDEP #29-32577	7.87	09/09/00	3.75	4.12	02/06/01	3.44	4.43
M12MW18, NJDEP #29-32578	6.62	09/09/00	2.70	3.92	02/06/01	2.60	4.02
M12MW19, NJDEP #29-41779	11.35	09/21/00	9.50	1.85	02/06/01	9.44	1.91
M12MW20, NJDEP #29-41780	9.50	09/21/00	7.50	2.00	02/06/01	6.94	2.56
M12MW21, NJDEP #29-41781	9.41	09/20/00	4.20	5.21	02/06/01	4.00	5.41
M12MW22, NJDEP #29-41782	11.56	09/20/00	6.15	5.41	02/06/01	5.94	5.62
M12MW23, NJDEP #29-41783	8.71	09/20/00	4.25	4.46	02/06/01	3.60	5.11
M12MW24, NJDEP #29-41784	14.04	09/21/00	6.10	7.94	02/06/01	5.88	8.16
M12MW25, NJDEP #29-41785	12.49	09/21/00	10.75	1.74	02/06/01	10.52	1.97
M12MW26, NJDEP #29-41786	9.39	09/20/00	6.00	3.39	02/06/01	4.72	4.67

Notes:

1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.
3) NS: Not Sampled

Table 4-1
Data for Geologic Cross-Section A to A'
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Units	M12MW22	M12MW21	M12MW26	M12MW20	M12MW25	M12MW19	M12MW17	M12MW16	M12MW18
Elevation of Top of Casing	ft (amsl)	11.56	9.41	9.39	9.5	12.49	11.35	7.87	8.35	6.62
Elevation of Ground Surface	ft (amsl)	9.35	6.6	5.97	6.44	8.88	8.97	5.87	6.35	4.62
Elevation of Top of Screen	ft (amsl)	6.35	3.6	2.97	3.44	5.88	5.97	1.37	1.85	0.12
Elevation of Groundwater (2/6/01)	ft (amsl)	5.62	5.41	4.67	2.56	1.97	1.91	4.43	5.71	4.02
Elevation of Top of Layer 2	ft (amsl)	1.35	1.6	-3.03	1.44	-1.12	0.97	1.87	2.35	0.62
Elevation of Top of Layer 3	ft (amsl)	NA	NA	NA	2.44	5.88	7.97	NA	NA	NA
Elevation of Bottom of Layer 3	ft (amsl)	NA	NA	NA	1.44	5.38	6.97	NA	NA	NA
Elevation of Bottom of Well	ft (amsl)	-8.65	-11.4	-12.03	-11.56	-9.12	-9.03	-8.63	-8.15	-9.88
Distance from Point A on Cross-Section	ft	0	188	318	464	576	698	1000	1321	1424
Hydraulic Conductivity	ft/day	0.796	3.69	0.0899	2.35	10.8	40.7	208	5.89	1.2

Notes:
The measurements shown in this table were used for the construction of the geologic cross section shown in Figure 4-2.
All measurements in feet.
amsl: above mean sea level
NA: Not Applicable
Monitoring wells M12MW23 and M12MW24 are not drawn on the cross section.
Hydraulic Conductivity values are from slug tests performed Feb. 6-7, 2001.

Explanation of Layers
Layer 1 (Fill): Green to brown sand, little silt and clay
Layer 2 (Native Material): Brown to black fine sand, silt, clay, with organic matter
Layer 3 (Fill): cinders, ashes, slag, coal

Table 4-2
Slug Testing Results Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well ID	Date	Hydraulic Conductivity (feet/day)
M12MW16, NJDEP #29-32576	2/7/2001	0.589
M12MW17, NJDEP #29-32577	2/7/2001	208
M12MW18, NJDEP #29-32578	2/7/2001	1.2
M12MW19, NJDEP #29-41779	2/7/2001	40.7
M12MW20, NJDEP #29-41780	2/7/2001	2.35
M12MW21, NJDEP #29-41781	2/7/2001	3.69
M12MW22, NJDEP #29-41782	2/7/2001	0.796
M12MW23, NJDEP #29-41783	2/7/2001	97.8
M12MW24, NJDEP #29-41784	2/6/2001	3.34
M12MW25, NJDEP #29-41785	2/7/2001	10.8
M12MW26, NJDEP #29-41786	2/7/2001	0.0899
Geometric Mean of Hydraulic Conductivity:		4.4

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW16 - NJDEP Well ID # 29-32576

Lab Sample ID	NJDEP	Site Specific	2687.02	2770.04	3148.04	3358.03	3553.03	3788.03	4025.04	4234.01	4508.04	4647.04	4855.04	5199.04	5430.04	5642.03[2]	5728.04[2]	5705.04	5861.04	393
Sample Date	Criteria	MBC[1]	06/12/97	07/02/97	11/06/97	02/20/98	05/07/98	08/06/98	11/03/98	01/29/99	05/25/99	07/23/99	10/14/99	02/25/00	05/23/00	08/18/00	09/09/00	09/12/00	11/17/00	01/26/01
		Round Number	1	2	3	4	5	6	7	8	9	10	11	12	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles																				
2-Butanone	300	N/A	ND	ND	ND	ND	ND	2.83	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	3.04	ND
Chlorobenzene	4	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	ND	11.08	8.92	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	8.38	ND
Semi-Volatiles																				
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	ND	1.77	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	4	1.28	2.85	5.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Metals																				
Aluminum	200	121000	80	46.2	187	**576**	79.1	**517**	144	ND	110	119	93.5	43.8	63.6	**1540**	79.3	190	**329**	ND
Antimony	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.35	ND	ND	ND	ND
Arsenic	8	N/A	**10**	2	**20**	**26**	**16.8**	**20.2**	**23.2**	**14.8**	**30.3**	**14.4**	**11.9**	**8.85**	4.99	**36.8**	**18.5**	**20.1**	**25.7**	**15.6**
Barium	2000	699	22.36	31.8	32.6	41	21.5	23.6	33.3	22.3	32.8	17.8	18.7	15	ND	40.9	24.5	20.5	26.6	24.3
Beryllium	20	N/A	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	ND	ND	ND	ND	ND	ND	0.751	ND	0.819	0.934	**4.01**	ND	ND	ND	ND	ND	1.24	ND
Calcium	NLE	45400	11500	7800	11310	15940	13960	13700	15300	14900	10900	11900	14000	16900	13300	10200	13000	11600	14200	17700
Chromium	100	N/A	ND	0.9	3	4	ND	9.15	5.63	4.06	4.97	5.57	5.23	3.24	4.8	2.08	ND	19.2	4.04	3.39
Cobalt	NLE	N/A	ND	ND	ND	ND	ND	0.571	0.616	ND	0.809	ND	ND	ND	ND	0.816	ND	ND	ND	ND
Copper	1000	65.6	9	7	9	10	ND	ND	172	32.8	14.7	ND	30.5	5.19	ND	166	ND	ND	ND	ND
Iron	300	431000	**15470**	**32410**	**23120**	**31930**	**27570**	**20100**	**24900**	**21500**	**39400**	**16400**	**15900**	**20100**	**13400**	**25500**	**19000**	**17000**	**24700**	**23300**
Lead	10	N/A	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.72	ND	ND	ND	ND
Magnesium	NLE	62700	4770	78	5130	5280	3269	4190	5730	4450	4830	3300	3890	5050	3540	4600	4190	3840	4810	5880
Manganese	50	331	**81**	**5440**	**61.7**	**94**	**90.1**	**112**	**94.4**	**100**	**74.8**	**77.6**	**87.5**	**112**	**77.6**	**90.4**	**79**	**70.1**	**90.1**	**124**
Mercury	2	N/A	ND	ND	ND	0.3	ND	ND	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	ND	ND	2.3	4.3	2.8	0.779	3	3.4	1.8	1.23	3.21	1.52	0.922	1.74	ND	6.17	2.35	ND
Potassium	NLE	137000	2450	2790	2770	4280	2144	3980	3060	1960	2470	2290	2280	1980	1950	2530	2580	2500	2610	2000
Selenium	50	N/A	2	3	ND	ND	ND	ND	ND	3.6	ND	ND	4.86	ND	ND	ND	ND	ND	5.7	ND
Silver	2	N/A	**33**	**32**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.32	ND
Sodium	50000	21500	5420	17520	14360	11060	4827	4990	13000	9560	12000	4100	4080	6950	3530	13600	5760	6210	8500	7680
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	5.1	2	2	6	5.5	5.74	4.65	3.55	8.56	5.79	3.66	4	3.41	3.13	4.98	3.18	2.14	2.88
Zinc	5000	233	35	23	45	63	16.5	35.3	10.8	28.6	5.26	16.8	13.8	12	ND	9.6	14.2	14.7	51.7	ND

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW17 - NJDEP Well ID # 29-32577

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	2687.03 06/12/97	2770.05 07/02/97	3148.05 11/06/97	3358.04 02/20/98	3553.04 05/07/98	3788.04 08/06/98	4025.03 11/03/98	4234.02 01/29/99	4508.05 05/25/99	4647.05 07/23/99	4855.05 10/14/99	5199.05 02/25/00	5430.05 05/23/00	5642.04[2] 08/18/00	5728.05[2] 09/09/00	5705.05 09/12/00	5861.05 11/17/00	394 01/26/01
		Round Number	1	2	3	4	5	6	7	8	9	10	11	12	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles																				
2-Butanone	300	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	ND	ND	1.26	ND	ND	ND	ND	1.54	ND	ND	NS	NS	1.51	ND	ND
Acetone	700	N/A	ND	ND	ND	ND	ND	5.92	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Semi-Volatiles																				
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	5.06	1.23	3.67	5.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Metals																				
Aluminum	200	121000	54.8	25.3	110	**259**	ND	36.5	ND	ND	ND	ND	28.5	ND	41.6	**369**	42.3	48.4	ND	ND
Antimony	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.47	ND	ND	2.89	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	17.4	9	6.3	61	18.7	98.7	20.5	34.1	15	12.6	100	8.13	ND	184	170	363	51.1	17.8
Beryllium	20	N/A	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**19.4**	ND	1.41	ND	ND	ND	0.763	ND	ND	ND
Calcium	NLE	45400	41000	43120	41270	45430	49440	52700	53300	50400	48000	46800	56500	47100	47100	35400	48200	48900	55300	45700
Chromium	100	N/A	ND	ND	ND	ND	ND	1.27	2.04	1.68	ND	1.43	2.61	ND	2.47	ND	ND	ND	1.32	ND
Cobalt	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	65.6	10	9	11	15	ND	ND	285	ND	7.16	4.01	24.6	3.66	4.89	140	461	ND	ND	ND
Iron	300	431000	**370**	**1680**	260	**12300**	**7314**	**20400**	**4170**	**8800**	**3240**	**2870**	**22900**	**3360**	**2680**	**13200**	**20900**	**39100**	**9910**	**5230**
Lead	10	N/A	0.7	ND	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**80.6**	6.61	ND	ND
Magnesium	NLE	62700	2290	48	2030	3040	3011	3960	2830	2620	2530	2440	4170	2540	2310	2880	3820	5070	3400	2450
Manganese	50	331	23	**2600**	9	**227**	**83**	**210**	**55**	**131**	**52.1**	**50.1**	**283**	**53.7**	34.8	**165**	**236**	**416**	**122**	**64.3**
Mercury	2	N/A	ND	ND	ND	0.3	ND	ND	ND	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	ND	ND	ND	3.6	2.5	ND	1.75	1.46	ND	0.938	0.66	ND	2.24	3.73	6.35	ND	ND	ND
Potassium	NLE	137000	4160	4330	3850	4470	6125	6810	4950	4330	4670	4420	4500	4040	4200	3470	4040	3780	4670	3810
Selenium	50	N/A	1	2	ND	ND	ND	ND	ND	ND	ND	ND	4.43	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	**31**	**33**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	5300	5810	4690	7110	8402	7990	6150	7820	5770	5770	9420	6610	5090	7190	9690	12100	7660	5710
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5000	233	79	20	40	260	22.3	21.3	ND	32.2	ND	17.6	32.3	10.2	25.7	14.6	695	52.4	39.6	9.72

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1] Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2] Low Flow Sampling Method used to collect sample.

[3] Laboratory blank greater than the GWQC.

[4] Laboratory blank greater than Method Detection Limit.

[5] Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW18 - NJDEP Well ID # 29-32578

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	2687.01 06/12/97	2770.03 07/02/97	3148.03 11/06/97	3358.05 02/20/98	3553.05 05/07/98	3788.05 08/06/98	4025.05 11/03/98	4234.03 01/29/99	4508.03 05/25/99	4647.06 07/23/99	4855.06 10/14/99	5199.06 02/25/00	5430.06 05/23/00	5642.02[2] 08/18/00	5728.03[2] 09/09/00	5705.06 09/12/00	5861.06 11/17/00	395 01/26/01
		Round Number	1	2	3	4	5	6	7	8	9	10	11	12	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles																				
2-Butanone	300	N/A	ND	ND	ND	ND	ND	2.55	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	ND	ND	8.18	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Semi-Volatiles																				
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	ND	ND	ND	20.1	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	1.14	ND	ND	ND	ND	ND	ND	ND	ND	1.91	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	2.78	1.23	11.17	5.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	ND	ND	ND
Metals																				
Aluminum	200	121000	**375.2**	**207.9**	**321**	**610**	**247**	**274**	**256**	**268**	**225**	**204**	**222**	**213**	**225**	**4040**	**228**	**231**	**228**	136
Antimony	20	N/A	ND	ND	11	ND	ND	2.42	ND	ND	ND	ND	2.54	ND	ND	3.87	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	147.2	136.1	95	90	114	108	119	115	92.6	96.2	116	114	89.6	122	123	103	121	97.2
Beryllium	20	N/A	0.18	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	2	ND	ND	1	0.6	1.66	ND	ND	0.709	ND	ND	ND	ND	ND	ND	0.656	ND	**4.16**
Calcium	NLE	45400	5570	5190	8470	7810	6082	5820	6150	5940	4560	4970	5520	5990	5730	6860	5690	5860	7040	5260
Chromium	100	N/A	3	ND	1.6	2.2	ND	1.32	3.17	1.68	0.58	1.4	2.48	ND	2.34	3.22	ND	ND	0.655	ND
Cobalt	NLE	N/A	ND	20	1.9	1.3	0.7	1.35	1.16	ND	0.94	0.935	1.03	ND	0.946	1.23	1.54	0.753	1.26	1.48
Copper	1000	65.6	21	9	10	16	5.5	ND	123	3.37	30.6	3.73	23.3	ND	ND	488	ND	ND	ND	3.26
Iron	300	431000	**610**	260	**423**	**807**	162	**523**	**368**	**336**	**326**	156	243	119	153	186	121	**408**	258	134
Lead	10	N/A	0.6	ND	**15**	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.74	ND	ND	ND	ND
Magnesium	NLE	62700	4000	36	3400	3500	3663	3310	3600	3020	2790	2890	3190	3680	3110	3580	3410	3350	3730	3080
Manganese	50	331	28	**3860**	43.9	**222.3**	13.7	29.7	15.5	19.1	12.9	18.5	14.6	14.2	18.3	**70.8**	11.5	15.2	15.3	14
Mercury	2	N/A	ND	ND	ND	0.8	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	ND	ND	6	7.7	5.1	3.62	5.62	4.08	5.41	3.97	3.97	3.07	7.63	8.86	ND	ND	4.1	1.48
Potassium	NLE	137000	4840	5020	6770	6370	6109	6910	5690	4540	5190	4790	4690	4050	4690	4440	4340	4790	4670	4100
Selenium	50	N/A	2	2	ND	ND	ND	ND	ND	ND	ND	ND	3.52	4.65	ND	ND	ND	ND	ND	ND
Silver	2	N/A	**35**	**33**	**60**	ND	ND	ND	ND	ND	ND	ND	**5.61**	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	22100	21430	16450	23680	18640	17400	26400	23000	18600	18700	19600	20000	16600	20700	21100	20200	20500	16500
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.22
Vanadium	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.877	ND	ND	ND
Zinc	5000	233	74	56	104	278	26.8	76.2	38.9	40.1	17.2	47.1	52.9	39.6	36.9	39.7	39.6	55.9	57.3	28.4

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1] Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2] Low Flow Sampling Method used to collect sample.

[3] Laboratory blank greater than the GWQC.

[4] Laboratory blank greater than Method Detection Limit.

[5] Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW19 - NJDEP Well ID # 29-41779

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.07 02/25/00	5244.04 03/14/00	5430.07 05/23/00	5649.04[2] 08/22/00	5735.03[2] 09/21/00	5705.07 09/12/00	5861.07 11/17/00	375 01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	**300**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	**4**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	**700**	**N/A**	ND	ND	ND	NS	NS	ND	4.14	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	**30**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	**5000**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	**900**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	**400**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	**200**	**121000**	**213**	**222**	ND	129	13.4	**214**	**213**	**320**
Antimony	**20**	**N/A**	ND	ND	ND	2.24	ND	ND	ND	ND
Arsenic	**8**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Barium	**2000**	**699**	2.91	9.8	ND	6.28	6.81	10	11.1	7.22
Beryllium	**20**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	**4**	**N/A**	ND	1.09	ND	ND	ND	ND	ND	**4.58**
Calcium	**NLE**	**45400**	37900	42300	39900	39400	37800	38300	40100	35900
Chromium	**100**	**N/A**	2.11	ND	1.47	ND	ND	ND	2.83	3.03
Cobalt	**NLE**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Copper	**1000**	**65.6**	8.62	ND	ND	ND	ND	ND	ND	271
Iron	**300**	**431000**	**1270**	**1050**	118	36	79	**1070**	**1340**	**1620**
Lead	**10**	**N/A**	ND	ND	ND	ND	ND	5.26	8.05	**42.8**
Magnesium	**NLE**	**62700**	3190	3900	3030	3120	2990	3200	3260	2930
Manganese	**50**	**331**	20.5	**73**	19.2	16.3	17.4	22.4	23.2	19.9
Mercury	**2**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	**100**	**187**	6.36	3.48	1.47	ND	ND	ND	2.69	7.64
Potassium	**NLE**	**137000**	5190	5330	5370	4720	4870	5290	5220	4570
Selenium	**50**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Silver	**2**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	**50000**	**21500**	3870	4830	3160	3890	3080	3600	3840	2060
Thallium	**10**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	**NLE**	**N/A**	ND	1.77	ND	ND	ND	ND	ND	1.35
Zinc	**5000**	**233**	56.5	82	73.7	23	16.4	44.1	79.4	405

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1] Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2] Low Flow Sampling Method used to collect sample.

[3] Laboratory blank greater than the GWQC.

[4] Laboratory blank greater than Method Detection Limit.

[5] Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW20 - NJDEP Well ID # 29-41780

Lab Sample ID	NJDEP	Site Specific	5199.08	5244.05	5430.08	5649.06[2]	5735.05[2]	5705.08	5861.08	374
Sample Date	Criteria	MBC[1]	02/25/00	03/14/00	05/23/00	08/22/00	09/21/00	09/12/00	11/17/00	01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	2.62	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	ND	47.1	ND	137	ND	121	65.6	ND
Antimony	20	N/A	ND	ND	ND	4.23	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	31.1	30.8	21.5	28.7	30.7	34	33.8	34.4
Beryllium	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	ND	ND	1.55	ND	ND	0.831	3.92	1.09
Calcium	NLE	45400	40100	39500	42900	42100	40400	43400	42900	38500
Chromium	100	N/A	ND	ND	2.23	ND	ND	ND	3.01	ND
Cobalt	NLE	N/A	ND	ND	ND	ND	1.46	ND	ND	ND
Copper	1000	65.6	5.68	ND	3.4	ND	ND	224	411	14.6
Iron	300	431000	**4620**	**2060**	**5140**	**1500**	**1250**	**6470**	**4130**	**5770**
Lead	10	N/A	ND	ND	ND	ND	ND	**37.1**	**55.9**	1.64
Magnesium	NLE	62700	3690	3440	3740	3750	3570	3810	3750	3460
Manganese	50	331	33.3	34	39	32.2	30.1	36.9	31.4	36.7
Mercury	2	N/A	ND	ND	0.2	ND	ND	ND	ND	ND
Nickel	100	187	ND	1.44	1.86	ND	ND	4.63	12.7	ND
Potassium	NLE	137000	5380	4930	5530	5270	5240	5680	5640	4940
Selenium	50	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	4530	2850	3910	4470	4130	4530	4130	3700
Thallium	10	N/A	ND	ND	ND	ND	6.74	ND	ND	ND
Vanadium	NLE	N/A	ND	1.24	ND	ND	0.723	ND	ND	ND
Zinc	5000	233	25	14.3	24.1	18.1	11.4	302	553	25.9

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW21 - NJDEP Well ID # 29-41781

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.09 02/25/00	5244.06 03/14/00	5430.09 05/23/00	5645.03[2] 08/21/00	5732.04[2] 09/20/00	5705.09 09/12/00	5861.09 11/17/00	373 01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	**300**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	**4**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	**700**	**N/A**	ND	ND	ND	NS	NS	ND	7.34	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	**30**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	**5000**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	**900**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	**400**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	1.94	ND
Naphthalene[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	**100**	**N/A**	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	**100**	**N/A**	ND	1.26	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	**200**	**121000**	ND	43.8	92.6	147	ND	38.7	39.2	ND
Antimony	**20**	**N/A**	ND	ND	4.14	3.04	ND	ND	ND	ND
Arsenic	**8**	**N/A**	ND	ND	ND	ND	ND	ND	**45.4**	ND
Barium	**2000**	**699**	48.7	62.4	35.1	38.1	36	36.3	42	80.3
Beryllium	**20**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	**4**	**N/A**	ND	ND	1.31	ND	ND	ND	ND	2.24
Calcium	**NLE**	**45400**	38400	36600	39200	38500	41600	39700	26600	34800
Chromium	**100**	**N/A**	ND	ND	5.19	ND	ND	ND	2.87	ND
Cobalt	**NLE**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Copper	**1000**	**65.6**	4.28	ND	193	289	ND	480	ND	ND
Iron	**300**	**431000**	**10800**	**11800**	**10100**	**4630**	**3040**	**5090**	**80400**	**18000**
Lead	**10**	**N/A**	ND	ND	**40.2**	**54.6**	ND	**82.9**	ND	ND
Magnesium	**NLE**	**62700**	3530	3310	3560	3710	3710	3700	5560	3420
Manganese	**50**	**331**	43	49	44	**178**	39.5	49.3	**321**	**59.1**
Mercury	**2**	**N/A**	ND	ND	ND	ND	0.22	ND	ND	ND
Nickel	**100**	**187**	ND	0.584	11.5	9.03	ND	13.2	ND	2.87
Potassium	**NLE**	**137000**	4620	4230	4720	4720	4920	4920	5710	4210
Selenium	**50**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Silver	**2**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	**50000**	**21500**	5980	3550	6370	5970	6570	6150	13300	5200
Thallium	**10**	**N/A**	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	**NLE**	**N/A**	ND	1.78	ND	ND	ND	ND	ND	ND
Zinc	**5000**	**233**	17.9	13.7	299	496	8.19	716	36.6	13.8

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW22 - NJDEP Well ID # 29-41782

Lab Sample ID	NJDEP	Site Specific	5199.10	5244.07	5430.10	5645.02[2]	5732.03[2]	5705.1	5861.1	372
Sample Date	Criteria	MBC[1]	02/25/00	03/14/00	05/23/00	08/21/00	09/20/00	09/12/00	11/17/00	01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	4.74	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	1.16	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	1.19	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	1.45	ND	ND	NS	NS	5.43	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	**748**	119	25.6	192	35.4	**1130**	52.7	ND
Antimony	20	N/A	ND	3.13	ND	ND	ND	ND	ND	ND
Arsenic	8	N/A	**10.1**	**22.8**	**30.7**	**52.9**	**21.6**	**34.8**	ND	**49.1**
Barium	2000	699	43.5	42.8	15.8	39.5	40.8	54.8	66.6	34.6
Beryllium	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	NLE	45400	28900	25100	26200	25000	25800	26900	40200	30900
Chromium	100	N/A	3.92	2.73	4.11	ND	ND	11.4	1.44	1.65
Cobalt	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	65.6	ND	ND	9.8	ND	ND	132	ND	ND
Iron	300	431000	**97100**	**90800**	**77600**	**88200**	**53600**	**87200**	**11900**	**124000**
Lead	10	N/A	ND	ND	ND	1.26	ND	**28.4**	ND	ND
Magnesium	NLE	62700	8340	7020	5850	5830	5690	7060	3760	8110
Manganese	50	331	**512**	**472**	**367**	**405**	**339**	**398**	**52.2**	**550**
Mercury	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	14	ND	3.56	ND	ND	2.09	ND	ND
Potassium	NLE	137000	4650	3790	4300	5510	5540	6410	5120	3010
Selenium	50	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	16300	10300	13300	16500	14300	15400	6460	2000
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	ND	2.7	1.72	ND	0.945	4.98	ND	ND
Zinc	5000	233	35.5	18.1	17.2	76	12.1	245	25.4	ND

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW23 - NJDEP Well ID # 29-41783

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.11 02/25/00	5244.08 03/14/00	5430.11 05/23/00	5649.02[2] 08/22/00	5732.05[2] 09/20/00	5705.11 09/12/00	5861.11 11/17/00	371 01/25/01
Round Number			12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	**900**	**406**	**333**	**7540**	**7200**	**6920**	**4910**	**3940**
Antimony	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	46.3	57	59.6	25.7	23.7	30.5	33.3	32.1
Beryllium	20	N/A	ND	ND	ND	2.15	2.04	2.23	1.52	0.819
Cadmium	4	N/A	1.64	1.18	1.48	1.46	1.89	1.95	1.86	3.02
Calcium	NLE	45400	8040	6710	6190	29200	31500	31400	23600	17900
Chromium	100	N/A	2.04	ND	1.96	ND	ND	ND	2.43	1.15
Cobalt	NLE	N/A	4.63	3.82	3.33	9.35	9.88	10.7	11	6.45
Copper	1000	65.6	321	9.3	ND	ND	ND	ND	ND	5.21
Iron	300	431000	**2010**	**1790**	**587**	**305**	146	**1050**	**595**	**410**
Lead	10	N/A	**28.4**	6.29	4.35	2.14	ND	ND	ND	1.7
Magnesium	NLE	62700	3980	3510	3330	6260	7020	6910	5310	4860
Manganese	50	331	**105**	**93.9**	**84.1**	**231**	**257**	**251**	**197**	**163**
Mercury	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	31.6	18.8	18.4	30.9	27	30.6	32.4	19.6
Potassium	NLE	137000	1370	1130	1260	3280	3160	3700	2730	1540
Selenium	50	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	8080	4770	7040	20100	23300	23400	15600	12700
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	ND	1.34	ND	ND	ND	0.752	ND	ND
Zinc	5000	233	563	214	171	475	168	216	207	149

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW24 - NJDEP Well ID # 29-41784

Lab Sample ID / Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.12 02/25/00	5244.09 03/14/00	5430.12 05/23/00	5649.03[2] 08/22/00	5735.06[2] 09/21/00	5705.12 09/12/00	5861.12 11/17/00	370 01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	**1010**	**872**	**565**	**1250**	**995**	**1350**	**1350**	**1170**
Antimony	20	N/A	ND	ND	ND	2.22	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	2.81	ND	4.72	ND	ND
Barium	2000	699	26.2	29	15.3	33.1	29.9	35.4	34.8	28.1
Beryllium	20	N/A	ND	ND	ND	ND	ND	0.62	ND	ND
Cadmium	4	N/A	ND	1.13	0.682	ND	0.572	ND	1.58	3.06
Calcium	NLE	45400	16800	14100	14800	17700	13400	16400	16200	14500
Chromium	100	N/A	1.79	ND	1.72	ND	ND	ND	6.87	1.95
Cobalt	NLE	N/A	5.51	6.02	4.86	6.47	6.41	6.53	6.66	5.87
Copper	1000	65.6	4.59	ND	4.34	ND	ND	ND	ND	5.98
Iron	300	431000	**1760**	**1390**	**1790**	**2210**	**347**	**3210**	**2050**	**1080**
Lead	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	NLE	62700	4090	3500	3040	4560	3460	4420	4070	3770
Manganese	50	331	**181**	**170**	**160**	**184**	**149**	**199**	**176**	**164**
Mercury	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	187	10	10.5	11.2	7.99	1.43	4.55	12.1	6.96
Potassium	NLE	137000	3520	2900	3630	4390	3850	4810	4270	3110
Selenium	50	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	20200	12000	13400	24900	21100	26400	21100	18800
Thallium	10	N/A	ND	ND	ND	ND	5.65	ND	ND	ND
Vanadium	NLE	N/A	ND	2.22	ND	ND	ND	ND	ND	ND
Zinc	5000	233	78.1	92.8	73.8	177	66.7	94.4	88.8	51

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW25 - NJDEP Well ID # 29-41785

Lab Sample ID Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.13 02/25/00	5244.10 03/14/00	5430.13 05/23/00	5649.05[2] 08/22/00	5735.04[2] 09/21/00	5705.13 09/12/00	5861.13 11/17/00	369 01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	3.83	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	1.69	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	1.48	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	2.38	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	42.3	69.1	ND	**216**	ND	38.2	19.5	ND
Antimony	20	N/A	ND	ND	ND	2.78	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	34.2	23.6	4.49	19.2	19.4	47.4	29.9	23.8
Beryllium	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	ND	ND	ND	ND	ND	ND	1.67	1.92
Calcium	NLE	45400	64100	51100	49100	48700	46100	66200	58300	53200
Chromium	100	N/A	2.05	0.774	1.47	ND	ND	ND	1.95	0.56
Cobalt	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	65.6	ND	ND	ND	ND	ND	ND	ND	13.6
Iron	300	431000	**889**	**317**	186	157	71	**501**	267	**372**
Lead	10	N/A	ND	ND	ND	1.12	ND	4.31	3.69	ND
Magnesium	NLE	62700	12300	5110	4170	4110	3820	14800	6950	5370
Manganese	50	331	**54.5**	29.4	25.2	19.3	18.8	**58.3**	31.4	27
Mercury	2	N/A	ND	ND	0.2	ND	ND	ND	ND	ND
Nickel	100	187	ND	1.78	0.685	ND	ND	ND	ND	ND
Potassium	NLE	137000	8060	5590	5520	5340	5370	9400	6500	5750
Selenium	50	N/A	3.51	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	**84600**	16000	9730	5730	5630	**107000**	36700	24600
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5000	233	8.85	14.1	19.4	13.1	21.7	138	49.2	14.9

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-1
Groundwater Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Monitoring Well M12MW26 - NJDEP Well ID # 29-41786

Lab Sample ID Sample Date	NJDEP Criteria	Site Specific MBC[1]	5199.14 02/25/00	5244.11 03/14/00	5430.14 05/23/00	5645.04[2] 08/21/00	5732.06[2] 09/20/00	5705.14 09/12/00	5861.14 11/17/00	368 01/25/01
		Round Number	12	13	14	Low-Flow #1	Low-Flow #2	15	16	17
Volatiles										
2-Butanone	300	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Chlorobenzene	4	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acetone	700	N/A	ND	ND	ND	NS	NS	ND	6.48	ND
Semi-Volatiles										
bis(2-Ethylhexyl)phthalate	30	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Diethylphthalate	5000	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Di-n-butylphthalate	900	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthene	400	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Acenaphthylene	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
4-Methylphenol[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Naphthalene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Phenanthrene[5]	100	N/A	ND	ND	ND	NS	NS	ND	ND	ND
Butylbenzylphthalate	100	N/A	ND	1.62	ND	NS	NS	ND	ND	ND
Pesticides/PCBs			ND	ND	ND	NS	NS	ND	ND	ND
Metals										
Aluminum	200	121000	**1250**	**321**	**510**	**2230**	**1140**	**2110**	**857**	**373**
Antimony	20	N/A	ND	ND	ND	3.78	ND	ND	ND	ND
Arsenic	8	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	699	45.4	30.1	72	43.5	42.2	49	55.3	50.4
Beryllium	20	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	N/A	0.826	0.817	ND	0.795	ND	2.15	ND	2.46
Calcium	NLE	45400	33400	28200	36600	36800	38200	39300	40600	21900
Chromium	100	N/A	7.76	3.19	4.64	ND	2.17	2.75	7.99	2.18
Cobalt	NLE	N/A	0.683	1.2	ND	ND	1.01	1.81	ND	1.34
Copper	1000	65.6	7.84	4.47	ND	385	9.42	ND	37.2	18
Iron	300	431000	**19600**	**3970**	**21500**	**9390**	**9640**	**8830**	**10900**	**12300**
Lead	10	N/A	ND	ND	ND	**70.8**	ND	5.75	**14**	ND
Magnesium	NLE	62700	3850	2890	3590	4010	4130	4370	4400	2420
Manganese	50	331	49.4	44	**52.3**	**50.1**	**56.9**	**56.2**	**71.5**	46.4
Mercury	2	N/A	ND	0.1	ND	ND	ND	ND	ND	ND
Nickel	100	187	3.25	5.94	1.96	12.2	ND	ND	4.34	2.2
Potassium	NLE	137000	5220	4180	4910	5250	5480	6090	5560	3630
Selenium	50	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Silver	2	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	21500	6140	3110	3940	4480	4420	5840	4990	7910
Thallium	10	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	N/A	6.29	2.53	3.07	2.85	6.65	8.8	3.67	1.53
Zinc	5000	233	113	63.5	17.5	598	44.7	128	144	65.4

Notes

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP Criteria: Higher of Practical Quantitation Limits (PQLs) & Groundwater Quality Criteria (GWQC).

Exceedences of NJDEP GWQS are shaded and **bold.**

ND: Analyte not detected in sample.

N/A: Not Applicable. NS: Not Sampled.

NLE: No cleanup standard exists for this analyte.

[1]Fort Monmouth Site-specific Groundwater Background Concentrations (MBCs), native metals only.

[2]Low Flow Sampling Method used to collect sample.

[3]Laboratory blank greater than the GWQC.

[4]Laboratory blank greater than Method Detection Limit.

[5]Compound with an interim NJDEP Criteria

Table 5-2
Stream Sampling Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Stream Sampling Location - Site #9

Lab Sample ID	NJDEP SWQS	2178.09	2223.04	2246.04	2298.04	2361.04	2375.04	2439.04	2810.04	3121.04	3331.04	3499.04	3816.04	4060.06	4300.04	4579.06	4802.06	4997.07	5211.07	5468.07	5658.07	5868.07	957
Sample Date	(ug/L)	10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998	8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	2/21/2001
Round Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Acetone	NLE	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.50	ND	25.08	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	NA	6.52	2.04	4.06	2.78	ND	2.14	6.00	4.73	1.69	ND	1.78	ND	1.91	ND	2.17	ND	1.11	ND	1.72
Methylene chloride	2.49	**3.79 B**	**3.17 B**	**2.82**	1.34	ND	ND	1.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	0.39	ND	0.20	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	1.09	0.24	0.49	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Stream Sampling Location - Site #11

Lab Sample ID	NJDEP SWQS	2178.11	2223.08	2246.08	2298.08	2361.08	2375.08	2439.08	2810.08	3121.08	3331.08	3499.08	3816.08	4060.05	4300.08	4579.10	4802.10	4997.18	5211.18	5468.11	5658.11	5868.11	961
Sample Date	(ug/L)	10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998	8/19/1998	11/18/1998	2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	2/21/2001
Round Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Acetone	NLE	NA	NA	NA	4.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.15	ND	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	NA	27.37	17.06	18.48	18.72	14.13	18.23	24.71	21.66	11.73	8.82	9.11	5.77	15.62	11.90	11.01	8.03	9.08	5.34	8.26
Ethylbenzene	3030	ND	ND	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2.49	**3.71 B**	**2.91 B**	**3.45**	**2.71**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.64	ND	ND	ND	ND
Tetrachloroethene (PCE)	0.39	0.12	**0.49**	**0.60**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	7440	ND	ND	0.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	1.09	**1.76**	**2.11**	**2.75**	**2.07**	**1.22**	**1.26**	**1.58**	ND	ND	**2.14**	**1.82**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.08	**1.21**	ND	ND	**1.71**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (Total)	NLE	ND	ND	0.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Stream Sampling Location - Site #19

Lab Sample ID	NJDEP SWQS	2223.05	2246.05	2298.05	2361.05	2375.05	2439.05	2810.05	3121.05	3331.05	3499.05	3816.05	4060.07	4300.05	4579.07	4802.07	4997.08	5211.08	5468.08	5658.08	5868.08	958
Sample Date	(ug/L)	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998	8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	2/21/2001
Round Number		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Carbon Disulfide	NLE	NA	NA	ND	3.66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	9.70	2.77	4.14	6.44	ND	4.69	8.22	6.86	2.95	2.30	2.30	ND	3.53	2.60	2.92	ND	2.07	ND	2.99
Methylene chloride	2.49	**3.21 B**	**3.83**	2.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene (PCE)	0.39	0.25	0.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene (TCE)	1.09	0.97	1.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
Only detected compounds are listed.
All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
Exceedences of the NJDEP Surface Water Quality Standards (SWQS) are highlighted and printed in **bold-faced** type.
NA: Sample not analyzed for this parameter
ND: Analyte not detected in sample
B: Found in the Blank
NLE: No regulatory limit has been established for this parameter

Table 5-3
Determination of Contaminants of Concern
M-12 Landfill Site
Fort Monmouth, New Jersey

Analyte	NJDEP Cleanup Criteria[1]	Site Specific Groundwater MBC[2]	Maximum Result	No. of NJDEP Criteria Exceedences	No. of Site Maximum Background Exceedences	Comments
Volatiles						
2-Butanone	**300**	N/A	2.83	None	N/A	No exceedance of NJDEP criteria
Chlorobenzene	**4**	N/A	1.54	None	N/A	No exceedance of NJDEP criteria
Acetone	**700**	N/A	11.08	None	N/A	No exceedance of NJDEP criteria
Semi-Volatiles						
bis(2-Ethylhexyl)phthalate	**30**	N/A	20.1	None	N/A	No exceedance of NJDEP criteria
Diethylphthalate	**5000**	N/A	1.91	None	N/A	No exceedance of NJDEP criteria
Di-n-butylphthalate	**900**	N/A	11.17	None	N/A	No exceedance of NJDEP criteria
Acenaphthene	**400**	N/A	1.16	None	N/A	No exceedance of NJDEP criteria
Acenaphthylene	**NLE**	N/A	1.19	None	N/A	No exceedance of NJDEP criteria
Naphthalene	**NLE**	N/A	1.69	None	N/A	No exceedance of NJDEP criteria
Phenanthrene	**NLE**	N/A	5.43	None	N/A	No exceedance of NJDEP criteria
Butylbenzylphthalate	**100**	N/A	2.62	None	N/A	No exceedance of NJDEP criteria
Pesticides/PCBs						
None Detected						
Metals						
Aluminum	**200**	121000	7540	44	None	Does not exceed Site-specific MBC.
Antimony	**20**	N/A	11	None	N/A	No exceedance of NJDEP criteria
Arsenic	**8**	N/A	52.9	18	N/A	**Contaminant of Concern**
Barium	**2000**	699	363	None	None	No exceedance of NJDEP criteria
Beryllium	**20**	N/A	2.23	None	N/A	No exceedance of NJDEP criteria
Cadmium	**4**	N/A	19.4	1	N/A	Only one exceedence of NJDEP Cleanup Criteria.
Calcium	**NLE**	45400	66200	None	22	No exceedance of NJDEP criteria
Chromium	**100**	N/A	19.2	None	N/A	No exceedance of NJDEP criteria
Cobalt	**NLE**	N/A	20	None	N/A	No exceedance of NJDEP criteria
Copper	**1000**	65.6	488	None	16	No exceedance of NJDEP criteria
Iron	**300**	431000	97100	81	None	Does not exceed Site-specific MBC.
Lead	**10**	N/A	82.9	9	N/A	**Contaminant of Concern**
Magnesium	**NLE**	62700	14800	None	None	No exceedance of NJDEP criteria

Table 5-3
Determination of Contaminants of Concern
M-12 Landfill Site
Fort Monmouth, New Jersey

Analyte	NJDEP Cleanup Criteria[1]	Site Specific Groundwater MBC[2]	Maximum Result	No. of NJDEP Criteria Exceedences	No. of Site Maximum Background Exceedences	Comments
Manganese	**50**	331	5440	48	10	Manganese is not of concern because it is a background metal.
Mercury	**2**	N/A	0.8	None	N/A	No exceedance of NJDEP criteria
Nickel	**100**	187	31.6	None	None	No exceedance of NJDEP criteria
Potassium	**NLE**	137000	9400	None	None	No exceedance of NJDEP criteria
Selenium	**50**	N/A	4.86	None	N/A	No exceedance of NJDEP criteria
Silver	**2**	N/A	60	8	8	No exceedance of NJDEP criteria since October 1999.
Sodium	**50000**	21500	107000	2	2	Sodium is not of concern due to proximity of site to seawater.
Thallium	**10**	N/A	6.74	None	N/A	No exceedance of NJDEP criteria
Vanadium	**NLE**	N/A	8.8	None	N/A	No exceedance of NJDEP criteria
Zinc	**5000**	233	716	None		No exceedance of NJDEP criteria

Notes:

Contaminants of Concern were determined from groundwater quality data shown in Table 5-1.

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.

N/A = Not Applicable

Exceeds NJDEP GWQC =

ND: Analyte not detected in sample

NLE: No limit established for this analyte

[1]Higher of Practical Quantitation Limits (PQLs) and Groundwater Quality Criteria (GWQC) per N.J.A.C. 7:9-6

[2]Fort Monmouth Summary of Site-specific Groundwater Maximum Background Concentrations (MBC);
MBCs are shown for background (native) metals only.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW22-A				MW22-B					
Lab Sample ID		1225	1226	1227	1228	1229	1230	1231	1232	1233	1234
Depth		0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"	48-54"	60-66"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	**32.47**	**75.39**	ND	ND	15.68	**76.56**	**53.98**	ND	ND	ND
Lead	400	2.59	9.9	7.88	5.58	10.14	12.07	11.63	7.55	14.3	19.22

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW22-C				MW22-D				MW22-E			
Lab Sample ID		1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246
Depth		0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	11.51	ND	11.19	11	**49.64**	ND	ND	ND	19.15	ND	ND	ND
Lead	400	9.95	24.72	10.35	27.41	41.04	10.21	4.51	1.85	35.16	11.01	6.3	6.88

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW22-F			MW16-A				MW16-B			
Lab Sample ID		1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257
Depth		0-6"	12-18"	24-30"	0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	ND	ND	**466.74**	**26.13**	7.48	ND	ND	**43.65**	**31.4**	5.05	ND
Lead	400	9.09	8.15	10.9	10.45	8.97	2.45	5.76	13.29	7.17	3.03	1.76

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW16-C				MW16-D				MW16-E			
Lab Sample ID		1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269
Depth		0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	16.73	ND	6.21	ND	**46.91**	**38.3**	ND	ND	**79.42**	ND	ND	ND
Lead	400	4.89	3.01	4.1	1.65	8.25	7.64	7.17	0.49	7.99	2.95	4.21	3.2

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW16-F				MW16-G				MW16-H			
Lab Sample ID		1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281
Depth		0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"	0-6"	12-18"	24-30"	36-42"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	7.43	ND	**96.33**	ND	**20.4**	13.15	**24.01**	ND	ND	ND	ND	ND
Lead	400	7.07	4.73	3.25	3.59	7.69	9.8	3.67	4.07	3.65	2.26	10.17	6.78

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 5-4
Soil Sample Results from Geoprobe Investigation
March 2001
M-12 Landfill Site
Fort Monmouth, New Jersey

Location	NJDEP RDCSCC* (mg/Kg)	MW16-I			
Lab Sample ID		1282	1283	1284	1285
Depth		0-6"	12-18"	24-30"	36-42"
Sample Date		03/03/01	03/03/01	03/03/01	03/03/01
Arsenic	20	ND	ND	ND	ND
Lead	400	2.67	2.77	1.72	2.15

NOTES:

* New Jersey Department of Environmental Protection (NJDEP)
Residential Direct Contact Soil Cleanup Criteria (RDCSCC).

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Table 6-1
Model Input Parameters
M-12 Landfill Site
Fort Monmouth, New Jersey

Software used for Modelling
Waterloo Hydrogeologic *Visual Modflow Version 2.7.2*
Golden Software, Inc. *Surfer for WindowsVersion 6*
Papadopulos & Associates, Inc. *MT3D 96*

Grid			
Model Area:	Min	Max	Range
X (Easting, NJ Nad 83):	618800	622700	3900
Y (Northing, NJ Nad 83):	537900	540300	2400
Number of Columns:	211		
Number of Rows:	135		
Default Grid Size:	20' x 20'		
Grid Size near M12MW22 and M12 MW16:	10' x 10'		

Units used in model	
Length	feet
Time	day
Hydraulic Conductivity	Feet per day (ft/day)
Recharge	Inches per year (in./year)
Concentration	Micrograms per Liter (ug/L), equivalent to Parts Per Billion (ppb)
Mass	kg
Volume	ft^3

Ground Surface
The ground surface elevations were obtained from the Fort Monmouth Nad83 topographic survey.
The river was assigned to elevation of zero (0) ft.
The ground surface used in the model was interpolated from elevation points using Golden Software Surfer.

Table 6-1
Model Input Parameters
M-12 Landfill Site
Fort Monmouth, New Jersey

Layer properties			
Number of Layers:	5		
Layer Number	Formation	Thickness	Porosity*
Layer 1	Fill	5 ft	0.40
Layer 2	Navesink-Hornerstown Confining Unit	15 ft	0.40
Layer 3	Navesink-Hornerstown Confining Unit	110 ft	0.40
Layer 4	Wenonah-Mount Laurel Aquifer	75 ft	0.40
Layer 5	Marshalltown-Wenonah Confining Unit	10 ft	0.40
**Porosity estimated from Dominico and Schwartz (1998), Table 2.1.*			

Recharge	
Majority of Area:	13.28 in. / year
Selected Area:	0 in./year in paved area south of M-12 site
Recharge applied to:	Highest Active Cells
Source:	Jablonski, 1968, Ground-Water Resources of Monmouth County, New Jersey, USGS Special Report No. 23. *The recharge used for the model was taken to be the sum of the groundwater base flow and water utilization.*

River (Boundary Condition)	
Location:	a) The Husky Brook was assigned as a "river" in the area shown on the Fort Monmouth Base Map near the M-12 site. b) The Husky Brook lake was assigned as a "river" at the location shown on the Fort Monmouth Base Map. c) The Husky Brook was extended to the Husky Brook Lake.
Stage Elevation:	0 ft
Elevation of River Bottom:	-1 ft
Conductance:	1600 ft^2/day

Table 6-1
Model Input Parameters
M-12 Landfill Site
Fort Monmouth, New Jersey

Hydraulic Conductivity (K)		
The geometric means were used for the layers specified below:		
Fill:	*From Slug tests conducted February 6-7, 2001.*	
(Layer 1)	Well	K
	M12MW16	0.589
	M12MW17	208
	M12MW18	1.2
	M12MW19	40.7
	M12MW20	2.35
	M12MW21	3.69
	M12MW22	0.796
	M12MW23	97.8
	M12MW24	3.34
	M12MW25	10.8
	M12MW26	0.0899
Geometric Mean:		**4.4**
Navesink-Hornerstown		*From Martin (1998)*
Confining Unit:		2
(Layers 2 and 3)		5.00E-04
		1.30E-01
		9
		3.00E-03
		2.00E-02
		8.00E-02
		6.70E-01
		4
		5.60E-02
Geometric Mean:		**0.12**

Hydraulic Conductivity (K) (Continued)	
Wenonah Formation:	*From Martin (1998)*
(Layer 4)	17
	13
	19
	13
	19
Geometric Mean:	**15.964987**
Marshaltown Wenonah	*From Martin (1998)*
Confining Unit:	2.60E-04
(Layer 5)	1.30E-01
	4.90E-04
	5.70E-06
	2.40E-05
	1.50E-05
Geometric Mean:	**0.00018**
Source:	Martin, Mary, 1998, Groundwater Flow in the New Jersey Coastal Plain, USGS Professional Paper 1404-H.

Table 6-1
Model Input Parameters
M-12 Landfill Site
Fort Monmouth, New Jersey

Contaminant Transport Inputs

Dispersivity: 24.3 ft

Source for dispersivity: Gelhar and Others, Water Resources, v. 28, p. 1955-1974,
The dispersivity used is the geometric mean of the upper and lower results from 109 dispersivity tests worldwide.

Bulk Density: 46.7 kg/ft3

Sorption type: Linear Isotherm

Dispersivity: 0.2

Sorption Constants Used in Model (Kd):

Source	COC	Kd (ml/g)	Kd (ft3/kg)	**Calculated Rd**
(1)	Arsenic	2.90E+01	1.02E+00	**74**
(2)	Lead	890	3.14E+01	**2,205**

Sources:

(1)United States Environmental Protection Agency (USEPA). 1996.
Soil Screening Guidance: Technical Background Document.
Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/R-95/128.
Note: Kd for arsenic used for aquifer pH of 6.8.

(2) Pennsylvania Department of Environmental Protection (PADEP)
Manual Appendix A Table 5B , http://www.dep.state.pa.us/dep/subject/eqb/2000/jun20/Table5b.pdf

Table 6-1
Model Input Parameters
M-12 Landfill Site
Fort Monmouth, New Jersey

Contaminant Transport Inputs (Continued):

Method for Determining Inititial Concentrations for each Contaminant of Concern:

Contaminant of Concern	NJDEP Cleanup Criteria[(1)]	Average Detection	Maximum Result	Wells with Number of Exceedances	Methods for Determining Initial Concentrations
Arsenic	8	19.1	52.9	M12-MW26 [14] M12-MW22 [6]	1) The area surrounding well M12-MW16 was assigned the initial concentration of 17.5 ug/L. 2) The area surrounding well M12-MW22 was assigned the initial concentration of 28.8 ug/L. 3) The remainder of the site was assigned an initial concentration of zero (0 ug/L).
Lead	10	19.3	82.9	M12-MW17 [1] M12-MW18 [1] M12-MW20 [1] M12-MW21 [3] M12-MW22 [1] M12-MW23 [1] M12-MW26 [1]	1) The area surrounding well M12-MW21 was assigned the initial concentration of 29.9 ug/L. 2) The remainder of the site was assigned an initial concentration of zero (0 ug/L).

Notes:

[(1)]Higher of Practical Quantitation Limits (PQLs) and Groundwater Quality Criteria (GWQC) per N.J.A.C. 7:9-6

[(2)]There were 16 rounds of groundwater sampling conducted at M12-MW16 and 6 rounds of sampling conducted at M12-MW22.

All concentrations in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

Table 6-2
Model Results
M-12 Landfill Site
Fort Monmouth, New Jersey

Contaminant of Concern	NJDEP Criteria (ug/L)[(1)]	Well used for Calculation	Change of Concentration (ug/L) per year	**Estimated Time for Compliance (Years)**
Arsenic	8	M12MW16	0.096	**99**
		M12MW22	0.139	**150**
Lead	10	M12MW21	<0.02	**>1,000**

Notes:

[(1)]Higher of Practical Quantitation Limits (PQLs) and Groundwater Quality Criteria (GWQC) per N.J.A.C. 7:9-6

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Permit No.	Well Owner	Use	Permit Date	Driller	NJ Grid No.	Depth (ft)	Capacity	Lattitude	Longitude	Address	Driller Name
2901016	Redacted - Privacy Act	D	12/24/1953	GREH	2913691	150	15	401839	740240		
2901308		D	12/3/1954	BORD	2913684	46	3	401828	740319		
2901788		D	11/30/1955	APTI	2913653	60	12	401920	740253		
2902505		D	10/10/1957	TICE	2913665	100	10	401906	740226		
2902774		D	9/22/1958	TICE	2913638	124	50	401933	740226		
2902919	ESSOSTANDARDOILCO	I	5/11/1959	TIOE	2913656	110	12	401906	740253		
2903015	Redacted - Privacy Act	G	8/20/1959	TIOE	2914454	60	50	401906	740119		
2903369		D	8/8/1960	OSBH	2913639	100	6	101933	740213		
2904271		D	2/13/1964	TICE	2913639	60	10	401933	740213		
2904513	RUMSONCOUNTRYCLUB	D	10/16/1964	LAUM	2914446	350	600	401906	740133		
2904513	RUMSONCOUNTRYCLUB	D	10/16/1964	LAUM	2914446	350	600	401906	740133		
2904782	Redacted - Privacy Act	D	8/5/1965	PETE	2913691	50	12	401839	740240		
2905009		D	3/21/1966	TICE	2911457	70	15	401853	740119		
2905052		D	5/2/1966	TICE	2913837	60	12	401933	740240		
2905609		D	10/7/1968	PETE	2913655	50	7	401906	740306		
2905673	P.V.C.CONTAINERCRP	D	1/22/1969	TICE	2913692	100	35	401839	740226		
2906510	Redacted - Privacy Act	D	6/7/1972	KAYE	2914471	50	10	401839	740200		
2907110		D	7/24/1973	KAYE	2913652	40	50	401920	740306		
2908438		D	8/3/1976	BAIN	2914447	60	10	401853	740200		
2908652		D	1/18/1977	BILL	2913923	60	10	401800	740253		
2908810		D	5/12/1977	AMER	2914472	50	5	401839	740116		
2911063	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	401906	740213		
2911064	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	401906	740213		
2911065	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	401906	740213		
2911066	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	101906	740213		
2911067	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	101906	740213		
2911068	FORTMONMOUTH/USARM	M	3/31/1981	HAND	2913666	25	0	401906	740213		
2911479	Redacted - Privacy Act	D	8/18/1981	PICK	2913923	60	15	401800	740253		
2911771		H	12/22/1981	ENGI	2913653	100	0	401920	740253		
2911772		H	12/22/1981	ENGI	2913664	100	10	401906	740240		
2912553	SHELLOILCOMPANY	M	1/21/1983	HAND	2914447	25	0	401846	740152		
2912554	SHELLOILCOMPANY	M	1/21/1983	HAND	2914447	25	0	101846	740152		
2912555	SHELLOILCOMPANY	M	1/21/1983	HAND	2914447	25	0	401846	740152		
2912598	Redacted - Privacy Act	R	2/1/1983	AQUA	2914473	80	12	401832	740126		
2913181		D	9/12/1983	PICK	2913697	80	12	401806	740232		
2913825	N.J.TRANSITCORP	M	6/20/1985	GEOR	2914474	35	0	101819	740152		

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

2914157	Redacted - Privacy Act	D	9/15/1984	AJWD	2914448	60	8	401846	740139		
2914244		D	10/5/1984	PETE	2913695	120	10	101819	740219		
2914980		R	5/5/1985	AJWD	2913653	200	8	401912	740246		
2915008	MODERATEINCOMEMANA	G	5/5/1985	PICK	2913689	200	40	401806	740246		
2915836	Redacted - Privacy Act	D	12/10/1985	PICK	2913697	70	15	401806	740232		
2917404		D	10/21/1986	TIGE	2913689	100	10	401806	740246		
2917918	JVDENGINEERINGINC.	B	2/9/1987	GILE	2913629	20	0	401926	740246		
2917919	JVDENGINEERINGINC.	B	2/9/1987	GIEE	2913629	20	0	101926	740246		
2919474	Redacted - Privacy Act	D	10/26/1987	PICK	2914443	200	15	401920	740133		
2919669		M	12/4/1987	ENDW	2913637	20	0	401933	740240		
2919670		M	12/4/1987	ENDW	2913637	20	0	401933	740240		
2919671		M	12/4/1987	ENDW	2913637	20	0	401933	740240		
2919672		M	12/4/1967	ENDW	2913637	20	0	401933	740240		
2919673		M	12/4/1987	ENDW	2913637	20	0	401933	740240		
2921172		G	9/1/1988	TIGE	2913658	200	15	401853	740306		
2921780		G	11/10/1988	ENDR	2914449	190	20	401853	740133		
2922549	BRIDGEWATERTOWNHOUS	G	4/12/1989	TIGE	2914473	180	25	401839	740133	57BRIDGEWATERDRIVE	DENNISBUCHAI
2922571	Redacted - Privacy Act	G	4/14/1969	KAYE	2913653	60	10	401920	740253	TRAFZLOARPLACE	POPPE.GARY
2923608		D	10/18/1989	RAYS	2913638	200	12	401933	740226	92SUNNYBANKDRIVE	PETERS.RAYM(
2923677	USARMY	M	11/3/1989	MYBL	2913665	30	0	401906	740226	SALTZMANAVENUE	MYERS.GREGO
2923678	USARMY	M	11/3/1989	MYBL	2913665	30	0	401906	740226	SALTZMANAVENUE	MYERS~.GREGO
2923679	USARMY	M	11/3/1989	MYBL	2913665	30	0	401906	740226	SALTZMANAVENUE	MYERS..GREGO~
2923680	USARMY	M	11/3/1989	MYBL	2913665	30	0	401906	740226	SALTZMANAVENUE	MYERS,GREGOZ
2923690	Redacted - Privacy Act	D	11/2/1989	PICK	2913689	69	15	401813	740253	ORCHARDSTREET	PRIMOST.ALLEN
2924138	E~ONCOMPANYUSA	M	1/11/1990	KULL	2913637	40	0	401933	740240	BRANCHAVNUE	KUELANTHONY--
2924139	EXXONCOMPANYUSA	M	1/11/1990	KULL	2913637	40	0	401933	740240	BRANCHAVNUE	KULLANTHONY
2924140	EXXONCOMPANYUSA	M	1/11/1990	KULL	2913637	40	0	401933	740240	BRANCHAVNUE	KULLANTHONY
2924141	EXXONCOMPANYUSA	M	1/11/1990	KULL	2913637	40	0	401933	740240	BRANCHAVNUE	KULL~.ANTHONY
2924639	USARMY	M	4/27/1990	MYBL	2913665	30	0	401906	740226	176RIVERSIDEDRIVE	MYERS.GREGO
2924640	USARMY	M	4/27/1990	MYBL	2913665	30	0	401906	740226	176RIVERSIDEDRIVE	MYERS.GREGQ
2924953	SHELLOILCORP.	M	6/27/1990	~AVL	2914447	10	0	401853	740200	P.O.BOX1703	KAVLUNAS,MIC
2924954	SHELLOILCORP.	M	6/27/1990	AVL	2911447	10	0	401853	740200	P.O.BOX1703	KAVLUNAS.MICH~
2924955	SHELLOILCORP.	M	6/27/1990	~AVL	2914447	10	0	101853	740200	P.O.BOX1703	KAVLUNAS.MICH
2924956	SHELLOILCORP.	M	6/27/1990	AVL	2914447	10	0	401853	740200	P.O.BOX1703	KAVLUNAS.MICH
2925357	Redacted - Privacy Act	M	10/12/1990	~/IES	2913693	20	0	401839	740213	HIGHTEC	ECCLESTON.RN
2925453	CONCURRENTCOMPUTER	M	11/7/1990	~MPI	2914454	15	0	401906	740119	2CRESCENTPLACE	KURZYNOWSKI,~
2925454	CONCURRENTCOMPUTER	M	11/7/1990	EMPI	2914454	15	0	401906	740119	2CRESCENTPLACE	KURZYNOWSKI.I'
2925455	CONCURRENTCOMPUTER	M	11/7/1990	~MPI	2914454	15	0	401906	740119	2CRESCENTPLACE	KURZYNOWSKI.14

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

2925456	CONCURRENTCOMPUTER	M	11/7/1990	EMPI	2914454	15	0	101906	740119	2CRESCENTPLACE	KURZYNOWSKI.
2925457	CONCURRENTCOMPUTER	M	11/7/1990	IMPI	2914454	15	0	401906	740119	2CRESCENTPLACE	KURZYNOWSKI.
2926704	Redacted - Privacy Act	D	6/8/1991	~AYE	2913653	230	15	401920	740253	83SUNNYBROOKDRIVE	POPPE.GARY
2926926	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926926	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926927	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926929	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926930	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926931	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926936	U.S.ARMYFORTMONMO	M	9/25/1991	ABA	2914441	20	0	401920	740200	BLDG167	HITZELBERGER
2926939	U.S.ARMYFORTMONMO	M	9/25/1991	ABA	2914441	20	0	401920	740200	BLDG167	HITZELBERGER
2926940	U.S.ARMYFORTMONMO	M	9/25/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926941	U.S.ARMYFORTMONMO	M	9/25/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2926942	U.S.ARMYFORTMONMO	M	9/25/1991	TABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGERI
2927072	EXXONCO.USA	M	10/24/1991	LUTZ	2913637	25	0	401933	740240	BRANCHAVNUE	LAURAMARK
2927073	EXXONCO.USA	M	10/24/1991	LUTZ	2913637	25	0	401933	740240	BRANCHAVNUE	LAURAMARK
2928031	USARMY	E	5/14/1992	TABA	2914444	20	25	401906	740200	EVANSAREABLDG	SHINN.WILLIAM
2928144	EX~<ONCO.USA	E	6/4/1992	LUTZ	2913637	20	25	401933	740240	SYCAMORE&BRANCH	WESTOVERTI~
2928648	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928649	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928650	BENDERSONDEVELOPMEN	M	8/27/1992	GR~~H	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928651	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT?JOHN
2928652	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928653	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928654	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT,JOHN
2928669	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928670	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928671	HENDERSONDEVELOPMEN	M	8/27/1992	GRAH	2914711	20	0	401800	740200	ROUTE36	VOGT.JOHN
2928907	U.S.ARMYFORTMONMO	M	10/13/1992	TABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2928925	U.S.ARMYFORTMONMO	M	9/24/1991	ABA	2914444	20	0	401906	740200	BLDG167	HITZELBERGER
2928992	U.S.ARMY	M	10/27/1992	OARS	2914441	20	0	401920	740200	513MOTORPOOL	BRITTON.CLAU[~
2928993	U.S.ARMY	M	10/27/1992	GARS	2914441	20	0	401920	740200	513MOTORPOOL	BRITTON.CLAU[1
2928994	U.S.ARMY	M	10/27/1992	GARS	2914441	20	0	401920	740200	513MOTORPOOL	BRITTON.CLAU[
2928995	U.S.ARMY	M	10/27/1992	GARS	2914441	20	0	401920	740200	513MOTORPOOL	BRITTON.CLAU[I
2929422	Redacted - Privacy Act	M	3/23/1993	COLN	2913923	100	10	401800	740253	...	VANBRUNT.DA~
2929627	GETTYPETROLEUMCORP	M	5/4/1993	TYRE	2913681	15	0	401839	740319	86DOREMUSAVENUE	BECK.MICHAEL
2929628	GETTYPETROLEUMCORP	M	5/4/1993	TYRE	2913681	15	0	401839	740319	157BROADSTREET	BECK.MICHAEL
2929629	GETTYPETROLEUMCORP	M	5/4/1993	TYPE	2913681	15	0	401839	740319	157BROADSTREET	BECK.MICHAEL

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

2929739	USARMY-FT.MONMOU	M	6/3/1993	DRCT	2914442	20	0	401920	740146	BLDG108	HESSE.ROBER
2929740	USARMY-FT.MONMOU	M	6/3/1993	DRCT	2914442	20	0	401920	740146	BLDG108	HESSE,ROBER
2929741	USARMY-FT.MONMOU	M	6/3/1993	DRCT	2914442	20	0	401920	740146	BLDG108	HESSE.ROBER
2930388	Redacted - Privacy Act	G	11/1/1993	PARE	2913683	20	10	401839	740253	126S.PEMBERTONAVENUE	PARENT,GARY
2930957	USARMYFORTMONMOU	M	4/5/1994	TYPE	2914444	15	0	401906	740200	...	BECK.MICHAEL
2930961	USARMYFORTMONMOU	M	4/5/1994	TYRE	2913667	15	0	401853	740240	...	BECK.MICHAEL
2930962	USARMYFORTMONMOU	M	4/5/1994	TYPE	2914444	15	0	401906	740200	...	BECK.MICHAEL
2930963	USARMYFORTMONMOU	M	4/5/1994	TYPE	2914444	15	0	401906	740200	...	BECK.MICHAEL
2930964	USARMYFORTMONMOU	M	4/5/1994	TYPE	2914444	15	0	401906	740200	...	BECK.MICHAEL
2930965	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913655	15	0	401906	740306	...	BECK.MICHAELII
2930966	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913658	15	0	401906	740253	...	BECK.MICHAEL~
2930967	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913656	15	0	401906	740253	...	BECK.MICHAEL
2930968	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913658	15	0	401906	740253	...	BECK.MICHAEL
2930973	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913664	15	U	401906	740240	...	BECK.MICHAEL
2930974	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913664	15	0	401906	740240	...	BECK.MICHAEL)
2930975	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913661	15	0	401920	740240	...	BECK.MICHAEL.
2930976	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913861	15	0	401920	740240	...	BECK.MICHAEL
2930979	USARMYFORTMONMOU	M	4/5/1994	TYPE	2913656	15	0	401906	740253	...	BECK.MICHAEL)
2930980	USARMYFORTMONM	M	4/5/1994	TYPE	2913664	15	0	401906	740240	...	BECK.MICHAEL
2931158	SHELLOILCOMPANY	M	5/4/1994	KAVL	2914447	25	0	401853	740200	1MAINSTREET	KAVLUNAS,M1C
2931159	SHELLOILCOMPANY	M	5/4/1994	KAVL	2914447	25	0	401853	740200	1MAINSTREET	KAVLUNAS,MICF)~
2931552	Redacted - Privacy Act	G	6/30/1994	PARE	2914449	30	10	401853	740133	34WELFHILLAVENUE	PARENT,GAPY
2931772	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913664	15	0	401906	740240	SELFM-PW-EV	BECK.MICHAELI
2931773	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913664	15	0	401906	740240	SELFM-PW-EV	BECK.MICHAELI
2931774	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913664	15	0	401906	740240	SELFM-PW-EV	BECK.MICHAELI
2931775	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913664	15	0	401906	740240	SELFM-FW-EV	BECK.MICHAELI
2931780	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913656	15	0	401906	740253	SELFM-PW-EV	BECK.MICHAELI
2931781	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913656	15	0	401906	740253	SELFM-F'VV-EV	BECK.MICHAEL
2931782	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913656	15	0	401906	740253	SELFM-FW-EV	BECK.MICHAELI
2931784	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913654	15	0	401906	740319	SELFM-P~N-EV	BECK.MICHAELI
2931785	USARMYFORTMONMOUT	M	8/3/1994	TYPE	2913655	15	0	401906	740306	SELFM-PW-EV	BECK.MICHAELI
2932189	USARMYENGINEERSDI	B	10/4/1994	GEOP	2913655	30	U	401906	740306	SHEPILL&MESSINGEAVES	KURZYNOWSKI,
2932190	USARMYENGINEERSDI	B	10/4/1994	GEOR	2913655	30	0	401906	740306	SHERILL&MESSINGEAVES	KURZYNOWSKL;
2932191	USARMYENGINEERSDI	B	10/4/1994	GEOP	2913655	30	0	401906	740306	SHEPILL&MESSINGEPAVE	KUPZYNOWSKI.~
2932192	USARMYENGINEERSDI	B	10/4/1994	GEOR	2913655	30	0	401906	740306	SHERILL&MESSINOERAVE	KURZYNOWSKLj
2932560	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	BURGERJR.,S~
2932561	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	101906	740253	BLDF167	REEVE,WELLIN(
2932562	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	REEVE,WELLIN(

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

2932563	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	PEEVE,WELLIN(
2932565	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	PEEVE,WELLIN(
2932566	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	PEEVE,WELLIN(;
2932567	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	0	401906	740253	BLDF167	PEEVE,WELLIN~
2932567	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913656	25	U	401906	740253	BLDF167	PEEVE.WELLIN~
2932568	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.,S
2932569	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.S~
2932570	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	fl	401906	740306	BLDF1G7	REEVE,WELLIN~
2932571	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF1G7	BURGERJR.,Si
2932572	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.,
2932573	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.
2932574	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.S~
2932575	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913655	25	0	401906	740306	BLDF167	BURGERJR.S~
2932576	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF1G7	BURGERJR.S'
2932577	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	BURGERJR.S~
2932578	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	BURGERJR.S~
2932579	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	BURGERJR.S~
2932580	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	REEVE.WELLIN~
2932581	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	BURGERJR.S
2932582	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	PEEVE.WELLINw
2932583	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913668	25	0	401853	740226	BLDF167	REEVE.WELLIN~
2932584	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BLDF167	PEEVE,WELLIN~
2932585	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BEDF167	REEVE.WELLIN~
2932586	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BLDF167	REEVE,WELLIN~
2932587	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BLDF167	BURGERJR..5(
2932588	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BLDF167	BURGERJR..S~
2932589	U.S.ARMY(DIRECTOR	M	11/29/1994	ANDE	2913681	25	0	401839	740319	BLDF167	BURGERJR..Sf
2932743	UNITEDSTATESGOVERN	B	1/20/1995	UNIT	2913656	50	0	401906	740253	FORTHMONMOUTHARMY	JESTERJOSER
2933754	USARMY-FORTMONMO	M	7/19/1995	PARE	2914444	20	0	401906	740200	BLDG1122	PARENT,GARYf
2933755	USARMY-FORTMONMO	M	7/19/1995	PARE	2914444	20	0	401906	740200	FT.MONMOUTH	PARENT.GARY
2933769	EATONTOWNBOROUGHOF	M	7/19/1995	PARE	2913659	20	0	401853	740253	2OLEWISSTREET	PARENT.GARY~
2933770	EATONTOWNBOROUGHOF	M	7/19/1995	PARE	2913659	20	0	401853	740253	2OLEWISSTPEET	PARENT.GARY
2933771	EATONTOWNBOROUGHOF	M	7/19/1995	PARE	2913659	20	0	401853	740253	21LEWISSTREET	PARENT,GAPY~
2933772	EATONTOWNBOROUGHOF	M	7/19/1995	PARE	2913659	20	0	401853	740253	21LEWISSTREET	PARENT,GARY
2933773	EATONTOWNBOROUGHOF	M	7/19/1995	PARE	2913659	20	0	401853	740253	21LEWISSTREET	PARENT,GARYf
2933989	USARMY-FT.MONMOU	M	8/18/1995	PARE	2913661	20	0	401920	740240	BLDG.1G7DEHENV.	PARENT.GARY
2934248	GETTYPETROLEUMCORP	M	9/28/1995	AQUI	2913684	25	0	401826	740319	157BROADST.	MALACK.GERAL~
2934249	GETTYPETROLEUMCORP	M	9/28/1995	AQUI	2913684	25	0	401826	740319	157BROADST.	MALACK.GERALf

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

2934250	GETTYPETROLEUMCORP	M	9/28/1995	AQUI	2913684	25	0	401826	740319	157BROADST.	MALACK.GERAL
2934251	GETTYPETROLEUMCORP	M	9/28/1995	AQUI	2913684	25	0	401826	740319	157BROADST.	MALACK.GERAL
2934252	GETTYPETROLEUMCORP	M	9/28/1995	AQUI	2913684	25	0	401826	740319	157BROADST.	MALACK.GERAL
2934702	USARMYFORTMONMOUT	B	12/15/1995	TRAC	2914442	40	0	401920	740146	BLDG286ROOM012AMSEL	KIRK.CALVIN
2934857	USARMYFORTMONMOUT	B	2/8/1996	KIRK	2914442	50	0	401920	740146	BLDG286.PM012.AMSEL	KIRK.CALVIN
2935312	U.S.ARMY	M	5/1/1996	GRAH	2913657	50	0	401853	740319	COOPEGIDOPPD.	VOGT.JOHN
2935313	U.S.ARMY	M	5/1/1996	GRAH	2913657	50	0	401853	740319	COOPEGIDORRD.	VOGT.JOHN
2935314	U.S.ARMY	M	5/1/1996	GRAH	2913657	50	0	401853	740319	000PEGIDOPPD	VOGT.JOHN
2935314	U.S.ARMY	M	5/1/1996	GRAH	2913657	50	0	401853	740319	COOREGIDORPD.	VOGT.JOHN
2935585	OETTYPETROLEUMCORP	M	6/19/1996	PARE	2913684	20	0	401826	740319	157BROADST.	PARENT.GARY.
2935585	GETTYPETROLEUMCORP	M	6/19/1996	PARE	2913684	20	0	401826	740319	157BROADST.	PARENT,GARY.
2935731	OAKHURSTSERVICECEN	M	7/17/1996	LUTZ	2914484	25	0	401826	740119	POOSEVELTAVE.	TABORPICHAR~
2935731	OAKHURSTSERVICECEN	M	7/17/1996	LUTZ	2914484	25	0	401826	740119	POOSEVELTAVE.	TABORPICHAFI
2935732	OAKHURSTSERVICECEN	M	7/17/1996	LUTZ	2914484	25	0	401826	740118	ROOSEVELTAVE.	TABORPICHAF
2935931	ALLIEDSIGNAL/BENDIX	E	8/29/1996	HAND	2913688	35	4	401813	740306	118HIGHWAY35	KOVELESKY.ST~
2936995	AMERCOMENGCORP	B	5/27/1997	LIPP	2914484	40	U	401826	740119	PT36	W000INGTON,
2937223	Redacted - Privacy Act	D	7/7/1997	RAYS	2913931	160	12	401800	740240	80REYNOLDSDR	PETERS.RAY
2937602	ALLIEDSIGNAL/BENDIX	E	9/11/1997	HAND	2913688	35	8	401813	740306	118HIGHWAY35	KOVELESKY,ST?
2937603	ALLIEDSIGNAL/BENDIX	E	9/11/1997	HAND	2913688	35	6	401813	740306	118HIGHWAY35	KOVELESKY.STt
2937604	ALLIEDSIGNAL/BENDIX	E	9/11/1997	HAND	2913688	35	8	401813	740306	118HIGHWAY35	KOVELESKY.ST;
2937605	ALLIEDSIGNAL/BENDIX	E	9/11/1997	HAND	2913688	35	8	401813	740306	118HIGHWAY35	KOVESLESKY,S~
2937606	ALLIEDSIGNAL/BENDIX	E	9/11/1997	HAND	2913688	35	8	401813	740306	118HIGHWAY35	KOVESLESKY.S~
2937737	UNITEDSTATESARMY	V	10/8/1997	PARE	2913657	25	0	401853	740319	PT.35	GRANESE.MIKE:.
2937738	UNITEDSTATESARMY	V	10/8/1997	PARE	2913657	25	0	401853	740319	PT.35	GRANESE.MIKEI
2937739	UNITEDSTATESARMY	V	10/8/1997	PARE	2913657	25	0	401853	740319	PT.35	GRANESE.MIKE
2937740	UNITEDSTATESARMY	V	10/8/1997	PARE	2913657	25	0	401853	740319	PT.35	GRANESE.MIKEI
2937867	Redacted - Privacy Act	1	11/13/1997	RPMI	2913932	50	10	401800	740226	6STIRRUPEN.	MAYERCHRIS
2937878	WATERSEDGETOWNHOM	G	11/14/1997	MCCP	2914447	120	35	401853	740200	4OCEANPOPTAVE.	VANDUSON.AL~
2938172	Redacted - Privacy Act	M	2/11/1998	PARE	2913695	30	0	401826	740226	1281EATONTOWNBLVD.	
2938320	MONMOUTHGRACEU.M.	D	3/13/1998	AQUA	2913923	100	16	401800	740253	REYNOLDSDRIVE	
2939550	USARMY-FT.MONMOU	H	10/21/1998	STOT	2913695	300	0	401826	740226	SELSM-EH-MCBLDG.2700	
2939826	GETTYPROPERTIESCOR	M	1/7/1999	AQUI	2913681	20	U	401839	740319	157BROADST	...

Notes:

Source: State of New Jersey Department of Environmental Protection - Well Permitting and Regulations Section of the Bureau of Water Allocation, Trenton, NJ.
Search date: 18 January 2001.
Well search was performed for a 1-mile radius surrounding the center point of the M-2 Landfill, U.S. Army Garrison Fort Monmouth, Fort Monmouth, New Jersey.
M-12 Location: latitude = North 400 18' 46", longitude = West 740 02' 21".

Table 6-3
Well Search Summary
M-12 Landfill Site
Fort Monmouth, New Jersey

Well Use Codes

A - Unknown/Well Record Use Only
B - Boring
C - Commercial
D - Domestic (Potable)
E - Recovery/Decontamination Pollution Control/Leachate with Pump Capacity
F - Fire
G - Irrigation
H - Heat Pump/Geothermal (Return Well)
I - Industrial
J - Injection
K - Inclinometer
L - Livestock
M - Monitoring Well (Observation)
N - Public Non Community
O - Oil/Gas Exploration
P - Public Supply
Q - Recharge
R - Replacement (Replacement Codes: 1 - Domestic; 2 - Public Community, 5 - Irrigation)
S - Closed Loop
T - Test
U - Non Public (Supply)
V - Gas Vent
W - Dewatering
X - Agricultural/Horticultural/IrrigationWells
Y - Cathodic Protection
Z - Piezometer

APPENDICES

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1
WELL ID				M12MW14
Date Collected				8/20/2010
ANALYTE / Lab ID				10357.01
Metals				
Antimony	6	µg/L	N/A	ND
Arsenic	3	µg/L	N/A	0.680 ER
Barium	6000	µg/L	699	83.6
Beryllium	1	µg/L	N/A	0.800
Cadmium	4	µg/L	N/A	0.680 ER
Chromium	70	µg/L	N/A	ND
Copper	1300	µg/L	65.6	3.46 ER
Lead	5	µg/L	N/A	ND
Mercury	2	µg/L	N/A	ND
Nickel	100	µg/L	187	28.9
Selenium	40	µg/L	N/A	NR
Thallium	2	µg/L	N/A	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1
WELL ID				M12MW15
Date Collected				8/20/2010
ANALYTE / Lab ID				10357.02
Metals				
Antimony	6	µg/L	N/A	**10.2**
Arsenic	3	µg/L	N/A	0.680 ER
Barium	6000	µg/L	699	305
Beryllium	1	µg/L	N/A	0.815
Cadmium	4	µg/L	N/A	2.42
Chromium	70	µg/L	N/A	ND
Copper	1300	µg/L	65.6	4.93 ER
Lead	5	µg/L	N/A	3.19 ER
Mercury	2	µg/L	N/A	ND
Nickel	100	µg/L	187	ND
Selenium	40	µg/L	N/A	NR
Thallium	2	µg/L	N/A	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9
WELL ID				M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	8/6/1998	11/3/1998	1/29/1999	5/25/1999
ANALYTE / Lab ID				2687.02	2770.04	3148.04	3358.03	3553.03	3788.03	4025.04	4234.01	4508.04
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	11.08	8.92	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	2.83	ND	ND	ND
TICs*	500	µg/L	N/A	7	10	41	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	1.77	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	4.01	1.28	2.85	5.03 B	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	95	17	26	61	**800**	ND	10	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**10.0**	2.0	**20.0**	**26.0**	**16.8**	**20.2**	**23.2**	**14.8**	**30.3**
Barium	2000	µg/L	699	22.36	31.8	32.6	41.0	21.5	23.6	33.3	22.3	32.8
Beryllium	20	µg/L	N/A	0.11	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.751	ND	0.819
Chromium	100	µg/L	N/A	ND	0.9	3.0	4.0	ND	9.15	5.63	4.06	4.97
Copper	1000	µg/L	65.6	9.0	7.0	9.0	10.0	ND	ND	172	32.8	14.7
Lead	10	µg/L	N/A	ND	ND	6.0	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.3	ND	ND	ND	0.3	ND
Nickel	100	µg/L	187	ND	ND	2.3	4.3	2.8	0.779	3.0	3.4	1.8
Selenium	50	µg/L	N/A	2.0	3.0	ND	ND	ND	ND	ND	3.6	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	9	10	10	11	11	12	13	14	15
WELL ID				MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	LF1(1)	LF2(1)
Date Collected				5/25/1999	7/23/1999	7/23/1999	10/14/1999	10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000
ANALYTE / Lab ID				4508.06	4647.04	4647.03	4855.04	4855.03	5199.04	5430.04	5642.03	5728.04
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	7	33	24	22	26	8	**168**	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.33	ND	ND	4.35	ND
Arsenic	8	µg/L	N/A	**26.5**	**14.4**	**13.9**	**11.9**	**11.2**	**8.85**	4.99	**36.8**	**18.5**
Barium	2000	µg/L	699	32.8	17.8	17.4	18.7	20.1	15	ND	40.9	24.5
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.786	0.934	1.24	**4.01**	1.01	ND	ND	ND	ND
Chromium	100	µg/L	N/A	4.74	5.57	5.25	5.23	4.79	3.24	4.8	2.08	ND
Copper	1000	µg/L	65.6	28.6	ND	ND	30.5	37.1	5.19	ND	166	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	**35.8**	ND	ND	1.72	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.59	1.23	1.58	3.21	2.06	1.52	0.922	1.74	ND
Selenium	50	µg/L	N/A	ND	ND	ND	4.86	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	16	17	18	18	19	20	21	22	23
WELL ID				M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16
Date Collected				9/12/2000	11/17/2000	1/26/2001	1/26/2001	5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002
ANALYTE / Lab ID				5705.04	5861.04	393.04	392.03	16097.13	16444.04	16624.04	20094.04	20347.04
VOCs												
Acetone	700	µg/L	N/A	ND	8.38	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	3.04	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	**306**	4	63	57	16	ND	11	32	24
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**20.1**	**25.7**	**15.6**	**15.4**	**23.2**	**37**	**77.3**	**70.4**	**54.9**
Barium	2000	µg/L	699	20.5	26.6	24.3	24.1	31.3	39.0	36.0	35.3	37.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.24	ND	**4.86**	1.65	0.642	0.819	0.677	1.12
Chromium	100	µg/L	N/A	19.2	4.04	3.39	**241**	6.02	4.66	3.22	3.15	2.62
Copper	1000	µg/L	65.6	ND	ND	ND	ND	4.32	84.2	8.06	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	1.3	**13.5**	2.32	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.92 B	ND
Nickel	100	µg/L	187	6.17	2.35	ND	**113**	2.23	5.16	ND	ND	ND
Selenium	50	µg/L	N/A	ND	5.7	ND	ND	ND	ND	ND	10.2	9.07
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	4.8	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	24	25	26	27	28	29	29	30	30
WELL ID				M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate
Date Collected				8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	10/23/2003	10/23/2003	2/17/2004	2/17/2004
ANALYTE / Lab ID				20599.04	20824.04	30125.04	30223.04	30425.04	30675.04	30675.03	40122.04	40122.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	4
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	1.21 B	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	11	7	11	**611**	13	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**78.5**	**76.8**	**23.5**	**53.6**	**41.5**	**120**	**118**	**67.4**	**66.3**
Barium	2000	µg/L	699	44.7	49.8	38.1	55	51.7	73.2	71.8	48.5	49.6
Beryllium	20	µg/L	N/A	ND	ND	0.163 ER	ND	0.0722 ER	0.294 ER	0.318 ER	ND	ND
Cadmium	4	µg/L	N/A	0.728	1.35	1.58 ER	1.47 ER	1.11 ER	0.880 ER	0.920 ER	ND	ND
Chromium	100	µg/L	N/A	3.49	2.08	1.74 ER	2.96 ER	2.33 ER	3.02 ER	2.87 ER	ND	ND
Copper	1000	µg/L	65.6	18	4.53	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	1.93	1.71	4.62 ER	ND	ND	1.60 ER	1.91 ER	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	1.62	ND	ND	1.48 ER	1.09 ER	1.88 ER	2.08 ER	ND	ND
Selenium	50	µg/L	N/A	7.02	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	31	31	32	33	34	35	35	36	36
WELL ID				M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate
Date Collected				5/10/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	5/5/2005	5/5/2005	9/7/2005	9/7/2005
ANALYTE / Lab ID				40344.04	40344.03	40591.04	40783.04	50080.03	50239.03	50239.02	50445.03	50445.02
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	26	19	18	ND	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**29.7**	**26.6**	**48**	**84.8**	ND	**18.6**	**20.8**	**39.3**	**37.5**
Barium	2000	µg/L	699	44.7	44.7	48.6	58	32.3	35.4	38.4	64.4	64.5
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	2.2	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	8.65	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	5.31	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	5.5	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	38	38	39	39	40	40	41	42	43	43
WELL ID				M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	MW16 Duplicate
Date Collected				11/15/2005	1/27/2006	1/27/2006	4/20/2006	4/20/2006	7/28/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007	5/9/2007
ANALYTE / Lab ID				50595.03	60060.03	60060.02	60169.03	60169.02	60342.03	60342.02	60480.03	70055.03	70168.03	70168.02
Metals														
Antimony	6	µg/L	N/A	ND	ND	ND	ND	2.34 ER	**7.79 ER**	4.84 ER	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**75.6**	**45.1**	**46.7**	**25.2**	**25.8**	**36.7**	**41.4**	**68**	**52.2**	**42.3**	**38.5**
Barium	2000	µg/L	699	61.1	42.1	43.4	51.5	51.4	67.4	66.2	76.1	77.9	66.4	63
Beryllium	1	µg/L	N/A	ND	ND	ND	0.153 ER	0.118 ER	ND	ND	0.157 ER	0.203 ER	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	**4.06**	3.76	3.86	3.68
Chromium	70	µg/L	N/A	ND	ND	ND	2.3	1.95 ER	1.91 ER	2.26 ER	1.73 ER	1.45 ER	1.81 ER	1.75 ER
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	3.08 ER	1.70 ER	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.14 ER	3.58 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	2.36 ER	1.5 ER	2.98 ER	3.22 ER	1.77 ER	1.68 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.65 ER	3.37 ER	ND	3.91 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	44	45	45	46	46	47	48	48
WELL ID				M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	MW16 Duplicate
Date Collected				8/7/2007	8/7/2007	11/30/2007	11/30/2007	3/7/2008	3/7/2008	5/15/2008	8/7/2008	8/7/2008
ANALYTE / Lab ID				70299.03	70299.02	70499.03	70499.02	80074.03	80074.02	80165.03	80286.03	80286.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**24.5**	**29.5**	**68.7**	**77.5**	**45.1**	**40.8**	**23.3**	**22.0**	**21.6**
Barium	6000	µg/L	699	68.3	69.1	210	212	110	113	53.0	118	118
Beryllium	1	µg/L	N/A	ND	ND	0.559	0.566	0.182 ER	0.173 ER	ND	0.131 ER	0.155 ER
Cadmium	4	µg/L	N/A	2.01	2.06	ND	ND	ND	ND	2.84	3.11	2.91
Chromium	70	µg/L	N/A	1.06 ER	1.25 ER	1.42	1.67 ER	1.88 ER	1.85 ER	2.02 ER	0.901 ER	0.746 ER
Copper	1300	µg/L	65.6	ND	ND	0.561 ER	0.770 ER	4.66 ER	4.29 ER	ND	ND	ND
Lead	5	µg/L	N/A	0.863 ER	ND	ND	ND	ND	ND	2.66 ER	2.97 ER	1.86 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	1.31 ER	0.973 ER	8.79	8.67	7.20	6.92	0.934 ER	3.59 ER	3.43 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	49	49	50	51	52	53	54	55	56
WELL ID				M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	LF3(1)	LF4(1)
Date Collected				10/27/2008	10/27/2008	3/13/2009	6/25/2009	9/8/2009	11/18/2009	2/4/2010	6/4/2010	9/9/2010
ANALYTE / Lab ID				80390.03	80390.02	90109.03	90263.01	90370.03	90451.03	10049.03	10235.04	10382.08
Metals												
Antimony	6	µg/L	N/A	1.39 ER	ND	**12.8**	2.31 ER	ND	ND	ND	**7.81 ER**	**12.8**
Arsenic	3	µg/L	N/A	**43.5**	**58.7**	**84.2**	**57.5**	**55.0**	**39.1**	**25.3**	**19.92**	**47.03**
Barium	6000	µg/L	699	286	282	102	97.8	205	213	84.9	69.3	135
Beryllium	1	µg/L	N/A	**1.03**	**1.37**	0.109 ER	0.246 ER	0.651	0.628	0.106 ER	0.169 ER	0.231 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	0.441 ER	2.08	ND	ND	1.41 ER	2.46
Chromium	70	µg/L	N/A	0.732 ER	1.92 ER	1.82 ER	1.84 ER	ND	ND	ND	ND	1.78 ER
Copper	1300	µg/L	65.6	ND	ND	ND	0.979 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	**10.2**	ND	ND	ND	2.58 ER	ND	**5.31**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.090 ER	0.190 ER
Nickel	100	µg/L	187	11.6	10.2	ND	2.55 ER	6.95	10.6	4.14 ER	1.98 ER	3.75 ER
Selenium	40	µg/L	N/A	ND	ND	29.6	13.4	20.8	ND	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	10
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	8/6/1998	11/3/1998	1/29/1999	5/25/1999	7/23/1999
ANALYTE / Lab ID				2687.03	2770.05	3148.05	3358.04	3553.04	3788.04	4025.03	4234.02	4508.05	4647.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	5.92	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	ND	ND	ND	ND	ND	1.26	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	28	ND	7	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	5.06	ND	3.67	5.13 B	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	201	16	**144**	154	**733**	ND	11	ND	ND	39
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	17.4	9.0	6.3	61	18.7	98.7	20.5	34.1	15.0	12.6
Beryllium	20	µg/L	N/A	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**19.4**	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	1.27	2.04	1.68	ND	1.43
Copper	1000	µg/L	65.6	10	9.0	11.0	15.0	ND	ND	285	ND	7.16	4.01
Lead	10	µg/L	N/A	0.7	ND	7.0	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.3	ND	ND	ND	0.22	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	3.6	2.5	ND	1.75	1.46	ND	0.938
Selenium	50	µg/L	N/A	1.0	2.0	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	14	15	16	17	18	19	20
WELL ID				M12MW17	M12MW17	M12MW17	LF1(1)	LF2(1)	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000	9/12/2000	11/17/2000	1/26/2001	5/2/2001	9/22/2001
ANALYTE / Lab ID				4855.05	5199.05	5430.05	5642.04	5728.05	5705.05	5861.05	394	16097.14	16444.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	1.54	ND	ND	NA	NA	1.51	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	45	39	34	NA	NA	40	10	31	10	29
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	0.033	ND
Metals													
Antimony	20	µg/L	N/A	2.47	ND	ND	2.89	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**20.2**	ND
Barium	2000	µg/L	699	100	8.13	ND	184	170	363	51.1	17.8	98.7	4.93
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.41	ND	ND	ND	0.763	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	2.61	ND	2.47	ND	ND	ND	1.32	ND	**101**	1.6
Copper	1000	µg/L	65.6	24.6	3.66	4.89	140	461	ND	ND	ND	160	69.1
Lead	10	µg/L	N/A	ND	ND	ND	ND	**80.6**	6.61	ND	ND	**66.9**	7.98
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.36	ND
Nickel	100	µg/L	187	0.66	ND	2.24	3.73	6.35	ND	ND	ND	11.8	2.69
Selenium	50	µg/L	N/A	4.43	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	21	22	23	24	25	26	27	28	28	29
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17
Date Collected				12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	7/25/2003	10/23/2003
ANALYTE / Lab ID				16624.05	20094.05	20347.05	20599.05	20824.05	30125.05	30223.05	30425.05	30425.03	30675.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	ND	ND	ND	ND	1.35	ND	ND	1.19 J	1.15 J	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	1.25 B	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	38	29	30	10	9	26	31	12	12	4
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	3.73	2.86	ND	2.1 ER	2.43 ER	ND	ND
Barium	2000	µg/L	699	42.1	19.7	111	65.7	380	11.2	15.2	69.4	70.6	6.47
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.052 ER	ND	ND	ND	0.171 ER
Cadmium	4	µg/L	N/A	ND	ND	0.658	ND	0.903	ND	ND	0.580 ER	0.513 ER	ND
Chromium	100	µg/L	N/A	ND	0.857	ND	0.589	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	5.53	5.51	4.84	4.48	10.5	1.70 ER	2.37 ER	0.770 ER	1.0	ND
Lead	10	µg/L	N/A	1.69	ND	ND	ND	4.53	ND	ND	ND	0.922 ER	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	1.32	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	6.69	ND	ND	ND	5.53 ER	5.15 ER	ND	4.91 ER	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	30	31	32	32	33	34	35	36
WELL ID				M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				2/17/2004	5/10/2004	8/11/2004	8/11/2004	11/16/2004	2/9/2005	5/5/2005	9/7/2005
ANALYTE / Lab ID				40122.05	40344.05	40591.05	40591.03	40783.05	50080.04	50239.04	50445.04
VOCs											
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Chlorobenzene	4	µg/L	N/A	0.49 J	0.48 J	ND	ND	1.09 J	NA	NA	NA
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	0.48 J	NA	NA	NA
TICs*	500	µg/L	N/A	4	ND	ND	ND	ND	NA	NA	NA
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	6	ND	5	ND	ND	NA	NA	NA
Pesticides/PCBs											
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Metals											
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	101	62.2	7.46	6.58	275	28.1	75.1	154
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	2.74
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	7.67	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	38	39	40	41	42	43
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				11/15/2005	1/27/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.04	60060.04	60169.04	60342.04	60480.04	70055.04	70168.04
Metals										
Antimony	6	µg/L	N/A	ND	ND	2.03 ER	**9.26** ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	2.54 ER	ND
Barium	2000	µg/L	699	121	37.8	87.2	134	314	83.1	89.6
Beryllium	1	µg/L	N/A	ND	ND	0.106 ER	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	**4.98**	2.06	2.0 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.548 ER
Copper	1300	µg/L	65.6	ND	ND	1.67 ER	2.51 ER	ND	ND	4.59 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.27 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	5.43 ER	3.56 ER	5.88 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	45	46	47	47	48	49	50	50
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17	M12MW17	M12MW17	MW17 Duplicate
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	3/13/2009
ANALYTE / Lab ID				70299.04	70499.04	80074.04	80165.04	80165.02	80286.04	80390.04	90109.04	90109.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	**15.6**	**10.9**
Arsenic	3	µg/L	N/A	**3.77 ER**	ND	ND	ND	ND	ND	ND	**83.0**	**80.6**
Barium	6000	µg/L	699	62.4	16.7	33.2	73.0	72.2	114	42.6	112	117
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.28 ER	ND	ND	1.37 ER	1.36 ER	2.1	0.294 ER	ND	ND
Chromium	70	µg/L	N/A	ND	0.4 ER	0.240 ER	0.486 ER	0.679 ER	ND	ND	ND	1.01 ER
Copper	1300	µg/L	65.6	ND	ND	4.31 ER	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	1.83 ER	ND	**6.17**	4.44 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.54 ER	ND	ND	ND	ND	ND	1.55 ER
Selenium	40	µg/L	N/A	4.59 ER	ND	ND	ND	ND	ND	ND	**72.7**	**70.8**
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.69 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	51	52	53	54	55	55	56
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				6/8/2009	9/8/2009	11/18/2009	2/4/2010	6/2/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90221.04	90370.04	90451.04	10049.04	10226.03	10226.02	10379.04
Metals										
Antimony	6	µg/L	N/A	3.95 ER	ND	ND	ND	**7.94 ER**	5.34 ER	**16.1**
Arsenic	3	µg/L	N/A	**27.7**	**21.6**	0.770 ER	0.660 ER	ND	ND	0.670 ER
Barium	6000	µg/L	699	122	80.7	39.3	33.2	4.53 ER	4.64 ER	4.35 ER
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.54 ER	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.29 ER	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	2.55 ER	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.060 ER
Nickel	100	µg/L	187	ND	ND	ND	0.996 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	36.7	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	1.76 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	6	7
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	M12MW18
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	5/7/1998	8/6/1998	8/6/1998	11/3/1998
ANALYTE / Lab ID				2687.01	2770.03	3148.03	3358.05	3553.05	3553.06	3788.05	3788.06	4025.05
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	8.18	6.6	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.55	1.99	ND
TICs*	500	µg/L	N/A	14	ND	ND	21	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	20.1
Diethyl phthalate	5000	µg/L	N/A	ND	ND	1.14	ND	ND	ND	ND	ND	ND
Di-*n*-butyl phthalate	900	µg/L	N/A	2.78	1.23	11.17	5.91 B	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	71	17	20	35	**900**	**870**	ND	ND	ND
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	11.0	ND	ND	ND	2.42	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	147.2	136.1	95.0	90.0	114.0	117.0	108.0	109.0	119.0
Beryllium	20	µg/L	N/A	0.18	1.2	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	2.0	ND	ND	1.0	0.6	0.8	1.66	ND	ND
Chromium	100	µg/L	N/A	3.0	ND	1.6	2.2	ND	ND	1.32	1.24	3.17
Copper	1000	µg/L	65.6	21	9.0	10.0	16.0	5.5	5.0	ND	ND	123.0
Lead	10	µg/L	N/A	0.6	ND	15.0	6.0	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.8	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	6.0	7.7	5.1	4.9	3.62	3.27	5.62
Selenium	50	µg/L	N/A	2.0	2.0	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	7	8	9	10	11	12	13	14	15
WELL ID				MW18 Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	LF1(1)	LF2(1)
Date Collected				11/3/1998	1/29/1999	5/25/1999	7/23/1999	10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000
ANALYTE / Lab ID				4025.06	4234.03	4508.03	4647.06	4855.06	5199.06	5430.06	5642.02	5728.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Diethyl phthalate	5000	µg/L	N/A	ND	ND	ND	ND	ND	1.91	ND	NA	NA
Di-*n*-butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	10	ND	ND	36	38	14	34	NA	NA
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.54	ND	ND	3.87	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	118.0	115.0	92.6	96.2	116	114	89.6	122	123
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	0.709	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.68	1.68	0.58	1.4	2.48	ND	2.34	3.22	ND
Copper	1000	µg/L	65.6	92.9	3.37	30.6	3.73	23.3	ND	ND	488	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.74	ND
Mercury	2	µg/L	N/A	ND	0.17	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	5.16	4.08	5.41	3.97	3.97	3.07	7.63	8.86	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	3.52	4.65	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	15	16	17	18	19	19	20	21	22
WELL ID				LF2(1) Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate	M12MW18	M12MW18	M12MW18
Date Collected				9/9/2000	9/12/2000	11/17/2000	1/26/2001	5/2/2001	5/2/2001	9/22/2001	12/5/2001	2/14/2002
ANALYTE / Lab ID				5728.02	5705.06	5861.06	395	16097.15	16097.18	16444.06	16624.06	20094.06
VOCs												
Acetone	700	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-butyl phthalate	900	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	NA	240	10	16	19	10	ND	4	35
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	NA	ND	ND	ND	ND	ND	0.005	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	NA	ND	ND	ND	ND	ND	0.006	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	5.13	ND	ND	ND
Barium	2000	µg/L	699	123	103	121	97.2	76.7	87.1	92.7	87.9	110
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.676	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	0.656	ND	**4.16**	ND	0.627	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	0.655	ND	1.5	2.84	0.562	1.72	1.14
Copper	1000	µg/L	65.6	ND	ND	ND	3.26	3.7	6.19	3.23	137	4.27
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	2.46	ND	**17**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	4.1	1.48	3.19	5.48	2.07	9.82	3.44
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	3.88	ND	ND	9.32
Thallium	10	µg/L	N/A	ND	ND	ND	4.22	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	23	24	25	26	27	28	29	30	31
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				6/4/2002	8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	10/23/2003	2/17/2004	5/10/2004
ANALYTE / Lab ID				20347.06	20599.06	20824.06	30125.06	30223.06	30425.06	30675.06	40122.06	40344.06
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	26	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	1.07 B	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	27	10	10	29	17	15	ND	ND	ND
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.4 ER	ND	ND	ND	ND
Barium	2000	µg/L	699	68	69.9	138	120	107	75.4	113	132	112
Beryllium	20	µg/L	N/A	ND	ND	ND	0.402 ER	ND	0.266 ER	0.523	ND	ND
Cadmium	4	µg/L	N/A	0.923	0.98	ND	0.742 ER	0.55 ER	0.563 ER	ND	ND	ND
Chromium	100	µg/L	N/A	ND	0.696	ND	1.37 ER	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	4.78	503	3.6	8.36	2.87 ER	0.723 ER	0.595 ER	31.8	ND
Lead	10	µg/L	N/A	ND	**34.3**	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	3.19	28.2	3.98	4.51 ER	3.56 ER	3.78 ER	3.19 ER	ND	ND
Selenium	50	µg/L	N/A	ND	4.02	6.1	ND	ND	5.66 ER	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	4.22	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	32	33	34	35	36
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				8/11/2004	11/16/2004	2/9/2005	5/5/2005	9/7/2005
ANALYTE / Lab ID				40591.06	40783.06	50080.05	50239.05	50445.05
VOCs								
Acetone	700	µg/L	N/A	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	NA	NA	NA
SVOCs								
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	NA	NA	NA
Diethyl phthalate	5000	µg/L	N/A	ND	ND	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	34	ND	NA	NA	NA
Pesticides/PCBs								
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	NA	NA	NA
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	NA	NA	NA
Metals								
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	67.9	124	11.4	84.61	71.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	37	38	39	40	41	42	43
WELL ID				M12MW18	MW18 Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				11/15/2005	11/15/2005	1/27/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.05	50595.02	60060.05	60169.05	60342.05	60480.05	70055.05	70168.05
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	5.01 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	93	94.9	130	115	104	161	228	310
Beryllium	1	µg/L	N/A	ND	ND	0.545	0.449 ER	0.180 ER	0.400 ER	0.662	0.734
Cadmium	4	µg/L	N/A	ND	ND	ND	0.375 ER	0.877 ER	0.400 ER	0.521 ER	0.909 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	1.25 ER	2.53 ER	ND	1.45 ER	3.46 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	3.85 ER	3.62 ER	4.0 ER	5.49	8.73
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	5.0 ER	3.76 ER	3.62 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	45	46	47	48	49	50	51	51
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	6/8/2009
ANALYTE / Lab ID				70299.05	70499.05	80074.05	80165.05	80286.05	80390.05	90109.05	90221.05	90221.02
Metals												
Antimony	6	µg/L	N/A	ND	0.718 ER	ND	ND	ND	ND	**15.5**	2.89 ER	2.53 ER
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	**32.3**	**14.3**	**14.7**
Barium	6000	µg/L	699	215	340	424	313	314	316	280	232	238
Beryllium	1	µg/L	N/A	0.561	0.984	**1.11**	0.87	0.823	0.94	0.809	0.746	0.767
Cadmium	4	µg/L	N/A	0.92 ER	0.810 ER	1.18 ER	0.946 ER	1.26 ER	1.05 ER	0.745 ER	0.633 ER	0.700 ER
Chromium	70	µg/L	N/A	ND	0.4 ER	0.417 ER	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	2.16 ER	3.38 ER	7.92	3.09 ER	1.63 ER	ND	0.846 ER	2.34 ER	2.41 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**5.67**	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.36	8.61	15.2	10.3	9.39	8.75	6.77	8.67	8.85
Selenium	40	µg/L	N/A	ND	ND	ND	5.85 ER	5.05 ER	ND	**63.7**	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	52	52	53	53	54	54	55	56	56
WELL ID				M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	LF3(1)	LF4(1)	LF4(1) Duplicate
Date Collected				9/8/2009	9/8/2009	11/18/2009	11/18/2009	2/4/2010	2/4/2010	6/2/2010	9/8/2010	9/8/2010
ANALYTE / Lab ID				90370.05	90370.02	90451.05	90451.02	10049.05	10049.02	10226.04	10379.03	10319.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	5.49 ER	**8.99 ER**
Arsenic	3	µg/L	N/A	**9.26**	**6.83**	1.11 ER	ND	ND	0.880 ER	ND	1.20 ER	0.990 ER
Barium	6000	µg/L	699	239	239	256	258	146	140	137	169	169
Beryllium	1	µg/L	N/A	0.767	0.792 ER	0.801	0.819	0.446 ER	0.437 ER	0.554	0.655	0.651
Cadmium	4	µg/L	N/A	0.739 ER	0.627 ER	ND	ND	ND	ND	ND	0.749 ER	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	2.53 ER	2.92 ER	ND	ND	2.16 ER	1.16 ER	ND	2.26 ER	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	7.06	7.25	9.12	9.03	6.30	6.26	5.44	5.66	5.52
Selenium	40	µg/L	N/A	27.0	18.0	9.05 ER	ND	NR	NR	NR	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.94 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	7	8
WELL ID				M12MW19	M12MW19	M12MW19	LF1(1)	LF2(1)	LF2(1) Duplicate	M12MW19	M12MW19	M12MW19
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001
ANALYTE / Lab ID				5199.07	5244.04	5430.07	5649.04	5735.03	5735.02	5705.07	5861.07	375
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	4.14	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	ND	10	9	NA	NA	NA	**493**	8	32
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
4,4'-DDT	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	2.24	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	2.91	9.8	ND	6.28	6.81	6.85	10.0	11.1	7.22
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.09	ND	ND	ND	ND	ND	ND	**4.58**
Chromium	100	µg/L	N/A	2.11	ND	1.47	ND	ND	ND	ND	2.83	3.03
Copper	1000	µg/L	65.6	8.62	ND	ND	ND	ND	ND	ND	ND	271
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	5.26	8.05	**42.8**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.36	3.48	1.47	ND	ND	ND	ND	2.69	7.64
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	9	10	11	12	13	14	15	16	17
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16097.04	16444.07	16624.07	20094.07	20347.07	20599.07	20824.07	30125.07	30223.07
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	5
SVOCs												
TICs*	500	µg/L	N/A	ND	7	17	35	19	8	10	67	19
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.008
4,4'-DDD	0.1	µg/L	N/A	ND	ND	0.002	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.1	µg/L	N/A	ND	0.006	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.7	ND	2.77	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	4.09	ND	ND	2.89 ER
Barium	2000	µg/L	699	9.62	7.64	9.59	9.19	540	7.46	7.01	5.89	8.24
Beryllium	20	µg/L	N/A	ND	ND	ND	1.53	0.631	ND	0.857	0.171 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	2.85	3.32	1.69	ND	1.71	0.80 ER	1.22 ER
Chromium	100	µg/L	N/A	7.35	41	7.89	5.57	2.47	4.31	2.62	ND	1.82 ER
Copper	1000	µg/L	65.6	11	8.17	33.4	37.4	22.4	47.6	2.47	2.97	17.6
Lead	10	µg/L	N/A	8.86	**21.8**	**13.3**	**18.0**	**237**	9.51	2.83	ND	3.62 ER
Mercury	2	µg/L	N/A	ND	0.11	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	7.59	8.61	6.28	8.72	3.97	6.52	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	4.58	ND	ND	ND	7.71 ER	4.56 ER
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				7/25/2003	11/7/2003	2/18/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30425.07	30720.04	40123.04	40344.07	40591.07	40783.07	50080.06	50237.03	50442.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	11	ND	ND	ND	NA	NA	NA
SVOCs												
TICs*	500	µg/L	N/A	13	4	ND	ND	40	ND	NA	NA	NA
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDT	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	8.71	33.6	7.07	9	11	8.18	95.1	12	11
Beryllium	20	µg/L	N/A	0.229 ER	1.87	0.791	ND	0.747	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.965 ER	1.77 ER	2.88	ND	2.72	ND	ND	ND	ND
Chromium	100	µg/L	N/A	4.14 ER	2.87 ER	5.02	ND	11.1	ND	ND	ND	ND
Copper	1000	µg/L	65.6	15.4	19.9	19.8	19.4	35.9	12.3	ND	ND	ND
Lead	10	µg/L	N/A	3.44 ER	7.55	8.98	6.76	**16.8**	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	4.36 ER	28.4	ND	ND	10.6	ND	ND	ND	ND
Selenium	50	µg/L	N/A	6.10 ER	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	28	29	30	31	32	33
WELL ID				M12MW19	M12MW19	MW19 Duplicate	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				11/15/2005	1/26/2006	1/26/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.06	60058.03	60058.02	60169.06	60342.06	60480.06	70055.06	70168.06
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	4.27 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	2.79 ER	ND	ND	ND
Barium	2000	µg/L	699	18.3	7.94	8.27	8.13	10.2	6.96	7.84	7.92
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.116 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.383 ER	ND	0.342 ER	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	9.78	ND	ND	ND	1.07 ER	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	14.6	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	9.32 ER	5.08 ER	7.42 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.06	70499.06	80074.06	80165.06	80286.06	80390.06	90109.06	90221.06
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	2.89 ER	ND	**16.5**	4.52 ER
Arsenic	3	µg/L	N/A	**3.47 ER**	ND	ND	ND	ND	ND	**91.1**	**28.3**
Barium	6000	µg/L	699	9.73	6.51	9.88	27.4	12.3	11.8	9.24	8.72
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	**1.15**	0.124 ER
Cadmium	4	µg/L	N/A	ND	0.319 ER	0.301 ER	0.374 ER	ND	0.880 ER	0.836 ER	0.219 ER
Chromium	70	µg/L	N/A	ND	0.338 ER	0.215 ER	1.06 ER	ND	0.544 ER	1.07 ER	0.539 ER
Copper	1300	µg/L	65.6	ND	ND	2.91 ER	10.9	ND	3.57 ER	404	9.91
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.0**	1.57 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	5.28	23.8	1.72 ER	0.775 ER	ND	3.41 ER
Selenium	40	µg/L	N/A	6.95 ER	ND	ND	7.82 ER	8.01 ER	ND	**79.5**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	44	45	46
WELL ID				M12MW19	M12MW19	M12MW19	MW19 Duplicate	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	2/5/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90370.06	90451.06	10052.03	10052.02	10226.05	10379.05
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	ND	4.91 ER	**13.7**
Arsenic	3	µg/L	N/A	**25.4**	0.990 ER	0.690 ER	ND	ND	0.970 ER
Barium	6000	µg/L	699	7.92	16.9	3.43 ER	2.80 ER	5.81	6.08
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.07 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	0.120 ER
Nickel	100	µg/L	187	ND	3.05 ER	ND	ND	ND	ND
Selenium	40	µg/L	N/A	36.6	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	0.720 ER	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	10
WELL ID				M12MW20	M12MW20	M12MW20	LF1(1)	LF2(1)	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001	9/22/2001
ANALYTE / Lab ID				5199.08	5244.05	5430.08	5649.06	5735.05	5705.08	5861.08	374	16097.05	16444.08
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	7.97	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	5.1	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	2.62	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	22	9	18	NA	NA	**386**	11	38	ND	ND
Pesticides/PCBs													
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	4.23	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	4.49	ND
Barium	2000	µg/L	699	31.1	30.8	21.5	28.7	30.7	34	33.8	34.4	132	39.4
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	1.55	ND	ND	0.831	3.92	1.09	3.6	ND
Chromium	100	µg/L	N/A	ND	ND	2.23	ND	ND	ND	3.01	ND	24.9	4.45
Copper	1000	µg/L	65.6	5.68	ND	3.4	ND	ND	224	411	14.6	13.7	4.46
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	**37.1**	**55.9**	1.64	**52.5**	**15.1**
Mercury	2	µg/L	N/A	ND	ND	0.2	ND	ND	ND	ND	ND	0.26	1.01
Nickel	100	µg/L	187	ND	1.44	1.86	ND	ND	4.63	12.7	ND	1.83	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	6.74	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	14	15	16	17	18	19	19
WELL ID				M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	MW20 Duplicate
Date Collected				12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/25/2003	11/7/2003	11/7/2003
ANALYTE / Lab ID				16624.08	20094.08	20347.08	20599.08	20824.08	30125.08	30223.08	30425.08	30720.05	30720.03
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	22	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	5	5	6	11	11	12	15	13	8	10
Pesticides/PCBs													
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.008	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	0.003	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.57	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.3	ND	3.48 ER	ND	ND	ND
Barium	2000	µg/L	699	44.2	48.6	55.4	35.7	32.6	38.3	119	58	41.5	38.8
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.0375 ER	ND	0.0606 ER	0.036 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.43 ER	0.789 ER	ND	ND
Chromium	100	µg/L	N/A	2.9	2.62	ND	0.659	1.62	1.53 ER	0.72 ER	ND	ND	ND
Copper	1000	µg/L	65.6	69.9	ND	ND	11.8	23.3	3.95 ER	17.3	31.2	20.3	19.3
Lead	10	µg/L	N/A	**18.1**	5.96	1.8	3.18	1.13	2.59 ER	ND	ND	1.54 ER	1.44 ER
Mercury	2	µg/L	N/A	0.3	0.29	0.45	0.14	ND	ND	ND	ND	0.4	0.17 ER
Nickel	100	µg/L	187	2.79	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	3.73	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	20	21	22	23	24	25	26
WELL ID				M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				2/18/2004	2/18/2004	5/10/2004	8/10/2004	11/16/2004	2/9/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				40123.05	40123.03	40344.08	40589.04	40783.08	50080.07	50237.04	50442.04
VOCs											
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	14	19	ND	ND	ND	NA	NA	NA
SVOCs											
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	9	ND	NA	NA	NA
Pesticides/PCBs											
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Metals											
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	**40.0**	ND	ND
Barium	2000	µg/L	699	54.6	53.5	77.5	34	37.4	40.0	37.1	80.2
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.36
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	12	12.9	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	6.16	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	27	28	29	30	30	31	32	33
WELL ID				M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20
Date Collected				11/14/2005	11/14/2005	1/26/2006	4/20/2006	7/27/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.03	50594.02	60058.04	60169.07	60341.03	60341.02	60480.07	70055.07	70168.07
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	2.02 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3.77 ER
Barium	2000	µg/L	699	44.7	37	82.4	89.5	49.9	64.9	58	44.8	162
Beryllium	1	µg/L	N/A	ND	ND	ND	0.146 ER	ND	ND	ND	0.119 ER	0.132 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.08	1.30 ER	3.41
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	14.6	12.6	ND	18.5	6.81	12.8	15	7.94	1.39 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	1.64	4.41 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	7.38 ER	6.78 ER	3.88 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.07	70499.07	80074.07	80165.07	80286.07	80390.07	90109.07	90221.07
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.0**	1.48 ER
Arsenic	3	µg/L	N/A	**4.34 ER**	ND	**3.11 ER**	ND	ND	ND	**87.4**	**27.0**
Barium	6000	µg/L	699	45.7	21.9	41.9	44.0	44.6	31.0	34.1	30.9
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.785 ER	ND	ND	0.979 ER	0.895 ER	0.391 ER	ND	ND
Chromium	70	µg/L	N/A	0.248 ER	0.631 ER	0.494 ER	ND	0.359 ER	ND	ND	ND
Copper	1300	µg/L	65.6	2.83 ER	7.17	7.78	0.953 ER	22.1	ND	ND	1.32 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**6.82**	1.47 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.52 ER	0.538 ER	1.96 ER	ND	ND	ND
Selenium	40	µg/L	N/A	3.96 ER	ND	ND	5.85 ER	4.86 ER	ND	**86.4**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW20	M12MW20	M12MW20	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90370.07	90451.07	10049.06	10226.06	10379.06
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	ND	**13.3**
Arsenic	3	µg/L	N/A	**25.0**	0.800 ER	1.17 ER	ND	ND
Barium	6000	µg/L	699	28.6	30.4	22.0	25.6	26.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.75 ER	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	4.09 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.632 ER	1.25 ER	ND	ND
Selenium	40	µg/L	N/A	39.2	ND	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	7	8
WELL ID				M12MW21	M12MW21	M12MW21	LF1(1)	LF2(1)	M12MW21	M12MW21	MW21 Duplicate	M12MW21
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/12/2000	11/17/2000	11/17/2000	1/25/2001
ANALYTE / Lab ID				5199.09	5244.06	5430.09	5645.03	5732.04	5705.09	5861.09	5861.03	373
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	7.34	6.34	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	1.26	ND	NA	NA	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	NA	NA	ND	1.94	1.88	ND
TICs*	500	µg/L	N/A	17	35	32	NA	NA	**401**	13	5	18
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	4.14	3.04	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	**45.4**	**45**	ND
Barium	2000	µg/L	699	48.7	62.4	35.1	38.1	36	36.3	42	41.1	80.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	1.31	ND	ND	ND	ND	ND	2.24
Chromium	100	µg/L	N/A	ND	ND	5.19	ND	ND	ND	2.87	3.43	ND
Copper	1000	µg/L	65.6	4.28	ND	193	289	ND	480	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	**40.2**	**54.6**	ND	**82.9**	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.22	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.584	11.5	9.03	ND	13.2	ND	1.29	2.87
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	9	10	11	12	13	14	15	16	17
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16097.06	16444.09	16624.09	20094.09	20347.09	20599.09	20824.09	30125.09	30223.09
VOCs												
Acetone	700	µg/L	N/A	10.01	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	6.77	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	5	21	19	18	11	60	12
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.009
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	3.24	ND	ND
Arsenic	8	µg/L	N/A	4.01	ND	ND	ND	ND	**18.7**	ND	ND	4.77 ER
Barium	2000	µg/L	699	95.3	34.9	93.6	238	65.5	23.9	41.5	176	212
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.0432 ER	ND
Cadmium	4	µg/L	N/A	1.14	ND	ND	0.857	ND	0.836	ND	0.580 ER	1.88 ER
Chromium	100	µg/L	N/A	5.36	ND	0.678	0.865	ND	0.861	35.2	1.34 ER	2.24 ER
Copper	1000	µg/L	65.6	5.72	ND	ND	3.22	ND	6.25	2.43	7.73	ND
Lead	10	µg/L	N/A	1.47	ND	ND	1.52	ND	2.57	ND	1.84 ER	1.66 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	2	1.6	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	7.59	5.54	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.08	30715.04	40122.10	40342.07	40589.05	40780.02	50070.03	50237.05	50442.05
VOCs												
Acetone	700	µg/L	N/A	1.70 J	ND	ND	ND	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	114	ND	ND	ND	ND	ND	NA	NA	NA
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	14	ND	11	ND	15	ND	NA	NA	NA
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	4.03 ER	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	5.59	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	108	46.3	162	63	44.4	40.5	134	222	43.9
Beryllium	20	µg/L	N/A	0.144 ER	0.093 ER	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.41 ER	0.614 ER	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.95 ER	1.60 ER	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	2.19 ER	1.32 ER	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	5.17	1.87 ER	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				11/14/05	01/26/06	04/20/06	07/27/06	11/03/06	02/12/07	05/09/07
ANALYTE / Lab ID				50594.04	60058.05	60169.08	60341.04	60480.08	70055.08	70168.08
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	**11.4**	**4.20 ER**
Barium	2000	µg/L	699	62.5	45.1	336	43.5	52.8	580	348
Beryllium	1	µg/L	N/A	ND	ND	0.165 ER	ND	ND	0.279 ER	0.166 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	1.10 ER	**17.8**	2.94
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.22 ER
Copper	1300	µg/L	65.6	ND	ND	ND	3.02 ER	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.79 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	8.0 ER	1.63 ER	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	5.49 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.08	70499.08	80074.08	80165.08	80286.08	80390.08	90109.08	90221.08
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**11.8**	**6.20 ER**
Arsenic	3	µg/L	N/A	**5.52**	ND	ND	ND	2.78 ER	ND	**109**	**26.1**
Barium	6000	µg/L	699	47.0	69.2	61.3	57.1	43.7	55.0	71.6	65.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.866 ER	ND	ND	0.727 ER	ND	0.321 ER	ND	ND
Chromium	70	µg/L	N/A	ND	0.459 ER	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	3.54 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.40 ER	3.45 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.22 ER	0.755 ER	1.04 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	4.31 ER	6.04 ER	ND	**106**	8.14 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46	47
WELL ID				M12MW21	M12MW21	M12MW21	LF3(1)	LF4(1)	LF4(1) Duplicate
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010	9/9/2010
ANALYTE / Lab ID				90370.08	90451.08	10052.04	10234.04	10382.03	10382.02
Metals									
Antimony	6	µg/L	N/A	ND	**7.79 ER**	ND	**8.59 ER**	**18.9**	**20.2**
Arsenic	3	µg/L	N/A	**26.8**	1.74 ER	1.10 ER	ND	1.30 ER	1.17 ER
Barium	6000	µg/L	699	56.7	64.3	50.5	50.6	57.0	60.9
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.799 ER	0.776 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.180 ER	0.110 ER
Nickel	100	µg/L	187	ND	0.644 ER	1.02 ER	ND	ND	ND
Selenium	40	µg/L	N/A	**44.9**	ND	NR	NR	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	7	8	9
WELL ID				M12MW22	M12MW22	M12MW22	LF1(1)	LF2(1)	LF2(1) Duplicate	M12MW22	M12MW22	M12MW22	M12MW22
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.10	5244.07	5430.10	5645.02	5732.03	5732.02	5705.1	5861.1	372	16097.07
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	4.74	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
SVOCs													
Acenaphthene	400	µg/L	N/A	1.16	ND	ND	NA	NA	NA	ND	ND	ND	ND
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	1.19	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	1.45	ND	ND	NA	NA	NA	5.43	ND	ND	ND
Phenol	4000	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	9	33	NA	NA	NA	**600**	11	27	ND
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	3.13	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**10.1**	**22.8**	**30.7**	**52.9**	**21.6**	**23.6**	**34.8**	ND	**49.1**	**41.1**
Barium	2000	µg/L	699	43.5	42.8	15.8	39.5	40.8	41.4	54.8	66.6	34.6	37.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	0.589	ND	ND	ND	**6.51**
Chromium	100	µg/L	N/A	3.92	2.73	4.11	ND	ND	ND	11.4	1.44	1.65	15.9
Copper	1000	µg/L	65.6	ND	ND	9.8	ND	ND	ND	132	ND	ND	5.39
Lead	10	µg/L	N/A	ND	ND	ND	1.26	ND	**52.2**	**28.4**	ND	ND	4.14
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	0.12	ND	ND	ND	ND
Nickel	100	µg/L	187	14	ND	3.56	ND	ND	2.72	2.09	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	12	13	14	15	15	16	17
WELL ID				M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				9/22/2001	12/5/2001	2/14/2002	2/14/2002	6/4/2002	8/22/2002	11/19/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16444.10	16624.10	20094.10	20094.03	20347.10	20599.10	20824.10	20824.03	30125.10	30223.10
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	13.92	14.7	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Acenaphthene	400	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	12.98	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	1.29 J	1.41
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	4000	µg/L	N/A	3.09	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	68	5	ND	31	20	13	10	7	11	16
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	6.87	**22**	**42.6**	**40.6**	**44.2**	ND	**208**	**201**	**53.2**	**180**
Barium	2000	µg/L	699	19.3	27.4	38	38.4	30.3	47.4	61.6	39.5	45.8	74.2
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.58	3.1	3.06	2.78	ND	3.6	2.4	2.16	**4.94**
Chromium	100	µg/L	N/A	5.32	1.06	ND	ND	ND	1.32	ND	ND	1.88 ER	3.07 ER
Copper	1000	µg/L	65.6	2.23	ND	ND	ND	4.64	2.76	3.31	ND	ND	ND
Lead	10	µg/L	N/A	4.13	2.43	3.4	3.65	1.97	ND	4.01	3	2.75 ER	4.21 ER
Mercury	2	µg/L	N/A	ND	0.1	ND	0.87 B	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	13	11.1	15	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	24	25	26
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.07	30715.05	40122.07	40342.06	40589.06	40780.01	50070.04	50070.02	50237.06	50442.06
VOCs													
Acetone	700	µg/L	N/A	ND	4.01 B	ND	ND	9.4	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
SVOCs													
Acenaphthene	400	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	1.29 J	ND	NA	NA	NA	NA
Naphthalene	NLE	µg/L	N/A	2.4	1.04 ER	ND	1.59 J	1.05 J	ND	NA	NA	NA	NA
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	1.17 J	ND	NA	NA	NA	NA
Phenol	4000	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	14	ND	16	ND	56	ND	NA	NA	NA	NA
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**118**	**67.5**	**92.4**	**65.3**	**61.4**	**152**	**67**	**65.4**	**56**	**76.5**
Barium	2000	µg/L	699	55.9	51.5	60.9	62	53	69.6	48.3	47.3	48	43.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	**4.3**	1.35 ER	3.28	ND	**6.93**	ND	ND	ND	ND	**9.11**
Chromium	100	µg/L	N/A	2.70 ER	ND	5.05	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	3.19 ER	4.6	9.57	6.81	ND	**11**	**11.2**	9.59	ND	5.49
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	31	32	33
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.05	60058.06	60169.09	60341.05	60480.09	60480.02	70055.09	70168.09
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**97.5**	**37.7**	**68.5**	**86.1**	**72.8**	**73.4**	**94**	**47.9**
Barium	2000	µg/L	699	65.1	47.3	56.8	61.1	45.9	46.6	46.3	46.2
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	3.28	ND	ND	**17.8**	**18**	**15.3**	**10.0**
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.36 ER	2.11 ER	ND	ND	ND	ND
Lead	5	µg/L	N/A	**7.64**	**6.62**	ND	ND	ND	ND	ND	**11.8**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	1.69 ER	1.9 ER	1.36 ER	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.09	70499.09	80074.09	80165.09	80286.09	80390.09	90109.09	90221.09
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	4.48 ER	**11.0**	4.28 ER
Arsenic	3	µg/L	N/A	**63.8**	**40.4**	**25.5**	**93.4**	**68.8**	**55.8**	**113**	**110**
Barium	6000	µg/L	699	39.6	48.6	42.5	50.3	60.8	45.9	50.9	50.8
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	**11.4**	ND	ND	**8.20**	**10.3**	ND	ND	ND
Chromium	70	µg/L	N/A	0.935 ER	0.396 ER	0.362 ER	ND	0.840 ER	ND	ND	0.920 ER
Copper	1300	µg/L	65.6	ND	1.50 ER	4.39 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	**12.7**	ND	ND	**8.49**	**11.6**	ND	**12.0**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	2.08 ER	ND	1.38 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.39 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	45	46
WELL ID				M12MW22	M12MW22	M12MW22	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/4/2010	6/4/2010	9/9/2010
ANALYTE / Lab ID				90370.09	90451.09	10052.05	10235.03	10235.02	10382.07
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	**9.83 ER**	**11.8**	**17.7**
Arsenic	3	µg/L	N/A	**64.8**	**96.1**	**47.2**	**136**	**122**	**47.82**
Barium	6000	µg/L	699	50.3	52.0	24.2	48.8	51.6	43.6
Beryllium	1	µg/L	N/A	ND	ND	ND	0.138 ER	0.143 ER	ND
Cadmium	4	µg/L	N/A	**4.34**	ND	0.565 ER	2.43	2.72	3.65
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	**5.02**	**6.04**	ND	**7.00**	4.83 ER	**7.19**
Mercury	2	µg/L	N/A	ND	ND	ND	0.070 ER	0.070 ER	0.180 ER
Nickel	100	µg/L	187	ND	ND	ND	0.650 ER	0.579 ER	ND
Selenium	40	µg/L	N/A	ND	ND	NR	NR	NR	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9
WELL ID				M12MW23	M12MW23	M12MW23	LF1(1)	LF2(1)	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.11	5244.08	5430.11	5649.02	5732.05	5705.11	5861.11	371	16097.08
VOCs												
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	6	9	8	NA	NA	**331**	15	37	15
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	2.57
Barium	2000	µg/L	699	46.3	57	59.6	25.7	23.7	30.5	33.3	32.1	ND
Beryllium	20	µg/L	N/A	ND	ND	ND	2.15	2.04	2.23	1.52	0.819	0.785
Cadmium	4	µg/L	N/A	1.64	1.18	1.48	1.46	1.89	1.95	1.86	3.02	ND
Chromium	100	µg/L	N/A	2.04	ND	1.96	ND	ND	ND	2.43	1.15	ND
Copper	1000	µg/L	65.6	321	9.3	ND	ND	ND	ND	ND	5.21	ND
Lead	10	µg/L	N/A	**28.4**	6.29	4.35	2.14	ND	ND	ND	1.7	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	31.6	18.8	18.4	30.9	27	30.6	32.4	19.6	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3.47

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	13	14	15	16	16	17
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	MW23 Duplicate	M12MW23
Date Collected				9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	3/19/2003	5/14/2003
ANALYTE / Lab ID				16444.11	16624.11	20094.11	20347.11	20599.11	20824.11	30125.11	30125.03	30223.11
VOCs												
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	ND	5	14	22	11	16	16	11	13
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	4.09	ND	ND	ND	ND
Barium	2000	µg/L	699	29.5	24.3	25.4	24.2	41.3	24.6	28.3	44.4	56.4
Beryllium	20	µg/L	N/A	2.4	2.06	1.47	1.59	1.42	1.71	0.93	0.416 ER	ND
Cadmium	4	µg/L	N/A	1.37	1.34	1.27	1.28	0.921	1.49	1.53	1.37 ER	1.03 ER
Chromium	100	µg/L	N/A	3.83	5.04	2.88	2.31	12	2.75	2.62 ER	2.71 ER	6.59
Copper	1000	µg/L	65.6	7.53	4.58	5.43	7.07	10.8	7.7	9.39	20.4	6.75
Lead	10	µg/L	N/A	5.43	ND	2.1	ND	2.7	1.7	3.33 ER	5.27	3.23 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	37.2	30.8	28	29.1	21.8	28.1	22.4	12.6	16.9
Selenium	50	µg/L	N/A	ND	ND	5.84	ND	ND	3.81	6.93 ER	6.89 ER	3.18 ER

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.05	30715.06	40122.08	40342.05	40589.07	49780.03	50070.05	50237.07	50442.07
VOCs												
TICs*	500	µg/L	N/A	ND	ND	4	ND	ND	ND	NA	NA	NA
SVOCs												
TICs*	500	µg/L	N/A	17	4	12	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	3.45 ER	5.61	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	46.1	51.1	51.9	43.1	38.8	51.4	20.1	54.3	117
Beryllium	20	µg/L	N/A	0.956	0.716	0.644	0.853	1.6	1.13	1.44	ND	ND
Cadmium	4	µg/L	N/A	1.17 ER	1.04 ER	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.65 ER	1.57 ER	10.2	8.18	16.2	ND	9.63	ND	ND
Copper	1000	µg/L	65.6	6.72	7.1	ND	7.81	10	7.86	9.94	ND	ND
Lead	10	µg/L	N/A	3.41 ER	3.92 ER	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	19.9	16.7	15.6	21.8	28	23.8	28.4	7	10.1
Selenium	50	µg/L	N/A	ND	5.08 ER	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.06	60058.07	60169.10	60341.06	60480.10	70055.10	70168.10
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	2.01 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	**7.6**	ND	ND	2.99 ER	ND	ND	ND
Barium	2000	µg/L	699	75.1	40.2	126	110	67.4	79.4	79.5
Beryllium	1	µg/L	N/A	ND	ND	0.615	0.77	ND	0.883	0.460 ER
Cadmium	4	µg/L	N/A	ND	ND	2.24	2.57	0.971 ER	1.45 ER	1.73 ER
Chromium	70	µg/L	N/A	ND	ND	1.52 ER	ND	1.2 ER	1.13 ER	1.52 ER
Copper	1300	µg/L	65.6	ND	ND	2.75 ER	4.23 ER	0.794 ER	4.05 ER	2.65 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**15.3**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	10.4	ND	26.2	22.7	7.01	25.1	19.5
Selenium	40	µg/L	N/A	ND	ND	ND	ND	5.42 ER	4.56 ER	7.12 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after
the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.10	70499.10	80074.10	80165.10	80286.10	80390.10	90109.10	90221.10
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**7.04 ER**	3.14 ER
Arsenic	3	µg/L	N/A	2.98 ER	ND	2.8 ER	ND	ND	2.60 ER	**56.8**	**17.9**
Barium	6000	µg/L	699	85.9	42.1	44.9	46.8	31.8	40.8	36.5	46.7
Beryllium	1	µg/L	N/A	**1.23 ER**	0.324 ER	ND	ND	**1.84**	**1.87**	0.931	0.574
Cadmium	4	µg/L	N/A	2.23	0.860 ER	0.741 ER	0.634 ER	1.71 ER	2.27	1.14 ER	0.782 ER
Chromium	70	µg/L	N/A	1.35 ER	1.01 ER	1.71 ER	1.97 ER	1.60 ER	2.40 ER	1.17 ER	0.472 ER
Copper	1300	µg/L	65.6	1.05 ER	2.31 ER	6.07	3.92 ER	5.99	3.82 ER	3.70 ER	2.63 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	1.50 ER	4.83 ER	2.40 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	24.4	9.24	10.7	7.95	29.9	30.8	20.1	16.7
Selenium	40	µg/L	N/A	ND	4.33 ER	ND	3.94 ER	5.07 ER	ND	**65.9**	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW23	M12MW23	M12MW23	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/4/2010	9/10/2010
ANALYTE / Lab ID				90370.10	90451.10	10049.07	10235.05	10384.01
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	**6.75 ER**	**12.8**
Arsenic	3	µg/L	N/A	**15.0**	1.05 ER	ND	0.740 ER	**3.67 ER**
Barium	6000	µg/L	699	31.6	57.0	27.7	70.3	46.5
Beryllium	1	µg/L	N/A	**1.67**	0.568	0.271 ER	**1.23 ER**	**2.05**
Cadmium	4	µg/L	N/A	1.95 ER	1.13 ER	ND	1.86 ER	2.00 ER
Chromium	70	µg/L	N/A	ND	ND	2.59 ER	ND	2.04 ER
Copper	1300	µg/L	65.6	4.32 ER	ND	2.22 ER	3.41 ER	2.49 ER
Lead	5	µg/L	N/A	ND	ND	ND	2.78 ER	**5.49**
Mercury	2	µg/L	N/A	ND	ND	ND	0.070 ER	ND
Nickel	100	µg/L	187	25.7	18.0	10.8	32.4	36.3
Selenium	40	µg/L	N/A	30.2	10.9 ER	NR	NR	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	2	3	4	5	6
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	LF1(1)	LF2(1)	M12MW24
Date Collected				2/25/2000	3/14/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000
ANALYTE / Lab ID				5199.12	5244.09	5244.03	5430.12	5649.03	5735.06	5705.12
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND
TICs*	500	µg/L	N/A	ND	11	9	45	NA	NA	**279**
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.22	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.81	ND	4.72
Barium	2000	µg/L	699	26.2	29	29.1	15.3	33.1	29.9	35.4
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.62
Cadmium	4	µg/L	N/A	ND	1.13	0.932	0.682	ND	0.572	ND
Chromium	100	µg/L	N/A	1.79	ND	ND	1.72	ND	ND	ND
Copper	1000	µg/L	65.6	4.59	ND	ND	4.34	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	10	10.5	9.86	11.2	7.99	1.43	4.55
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	5.65	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	6	7	8	8	9	10	10
WELL ID				MW24 Duplicate	M12MW24	M12MW24	MW24 Duplicate	M12MW24	M12MW24	MW24 Duplicate
Date Collected				9/12/2000	11/17/2000	1/25/2001	1/25/2001	5/2/2001	9/22/2001	9/22/2001
ANALYTE / Lab ID				5705.03	5861.12	370	367	16097.09	16444.12	16444.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	14	13	16	13	ND	9	ND
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	3.75	ND	2.79
Barium	2000	µg/L	699	30.9	34.8	28.1	29.1	52.6	33.7	34.8
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	0.674	ND	ND
Cadmium	4	µg/L	N/A	ND	1.58	3.06	1.81	0.687	ND	ND
Chromium	100	µg/L	N/A	ND	6.87	1.95	0.75	23	4.61	2.9
Copper	1000	µg/L	65.6	ND	ND	5.98	3.6	13.2	2.5	7.3
Lead	10	µg/L	N/A	ND	ND	ND	ND	6.01	2.73	3.44
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.48	12.1	6.96	6.51	11	7.58	7.86
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	13	14	14	15
WELL ID				M12MW24	M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24
Date Collected				12/5/2001	2/14/2002	6/4/2002	6/4/2002	8/22/2002	8/22/2002	11/19/2002
ANALYTE / Lab ID				16624.12	20094.12	20347.12	20347.03	20599.12	20599.03	20824.12
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	1.42 B	ND
TICs*	500	µg/L	N/A	5	ND	23	17	15	12	13
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	2.6	ND	ND	ND	2.67	ND	ND
Barium	2000	µg/L	699	31.4	32.1	33.4	32.1	36.7	29.8	32.3
Beryllium	20	µg/L	N/A	0.59	0.691	ND	0.575	0.602	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	3.02	1.47	2.97	1.53	2.48	ND	ND
Copper	1000	µg/L	65.6	ND	ND	3.92	4.17	7.31	4.48	3.24
Lead	10	µg/L	N/A	1.36	ND	ND	ND	4.18	2.45	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	9.16	9.27	8.76	8.29	11.8	7.4	7.2
Selenium	50	µg/L	N/A	ND	6.15	5.92	7.9	5.95	4.31	9.13
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	16	17	17	18	18	19	19
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate
Date Collected				3/19/2003	5/14/2003	5/14/2003	7/23/2003	7/23/2003	11/6/2003	11/6/2003
ANALYTE / Lab ID				30125.12	30223.12	30223.03	30412.04	30412.03	30715.07	30715.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	16	18	7	5	9	7
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	4.5 ER	ND	ND	3.11 ER	ND
Barium	2000	µg/L	699	29	39.5	39.8	41	42.7	61.3	61.4
Beryllium	20	µg/L	N/A	0.467 ER	ND	ND	0.618	0.659	0.992	1
Cadmium	4	µg/L	N/A	0.693 ER	0.91 ER	ND	0.492 ER	0.755 ER	0.515 ER	0.564 ER
Chromium	100	µg/L	N/A	ND	12.2	10.9	1.21 ER	ND	ND	ND
Copper	1000	µg/L	65.6	3.28 ER	14.2	3.83 ER	1.31 ER	1.72 ER	2.44 ER	2.73 ER
Lead	10	µg/L	N/A	0.999 ER	3.19 ER	3.13 ER	ND	ND	ND	1.74 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	8.88	6.59	6.36	8.03	8.44	13.1	12.8
Selenium	50	µg/L	N/A	5.68 ER	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	21	21	22	22	23	23
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate
Date Collected				2/17/2004	5/7/2004	5/7/2004	8/10/2004	8/10/2004	11/16/2004	11/16/2004
ANALYTE / Lab ID				40122.09	40342.04	40342.03	40589.08	40589.03	40783.09	40783.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	ND	ND	ND	ND	10	17
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	67.9	34.9	33.3	67.5	58.1	97.5	97.1
Beryllium	20	µg/L	N/A	1.04	ND	ND	0.94	0.77	1.38	1.39
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	15	ND	ND	12.9	10.9	18.6	18.8
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	24	25	26
WELL ID				M12MW24	M12MW24	M12MW24
Date Collected				2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				50070.06	50237.08	50442.08
SVOCs						
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	NA	NA	NA
TICs*	500	µg/L	N/A	NA	NA	NA
Metals						
Antimony	20	µg/L	N/A	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND
Barium	2000	µg/L	699	83.8	34.1	46.6
Beryllium	20	µg/L	N/A	1.31	ND	0.628
Cadmium	4	µg/L	N/A	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND
Nickel	100	µg/L	187	18.4	ND	6.52
Selenium	50	µg/L	N/A	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.07	60058.08	60169.11	60341.07	60480.11	70055.11	70168.11
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	3.13 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	70.9	58.7	38.5	44.3	60.6	47.6	34.3
Beryllium	1	µg/L	N/A	**1.02**	**1.02**	0.647	ND	0.713 ER	0.72	0.211 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.427 ER	0.742 ER	0.255 ER
Chromium	70	µg/L	N/A	ND	ND	4.77 ER	ND	ND	ND	0.539 ER
Copper	1300	µg/L	65.6	5.24	ND	2.83 ER	2.95 ER	1.51 ER	0.916 ER	1.30 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	14.2	14.9	8.06	2.82 ER	9.88	9.42	3.16 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	7.16 ER	3.05 ER	5.08 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.11	70499.11	80074.11	80165.11	80286.11	80390.11	90109.11	90221.11
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.6**	2.37 ER
Arsenic	3	µg/L	N/A	**5.53**	ND	ND	ND	ND	ND	**72.8**	**16.7**
Barium	6000	µg/L	699	31.6	44.4	49.7	33.5	30.1	60.0	43.6	27.1
Beryllium	1	µg/L	N/A	ND	0.652	0.553	0.203 ER	ND	**1.44**	0.765	0.193 ER
Cadmium	4	µg/L	N/A	ND	0.507 ER	0.454 ER	0.689 ER	0.359 ER	1.41 ER	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	0.473 ER	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.03 ER	1.74 ER	6.20	1.35 ER	ND	0.821 ER	ND	0.928 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	4.67 ER	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.14 ER	9.1	12.7	5.51	2.29 ER	25.6	7.94	4.86 ER
Selenium	40	µg/L	N/A	3.72 ER	ND	ND	6.05 ER	6.31 ER	ND	**92.4**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW24	M12MW24	M12MW24	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.11	90451.11	10049.08	10234.05	10382.05
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	**6.25 ER**	**13.9**
Arsenic	3	µg/L	N/A	**17.3**	0.820 ER	ND	ND	1.24 ER
Barium	6000	µg/L	699	39.9	53.3	37.6	56.7	61.3
Beryllium	1	µg/L	N/A	0.432 ER	**1.24**	0.677	**1.35**	**1.78**
Cadmium	4	µg/L	N/A	ND	ND	0.817 ER	1.00 ER	1.05 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.59 ER	ND	4.06 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.210 ER
Nickel	100	µg/L	187	5.57	19.2	12.4	18.7	24.7
Selenium	40	µg/L	N/A	35.3	13.6 ER	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	1.21 ER	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	3	4	5	6	7	8	9
WELL ID				M12MW25	M12MW25	M12MW25	MW25 Duplicate	LF1(1)	LF2(1)	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				2/25/2000	3/14/2000	5/23/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.13	5244.10	5430.13	5430.03	5649.05	5735.04	5705.13	5861.13	369	16097.10
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	3.83	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	**90.51**	NA	NA	ND	ND	ND	ND
Butyl benzyl phthalate	100	µg/L	N/A	ND	2.38	ND	ND	NA	NA	ND	ND	ND	ND
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	4.65	NA	NA	ND	ND	ND	ND
2-Methylnapthalene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	1.69	ND	ND	ND	NA	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	ND	1.48	ND	ND	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	10	43	17	NA	NA	22	4	15	54
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.78	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	34.2	23.6	4.49	4.53	19.2	19.4	47.4	29.9	23.8	23.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	1.67	1.92	ND
Chromium	100	µg/L	N/A	2.05	0.774	1.47	2.19	ND	ND	ND	1.95	0.56	5.38
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	13.6	10.8
Lead	10	µg/L	N/A	ND	ND	ND	ND	1.12	ND	4.31	3.69	ND	2.49
Mercury	2	µg/L	N/A	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.78	0.685	1.71	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	3.51	ND	ND	ND	ND	ND	ND	ND	ND	4.98
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	13	14	15	16	17	18	19
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/25/2003	11/7/2003
ANALYTE / Lab ID				16444.13	16624.13	20094.13	20347.13	20599.13	20824.13	30125.13	30223.13	30425.09	30720.06
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.25 B
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	23	ND	32	6	13	14	25	13	6
Metals													
Antimony	20	µg/L	N/A	ND	ND	2.64	ND	ND	5.22	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	4.61 ER	2.64 ER	ND
Barium	2000	µg/L	699	52.6	94.7	47.3	18.6	69.6	33.7	17.1	26.5	26.9	37.6
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.033 ER	ND	ND	0.058 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	12.6	1.36	1.16	ND	1.25	0.993	ND	8.76	1.31 ER	12
Copper	1000	µg/L	65.6	4.45	3.87	ND	2.69	4.22	5.71	0.565 ER	7.71	1.11 ER	9.06
Lead	10	µg/L	N/A	3.11	3.69	ND	ND	2.01	ND	ND	1.84 ER	ND	3.48 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11 ER
Nickel	100	µg/L	187	ND	8.66	ND	ND	1.18	3.67	ND	ND	ND	1.23 ER
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	4.98	6.71 ER	7.71 ER	9.30 ER	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	21	22	23	24	24	25	25	26
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	MW25 Duplicate	M12MW25	MW25 Duplicate	M12MW25
Date Collected				2/18/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	2/9/2005	5/4/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				40123.06	40344.09	40591.08	40783.10	50080.08	50080.02	50237.09	50237.02	50442.09
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	9	ND	ND	ND	NA	NA	NA	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
2-Methylnapthalene	NLE	µg/L	N/A	1.24 J	ND	ND	ND	NA	NA	NA	NA	NA
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	12	8	17	ND	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	21.7	19.3	17.7	40.7	37.8	33.1	28.7	31.3	81.9
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	9.13	ND	ND	ND
Copper	1000	µg/L	65.6	ND	5.39	ND	ND	ND	5.75	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	5.87	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	32	33
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	MW25 Duplicate	M12MW25
Date Collected				11/15/2005	1/26/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.07	60058.09	60169.12	60342.07	60480.12	70055.12	70055.02	70168.12
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	5.81 ER	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	**3.8 ER**	ND	**4.49 ER**	**3.03 ER**	ND
Barium	2000	µg/L	699	49.7	22.2	30.7	28.6	23.6	31.6	31	24.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	0.369 ER	0.316 ER	ND
Chromium	70	µg/L	N/A	ND	ND	1.43 ER	0.843	ND	ND	ND	0.694 ER
Copper	1300	µg/L	65.6	ND	ND	4.73 ER	2.61 ER	ND	2.05 ER	1.39 ER	2.78 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	10.5 ER	6.62 ER	5.74 ER	8.73 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after
the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jerse

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.12	70499.12	80074.12	80165.12	80286.12	80390.12	90109.12	90221.12
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**21.0**	2.79 ER
Arsenic	3	µg/L	N/A	**8.41**	ND	ND	ND	**3.01 ER**	ND	**111**	**29.2**
Barium	6000	µg/L	699	28.5	36.8	29.1	25.7	66.8	256	31.4	38.2
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.578 ER	0.404 ER	ND	ND
Chromium	70	µg/L	N/A	0.220 ER	0.703 ER	1.26 ER	0.873 ER	ND	ND	0.438 ER	ND
Copper	1300	µg/L	65.6	1.24 ER	1.14 ER	8.70	7.35	ND	ND	0.746 ER	1.04 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.77 ER	1.33 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	6.82	2.20 ER	ND	ND	ND	1.38 ER
Selenium	40	µg/L	N/A	7.40 ER	ND	ND	7.22 ER	8.74 ER	ND	**91.5**	5.85 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	**2.15 ER**	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jerse

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW25	M12MW25	M12MW25	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.12	90451.12	10052.06	10234.06	10382.06
Metals								
Antimony	6	µg/L	N/A	ND	5.87 ER	5.23 ER	**6.44 ER**	**15.5**
Arsenic	3	µg/L	N/A	**29.2**	0.700 ER	1.69 ER	ND	0.890 ER
Barium	6000	µg/L	699	58.3	78.0	22.5	15.3	14.3
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.08 ER	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.821 ER	ND	ND	ND
Selenium	40	µg/L	N/A	**48.8**	11.5 ER	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	9
WELL ID				M12MW26	M12MW26	M12MW26	LF1(1)	LF2(1)	M12MW26	M12MW26	M12MW26	M12MW26	MW26 Duplicate
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001	5/2/2001
ANALYTE / Lab ID				5199.14	5244.11	5430.14	5645.04	5732.06	5705.14	5861.14	368	16097.11	16097.03
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	6.48	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	1.62	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	19	42	38	NA	NA	73	10	19	7	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	3.78	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.6**
Barium	2000	µg/L	699	45.4	30.1	72	43.5	42.2	49	55.3	50.4	208	180
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.946
Cadmium	4	µg/L	N/A	0.826	0.817	ND	0.795	ND	2.15	ND	2.46	**5.06**	**4.08**
Chromium	100	µg/L	N/A	7.76	3.19	4.64	ND	2.17	2.75	7.99	2.18	68.3	54.6
Copper	1000	µg/L	65.6	7.84	4.47	ND	385	9.42	ND	37.2	18	70.1	25.2
Lead	10	µg/L	N/A	ND	ND	ND	**70.8**	ND	5.75	**14**	ND	**10.6**	7.93
Mercury	2	µg/L	N/A	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	3.25	5.94	1.96	12.2	ND	ND	4.34	2.2	ND	5.76
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	34.2	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	11	12	13	14	15	16	17	18
WELL ID				M12MW26	M12MW26	MW26 Duplicate	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				9/22/2001	12/5/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/23/2003
ANALYTE / Lab ID				16444.14	16624.14	16624.03	20094.14	20347.14	20599.14	20824.14	30125.14	30223.14	30412.06
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	5	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	9	6	4	ND	25	11	11	13	12	7
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**8.94**	3.17 ER
Barium	2000	µg/L	699	107	50	53	162	125	42.4	31.2	36.4	218	29.8
Beryllium	20	µg/L	N/A	1.91	ND	ND	ND	ND	ND	ND	0.0728 ER	0.79 ER	0.0436 ER
Cadmium	4	µg/L	N/A	2.26	ND	ND	1.42	1.4	ND	0.937	ND	3.24	0.428 ER
Chromium	100	µg/L	N/A	13.8	3.35	4.76	6.17	23.6	5.66	ND	ND	52.4	3.18
Copper	1000	µg/L	65.6	228	ND	ND	ND	8	4.52	5.32	ND	13.9	ND
Lead	10	µg/L	N/A	**66.8**	ND	ND	1.93	3	1.77	ND	ND	6.62	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	34.5	ND	ND	ND	3	ND	ND	1.02 ER	5.74	ND
Selenium	50	µg/L	N/A	27.6	ND	ND	6.04	5	4.75	ND	7.4 ER	ND	ND
Thallium	10	µg/L	N/A	ND	ND	3.9	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	19	20	21	22	23	24	25	26	26
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	MW26 Duplicate
Date Collected				11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005	9/2/2005
ANALYTE / Lab ID				30715.08	40122.04	40342.08	40589.09	40780.04	50070.07	50237.10	50442.10	50442.02
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	4	ND	ND	ND	NA	NA	NA	NA
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	11	11	ND	ND	ND	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	5.09	5.48	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	40.4	49.7	92.5	36.7	26.1	23.8	41.1	25.6	28.7
Beryllium	20	µg/L	N/A	0.064 ER	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.15 ER	ND	ND	9.6	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	1.0 ER	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.0 ER	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				11/15/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.08	60058.10	60169.13	60341.08	60480.13	70055.13	70168.13
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	2.68 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	1.94	**5.01**	ND	**5.38**
Barium	2000	µg/L	699	34.1	17.7	48.7	30.7	15.3	33.8	58.1
Beryllium	1	µg/L	N/A	ND	ND	0.132 ER	ND	ND	ND	0.388 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	1.11 ER	2.25	0.780 ER	1.72 ER
Chromium	70	µg/L	N/A	ND	ND	0.854 ER	1.46 ER	ND	ND	0.469 ER
Copper	1300	µg/L	65.6	ND	9.33	ND	1.45 ER	ND	ND	3.86 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	3.56 ER	ND	1.30 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	4.53 ER	6.26 ER	2.87 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.13	70499.13	80074.13	80165.13	80286.13	80390.13	90109.13	90221.13
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**15.1**	3.69 ER
Arsenic	3	µg/L	N/A	**5.34**	2.84 ER	**6.37**	**4.06 ER**	**3.44 ER**	ND	**76.2**	**11.5**
Barium	6000	µg/L	699	34.6	39.1	78.7	41.9	46.1	41.4	38.5	19.7
Beryllium	1	µg/L	N/A	ND	0.177 ER	0.379 ER	0.295 ER	ND	0.117 ER	ND	0.114 ER
Cadmium	4	µg/L	N/A	0.632 ER	0.488 ER	0.822 ER	1.65 ER	0.454 ER	1.24 ER	ND	ND
Chromium	70	µg/L	N/A	0.397 ER	6.48	1.21 ER	1.74 ER	ND	2.32 ER	ND	1.12 ER
Copper	1300	µg/L	65.6	ND	12.7	15.9	5.97	ND	ND	1.15 ER	3.84 ER
Lead	5	µg/L	N/A	ND	ND	ND	2.16 ER	ND	ND	**5.56**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.34 ER	5.17	1.65 ER	0.650 ER	ND	ND	2.27 ER
Selenium	40	µg/L	N/A	3.47 ER	ND	ND	ND	6.88 ER	ND	**78.7**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	45	46
WELL ID				M12MW26	M12MW26	M12MW26	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/3/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.13	90451.13	10049.09	10234.03	10234.02	10382.04
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	5.87 ER	**6.70 ER**	**14.3**
Arsenic	3	µg/L	N/A	**20.4**	2.27 ER	1.85 ER	ND	ND	1.92 ER
Barium	6000	µg/L	699	31.8	27.1	23.1	27.1	24.9	38.3
Beryllium	1	µg/L	N/A	ND	ND	0.163 ER	ND	ND	0.105 ER
Cadmium	4	µg/L	N/A	ND	ND	0.856 ER	ND	ND	0.808 ER
Chromium	70	µg/L	N/A	ND	ND	1.74 ER	ND	ND	3.05 ER
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	1.70 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	2.80 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.01 ER	2.99 ER	ND	ND	ND
Selenium	40	µg/L	N/A	36.2	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1
WELL ID				M12MW14
Date Collected				8/20/2010
ANALYTE / Lab ID				10357.01
Metals				
Antimony	6	µg/L	N/A	ND
Arsenic	3	µg/L	N/A	0.680 ER
Barium	6000	µg/L	699	83.6
Beryllium	1	µg/L	N/A	0.800
Cadmium	4	µg/L	N/A	0.680 ER
Chromium	70	µg/L	N/A	ND
Copper	1300	µg/L	65.6	3.46 ER
Lead	5	µg/L	N/A	ND
Mercury	2	µg/L	N/A	ND
Nickel	100	µg/L	187	28.9
Selenium	40	µg/L	N/A	NR
Thallium	2	µg/L	N/A	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1
WELL ID				M12MW15
Date Collected				8/20/2010
ANALYTE / Lab ID				10357.02
Metals				
Antimony	6	µg/L	N/A	**10.2**
Arsenic	3	µg/L	N/A	0.680 ER
Barium	6000	µg/L	699	305
Beryllium	1	µg/L	N/A	0.815
Cadmium	4	µg/L	N/A	2.42
Chromium	70	µg/L	N/A	ND
Copper	1300	µg/L	65.6	4.93 ER
Lead	5	µg/L	N/A	3.19 ER
Mercury	2	µg/L	N/A	ND
Nickel	100	µg/L	187	ND
Selenium	40	µg/L	N/A	NR
Thallium	2	µg/L	N/A	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9
WELL ID				M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	8/6/1998	11/3/1998	1/29/1999	5/25/1999
ANALYTE / Lab ID				2687.02	2770.04	3148.04	3358.03	3553.03	3788.03	4025.04	4234.01	4508.04
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	11.08	8.92	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	2.83	ND	ND	ND
TICs*	500	µg/L	N/A	7	10	41	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	1.77	ND	ND	ND	ND
Di-*n*-butyl phthalate	900	µg/L	N/A	4.01	1.28	2.85	5.03 B	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	95	17	26	61	**800**	ND	10	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**10.0**	2.0	**20.0**	**26.0**	**16.8**	**20.2**	**23.2**	**14.8**	**30.3**
Barium	2000	µg/L	699	22.36	31.8	32.6	41.0	21.5	23.6	33.3	22.3	32.8
Beryllium	20	µg/L	N/A	0.11	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.751	ND	0.819
Chromium	100	µg/L	N/A	ND	0.9	3.0	4.0	ND	9.15	5.63	4.06	4.97
Copper	1000	µg/L	65.6	9.0	7.0	9.0	10.0	ND	ND	172	32.8	14.7
Lead	10	µg/L	N/A	ND	ND	6.0	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.3	ND	ND	ND	0.3	ND
Nickel	100	µg/L	187	ND	ND	2.3	4.3	2.8	0.779	3.0	3.4	1.8
Selenium	50	µg/L	N/A	2.0	3.0	ND	ND	ND	ND	ND	3.6	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC[2]	9	10	10	11	11	12	13	14	15
WELL ID				MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	LF1[1]	LF2[1]
Date Collected				5/25/1999	7/23/1999	7/23/1999	10/14/1999	10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000
ANALYTE / Lab ID				4508.06	4647.04	4647.03	4855.04	4855.03	5199.04	5430.04	5642.03	5728.04
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	7	33	24	22	26	8	**168**	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.33	ND	ND	4.35	ND
Arsenic	8	µg/L	N/A	**26.5**	**14.4**	**13.9**	**11.9**	**11.2**	**8.85**	4.99	**36.8**	**18.5**
Barium	2000	µg/L	699	32.8	17.8	17.4	18.7	20.1	15	ND	40.9	24.5
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.786	0.934	1.24	**4.01**	1.01	ND	ND	ND	ND
Chromium	100	µg/L	N/A	4.74	5.57	5.25	5.23	4.79	3.24	4.8	2.08	ND
Copper	1000	µg/L	65.6	28.6	ND	ND	30.5	37.1	5.19	ND	166	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	**35.8**	ND	ND	1.72	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.59	1.23	1.58	3.21	2.06	1.52	0.922	1.74	ND
Selenium	50	µg/L	N/A	ND	ND	ND	4.86	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	16	17	18	18	19	20	21	22	23
WELL ID				M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16
Date Collected				9/12/2000	11/17/2000	1/26/2001	1/26/2001	5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002
ANALYTE / Lab ID				5705.04	5861.04	393.04	392.03	16097.13	16444.04	16624.04	20094.04	20347.04
VOCs												
Acetone	700	µg/L	N/A	ND	8.38	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	3.04	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	**306**	4	63	57	16	ND	11	32	24
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**20.1**	**25.7**	**15.6**	**15.4**	**23.2**	**37**	**77.3**	**70.4**	**54.9**
Barium	2000	µg/L	699	20.5	26.6	24.3	24.1	31.3	39.0	36.0	35.3	37.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.24	ND	**4.86**	1.65	0.642	0.819	0.677	1.12
Chromium	100	µg/L	N/A	19.2	4.04	3.39	**241**	6.02	4.66	3.22	3.15	2.62
Copper	1000	µg/L	65.6	ND	ND	ND	ND	4.32	84.2	8.06	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	1.3	**13.5**	2.32	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.92 B	ND
Nickel	100	µg/L	187	6.17	2.35	ND	**113**	2.23	5.16	ND	ND	ND
Selenium	50	µg/L	N/A	ND	5.7	ND	ND	ND	ND	ND	10.2	9.07
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	4.8	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	24	25	26	27	28	29	29	30	30
WELL ID				M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate
Date Collected				8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	10/23/2003	10/23/2003	2/17/2004	2/17/2004
ANALYTE / Lab ID				20599.04	20824.04	30125.04	30223.04	30425.04	30675.04	30675.03	40122.04	40122.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	4
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	1.21 B	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n*-butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	11	7	11	**611**	13	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**78.5**	**76.8**	**23.5**	**53.6**	**41.5**	**120**	**118**	**67.4**	**66.3**
Barium	2000	µg/L	699	44.7	49.8	38.1	55	51.7	73.2	71.8	48.5	49.6
Beryllium	20	µg/L	N/A	ND	ND	0.163 ER	ND	0.0722 ER	0.294 ER	0.318 ER	ND	ND
Cadmium	4	µg/L	N/A	0.728	1.35	1.58 ER	1.47 ER	1.11 ER	0.880 ER	0.920 ER	ND	ND
Chromium	100	µg/L	N/A	3.49	2.08	1.74 ER	2.96 ER	2.33 ER	3.02 ER	2.87 ER	ND	ND
Copper	1000	µg/L	65.6	18	4.53	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	1.93	1.71	4.62 ER	ND	ND	1.60 ER	1.91 ER	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	1.62	ND	ND	1.48 ER	1.09 ER	1.88 ER	2.08 ER	ND	ND
Selenium	50	µg/L	N/A	7.02	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	31	31	32	33	34	35	35	36	36
WELL ID				M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate
Date Collected				5/10/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	5/5/2005	5/5/2005	9/7/2005	9/7/2005
ANALYTE / Lab ID				40344.04	40344.03	40591.04	40783.04	50080.03	50239.03	50239.02	50445.03	50445.02
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	26	19	18	ND	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**29.7**	**26.6**	**48**	**84.8**	ND	**18.6**	**20.8**	**39.3**	**37.5**
Barium	2000	µg/L	699	44.7	44.7	48.6	58	32.3	35.4	38.4	64.4	64.5
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	2.2	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	8.65	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	5.31	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	5.5	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	38	38	39	39	40	40	41	42	43	43
WELL ID				M12MW16	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	MW16 Duplicate
Date Collected				11/15/2005	1/27/2006	1/27/2006	4/20/2006	4/20/2006	7/28/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007	5/9/2007
ANALYTE / Lab ID				50595.03	60060.03	60060.02	60169.03	60169.02	60342.03	60342.02	60480.03	70055.03	70168.03	70168.02
Metals														
Antimony	6	µg/L	N/A	ND	ND	ND	ND	2.34 ER	**7.79 ER**	4.84 ER	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**75.6**	**45.1**	**46.7**	**25.2**	**25.8**	**36.7**	**41.4**	**68**	**52.2**	**42.3**	**38.5**
Barium	2000	µg/L	699	61.1	42.1	43.4	51.5	51.4	67.4	66.2	76.1	77.9	66.4	63
Beryllium	1	µg/L	N/A	ND	ND	ND	0.153 ER	0.118 ER	ND	ND	0.157 ER	0.203 ER	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	**4.06**	3.76	3.86	3.68
Chromium	70	µg/L	N/A	ND	ND	ND	2.3	1.95 ER	1.91 ER	2.26 ER	1.73 ER	1.45 ER	1.81 ER	1.75 ER
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	3.08 ER	1.70 ER	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.14 ER	3.58 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	2.36 ER	1.5 ER	2.98 ER	3.22 ER	1.77 ER	1.68 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.65 ER	3.37 ER	ND	3.91 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	44	45	45	46	46	47	48	48
WELL ID				M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	MW16 Duplicate	M12MW16	M12MW16	MW16 Duplicate
Date Collected				8/7/2007	8/7/2007	11/30/2007	11/30/2007	3/7/2008	3/7/2008	5/15/2008	8/7/2008	8/7/2008
ANALYTE / Lab ID				70299.03	70299.02	70499.03	70499.02	80074.03	80074.02	80165.03	80286.03	80286.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**24.5**	**29.5**	**68.7**	**77.5**	**45.1**	**40.8**	**23.3**	**22.0**	**21.6**
Barium	6000	µg/L	699	68.3	69.1	210	212	110	113	53.0	118	118
Beryllium	1	µg/L	N/A	ND	ND	0.559	0.566	0.182 ER	0.173 ER	ND	0.131 ER	0.155 ER
Cadmium	4	µg/L	N/A	2.01	2.06	ND	ND	ND	ND	2.84	3.11	2.91
Chromium	70	µg/L	N/A	1.06 ER	1.25 ER	1.42	1.67 ER	1.88 ER	1.85 ER	2.02 ER	0.901 ER	0.746 ER
Copper	1300	µg/L	65.6	ND	ND	0.561 ER	0.770 ER	4.66 ER	4.29 ER	ND	ND	ND
Lead	5	µg/L	N/A	0.863 ER	ND	ND	ND	ND	ND	2.66 ER	2.97 ER	1.86 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	1.31 ER	0.973 ER	8.79	8.67	7.20	6.92	0.934 ER	3.59 ER	3.43 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-1
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	49	49	50	51	52	53	54	55	56
WELL ID				M12MW16	MW16 Duplicate	M12MW16	M12MW16	M12MW16	M12MW16	M12MW16	LF3(1)	LF4(1)
Date Collected				10/27/2008	10/27/2008	3/13/2009	6/25/2009	9/8/2009	11/18/2009	2/4/2010	6/4/2010	9/9/2010
ANALYTE / Lab ID				80390.03	80390.02	90109.03	90263.01	90370.03	90451.03	10049.03	10235.04	10382.08
Metals												
Antimony	6	µg/L	N/A	1.39 ER	ND	**12.8**	2.31 ER	ND	ND	ND	**7.81 ER**	**12.8**
Arsenic	3	µg/L	N/A	**43.5**	**58.7**	**84.2**	**57.5**	**55.0**	**39.1**	**25.3**	**19.92**	**47.03**
Barium	6000	µg/L	699	286	282	102	97.8	205	213	84.9	69.3	135
Beryllium	1	µg/L	N/A	**1.03**	**1.37**	0.109 ER	0.246 ER	0.651	0.628	0.106 ER	0.169 ER	0.231 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	0.441 ER	2.08	ND	ND	1.41 ER	2.46
Chromium	70	µg/L	N/A	0.732 ER	1.92 ER	1.82 ER	1.84 ER	ND	ND	ND	ND	1.78 ER
Copper	1300	µg/L	65.6	ND	ND	ND	0.979 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	**10.2**	ND	ND	ND	2.58 ER	ND	**5.31**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.090 ER	0.190 ER
Nickel	100	µg/L	187	11.6	10.2	ND	2.55 ER	6.95	10.6	4.14 ER	1.98 ER	3.75 ER
Selenium	40	µg/L	N/A	ND	ND	29.6	13.4	20.8	ND	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	10
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	8/6/1998	11/3/1998	1/29/1999	5/25/1999	7/23/1999
ANALYTE / Lab ID				2687.03	2770.05	3148.05	3358.04	3553.04	3788.04	4025.03	4234.02	4508.05	4647.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	5.92	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	ND	ND	ND	ND	ND	1.26	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	28	ND	7	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	5.06	ND	3.67	5.13 B	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	201	16	**144**	154	**733**	ND	11	ND	ND	39
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	17.4	9.0	6.3	61	18.7	98.7	20.5	34.1	15.0	12.6
Beryllium	20	µg/L	N/A	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**19.4**	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	1.27	2.04	1.68	ND	1.43
Copper	1000	µg/L	65.6	10	9.0	11.0	15.0	ND	ND	285	ND	7.16	4.01
Lead	10	µg/L	N/A	0.7	ND	7.0	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.3	ND	ND	ND	0.22	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	3.6	2.5	ND	1.75	1.46	ND	0.938
Selenium	50	µg/L	N/A	1.0	2.0	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	14	15	16	17	18	19	20
WELL ID				M12MW17	M12MW17	M12MW17	LF1(1)	LF2(1)	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000	9/12/2000	11/17/2000	1/26/2001	5/2/2001	9/22/2001
ANALYTE / Lab ID				4855.05	5199.05	5430.05	5642.04	5728.05	5705.05	5861.05	394	16097.14	16444.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	1.54	ND	ND	NA	NA	1.51	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	45	39	34	NA	NA	40	10	31	10	29
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	0.033	ND
Metals													
Antimony	20	µg/L	N/A	2.47	ND	ND	2.89	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**20.2**	ND
Barium	2000	µg/L	699	100	8.13	ND	184	170	363	51.1	17.8	98.7	4.93
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.41	ND	ND	ND	0.763	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	2.61	ND	2.47	ND	ND	ND	1.32	ND	**101**	1.6
Copper	1000	µg/L	65.6	24.6	3.66	4.89	140	461	ND	ND	ND	160	69.1
Lead	10	µg/L	N/A	ND	ND	ND	ND	**80.6**	6.61	ND	ND	**66.9**	7.98
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.36	ND
Nickel	100	µg/L	187	0.66	ND	2.24	3.73	6.35	ND	ND	ND	11.8	2.69
Selenium	50	µg/L	N/A	4.43	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	21	22	23	24	25	26	27	28	28	29
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17
Date Collected				12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	7/25/2003	10/23/2003
ANALYTE / Lab ID				16624.05	20094.05	20347.05	20599.05	20824.05	30125.05	30223.05	30425.05	30425.03	30675.05
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	N/A	ND	ND	ND	ND	1.35	ND	ND	1.19 J	1.15 J	ND
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	1.25 B	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	38	29	30	10	9	26	31	12	12	4
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	3.73	2.86	ND	2.1 ER	2.43 ER	ND	ND
Barium	2000	µg/L	699	42.1	19.7	111	65.7	380	11.2	15.2	69.4	70.6	6.47
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.052 ER	ND	ND	ND	0.171 ER
Cadmium	4	µg/L	N/A	ND	ND	0.658	ND	0.903	ND	ND	0.580 ER	0.513 ER	ND
Chromium	100	µg/L	N/A	ND	0.857	ND	0.589	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	5.53	5.51	4.84	4.48	10.5	1.70 ER	2.37 ER	0.770 ER	1.0	ND
Lead	10	µg/L	N/A	1.69	ND	ND	ND	4.53	ND	ND	ND	0.922 ER	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	1.32	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	6.69	ND	ND	ND	5.53 ER	5.15 ER	ND	4.91 ER	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	30	31	32	32	33	34	35	36
WELL ID				M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				2/17/2004	5/10/2004	8/11/2004	8/11/2004	11/16/2004	2/9/2005	5/5/2005	9/7/2005
ANALYTE / Lab ID				40122.05	40344.05	40591.05	40591.03	40783.05	50080.04	50239.04	50445.04
VOCs											
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Chlorobenzene	4	µg/L	N/A	0.49 J	0.48 J	ND	ND	1.09 J	NA	NA	NA
1,4-Dichlorobenzene	75	µg/L	N/A	ND	ND	ND	ND	0.48 J	NA	NA	NA
TICs*	500	µg/L	N/A	4	ND	ND	ND	ND	NA	NA	NA
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	6	ND	5	ND	ND	NA	NA	NA
Pesticides/PCBs											
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Metals											
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	101	62.2	7.46	6.58	275	28.1	75.1	154
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	2.74
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	7.67	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	38	39	40	41	42	43
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17	M12MW17
Date Collected				11/15/2005	1/27/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.04	60060.04	60169.04	60342.04	60480.04	70055.04	70168.04
Metals										
Antimony	6	µg/L	N/A	ND	ND	2.03 ER	**9.26** ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	2.54 ER	ND
Barium	2000	µg/L	699	121	37.8	87.2	134	314	83.1	89.6
Beryllium	1	µg/L	N/A	ND	ND	0.106 ER	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	**4.98**	2.06	2.0 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.548 ER
Copper	1300	µg/L	65.6	ND	ND	1.67 ER	2.51 ER	ND	ND	4.59 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.27 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	5.43 ER	3.56 ER	5.88 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after
the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	45	46	47	47	48	49	50	50
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	MW17 Duplicate	M12MW17	M12MW17	M12MW17	MW17 Duplicate
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	3/13/2009
ANALYTE / Lab ID				70299.04	70499.04	80074.04	80165.04	80165.02	80286.04	80390.04	90109.04	90109.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	**15.6**	**10.9**
Arsenic	3	µg/L	N/A	**3.77 ER**	ND	ND	ND	ND	ND	ND	**83.0**	**80.6**
Barium	6000	µg/L	699	62.4	16.7	33.2	73.0	72.2	114	42.6	112	117
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.28 ER	ND	ND	1.37 ER	1.36 ER	2.1	0.294 ER	ND	ND
Chromium	70	µg/L	N/A	ND	0.4 ER	0.240 ER	0.486 ER	0.679 ER	ND	ND	ND	1.01 ER
Copper	1300	µg/L	65.6	ND	ND	4.31 ER	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	1.83 ER	ND	**6.17**	4.44 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.54 ER	ND	ND	ND	ND	ND	1.55 ER
Selenium	40	µg/L	N/A	4.59 ER	ND	ND	ND	ND	ND	ND	**72.7**	**70.8**
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.69 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-2
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	51	52	53	54	55	55	56
WELL ID				M12MW17	M12MW17	M12MW17	M12MW17	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				6/8/2009	9/8/2009	11/18/2009	2/4/2010	6/2/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90221.04	90370.04	90451.04	10049.04	10226.03	10226.02	10379.04
Metals										
Antimony	6	µg/L	N/A	3.95 ER	ND	ND	ND	**7.94 ER**	5.34 ER	**16.1**
Arsenic	3	µg/L	N/A	**27.7**	**21.6**	0.770 ER	0.660 ER	ND	ND	0.670 ER
Barium	6000	µg/L	699	122	80.7	39.3	33.2	4.53 ER	4.64 ER	4.35 ER
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.54 ER	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.29 ER	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	2.55 ER	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.060 ER
Nickel	100	µg/L	187	ND	ND	ND	0.996 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	36.7	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	1.76 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	6	7
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	M12MW18
Date Collected				6/12/1997	7/2/1997	11/6/1997	2/20/1998	5/7/1998	5/7/1998	8/6/1998	8/6/1998	11/3/1998
ANALYTE / Lab ID				2687.01	2770.03	3148.03	3358.05	3553.05	3553.06	3788.05	3788.06	4025.05
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	8.18	6.6	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.55	1.99	ND
TICs*	500	µg/L	N/A	14	ND	ND	21	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	20.1
Diethyl phthalate	5000	µg/L	N/A	ND	ND	1.14	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	2.78	1.23	11.17	5.91 B	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	71	17	20	35	**900**	**870**	ND	ND	ND
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	11.0	ND	ND	ND	2.42	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	147.2	136.1	95.0	90.0	114.0	117.0	108.0	109.0	119.0
Beryllium	20	µg/L	N/A	0.18	1.2	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	2.0	ND	ND	1.0	0.6	0.8	1.66	ND	ND
Chromium	100	µg/L	N/A	3.0	ND	1.6	2.2	ND	ND	1.32	1.24	3.17
Copper	1000	µg/L	65.6	21	9.0	10.0	16.0	5.5	5.0	ND	ND	123.0
Lead	10	µg/L	N/A	0.6	ND	15.0	6.0	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	0.8	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	6.0	7.7	5.1	4.9	3.62	3.27	5.62
Selenium	50	µg/L	N/A	2.0	2.0	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	7	8	9	10	11	12	13	14	15
WELL ID				MW18 Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	LF1(1)	LF2(1)
Date Collected				11/3/1998	1/29/1999	5/25/1999	7/23/1999	10/14/1999	2/25/2000	5/23/2000	8/18/2000	9/9/2000
ANALYTE / Lab ID				4025.06	4234.03	4508.03	4647.06	4855.06	5199.06	5430.06	5642.02	5728.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Diethyl phthalate	5000	µg/L	N/A	ND	ND	ND	ND	ND	1.91	ND	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
TICs*	500	µg/L	N/A	10	ND	ND	36	38	14	34	NA	NA
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.54	ND	ND	3.87	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	118.0	115.0	92.6	96.2	116	114	89.6	122	123
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	0.709	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.68	1.68	0.58	1.4	2.48	ND	2.34	3.22	ND
Copper	1000	µg/L	65.6	92.9	3.37	30.6	3.73	23.3	ND	ND	488	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.74	ND
Mercury	2	µg/L	N/A	ND	0.17	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	5.16	4.08	5.41	3.97	3.97	3.07	7.63	8.86	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	3.52	4.65	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	15	16	17	18	19	19	20	21	22
WELL ID				LF2(1) Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate	M12MW18	M12MW18	M12MW18
Date Collected				9/9/2000	9/12/2000	11/17/2000	1/26/2001	5/2/2001	5/2/2001	9/22/2001	12/5/2001	2/14/2002
ANALYTE / Lab ID				5728.02	5705.06	5861.06	395	16097.15	16097.18	16444.06	16624.06	20094.06
VOCs												
Acetone	700	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	NA	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	NA	240	10	16	19	10	ND	4	35
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	NA	ND	ND	ND	ND	ND	0.005	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	NA	ND	ND	ND	ND	ND	0.006	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	5.13	ND	ND	ND
Barium	2000	µg/L	699	123	103	121	97.2	76.7	87.1	92.7	87.9	110
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.676	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	0.656	ND	**4.16**	ND	0.627	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	0.655	ND	1.5	2.84	0.562	1.72	1.14
Copper	1000	µg/L	65.6	ND	ND	ND	3.26	3.7	6.19	3.23	137	4.27
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	2.46	ND	**17**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	4.1	1.48	3.19	5.48	2.07	9.82	3.44
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	3.88	ND	ND	9.32
Thallium	10	µg/L	N/A	ND	ND	ND	4.22	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	23	24	25	26	27	28	29	30	31
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				6/4/2002	8/22/2002	11/20/2002	3/19/2003	5/14/2003	7/25/2003	10/23/2003	2/17/2004	5/10/2004
ANALYTE / Lab ID				20347.06	20599.06	20824.06	30125.06	30223.06	30425.06	30675.06	40122.06	40344.06
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	26	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	1.07 B	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	27	10	10	29	17	15	ND	ND	ND
Pesticides/PCBs												
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.4 ER	ND	ND	ND	ND
Barium	2000	µg/L	699	68	69.9	138	120	107	75.4	113	132	112
Beryllium	20	µg/L	N/A	ND	ND	ND	0.402 ER	ND	0.266 ER	0.523	ND	ND
Cadmium	4	µg/L	N/A	0.923	0.98	ND	0.742 ER	0.55 ER	0.563 ER	ND	ND	ND
Chromium	100	µg/L	N/A	ND	0.696	ND	1.37 ER	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	4.78	503	3.6	8.36	2.87 ER	0.723 ER	0.595 ER	31.8	ND
Lead	10	µg/L	N/A	ND	**34.3**	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	3.19	28.2	3.98	4.51 ER	3.56 ER	3.78 ER	3.19 ER	ND	ND
Selenium	50	µg/L	N/A	ND	4.02	6.1	ND	ND	5.66 ER	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	4.22	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	32	33	34	35	36
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				8/11/2004	11/16/2004	2/9/2005	5/5/2005	9/7/2005
ANALYTE / Lab ID				40591.06	40783.06	50080.05	50239.05	50445.05
VOCs								
Acetone	700	µg/L	N/A	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	NA	NA	NA
SVOCs								
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	NA	NA	NA
Diethyl phthalate	5000	µg/L	N/A	ND	ND	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	N/A	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	34	ND	NA	NA	NA
Pesticides/PCBs								
alpha-Chlordane	0.1	µg/L	N/A	ND	ND	NA	NA	NA
gamma-Chlordane	NLE	µg/L	N/A	ND	ND	NA	NA	NA
Metals								
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	67.9	124	11.4	84.61	71.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	37	37	38	39	40	41	42	43
WELL ID				M12MW18	MW18 Duplicate	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18
Date Collected				11/15/2005	11/15/2005	1/27/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.05	50595.02	60060.05	60169.05	60342.05	60480.05	70055.05	70168.05
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	5.01 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	93	94.9	130	115	104	161	228	310
Beryllium	1	µg/L	N/A	ND	ND	0.545	0.449 ER	0.180 ER	0.400 ER	0.662	0.734
Cadmium	4	µg/L	N/A	ND	ND	ND	0.375 ER	0.877 ER	0.400 ER	0.521 ER	0.909 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	1.25 ER	2.53 ER	ND	1.45 ER	3.46 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	3.85 ER	3.62 ER	4.0 ER	5.49	8.73
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	5.0 ER	3.76 ER	3.62 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	44	45	46	47	48	49	50	51	51
WELL ID				M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	M12MW18	MW18 Duplicate
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009	6/8/2009
ANALYTE / Lab ID				70299.05	70499.05	80074.05	80165.05	80286.05	80390.05	90109.05	90221.05	90221.02
Metals												
Antimony	6	µg/L	N/A	ND	0.718 ER	ND	ND	ND	ND	**15.5**	2.89 ER	2.53 ER
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	**32.3**	**14.3**	**14.7**
Barium	6000	µg/L	699	215	340	424	313	314	316	280	232	238
Beryllium	1	µg/L	N/A	0.561	0.984	**1.11**	0.87	0.823	0.94	0.809	0.746	0.767
Cadmium	4	µg/L	N/A	0.92 ER	0.810 ER	1.18 ER	0.946 ER	1.26 ER	1.05 ER	0.745 ER	0.633 ER	0.700 ER
Chromium	70	µg/L	N/A	ND	0.4 ER	0.417 ER	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	2.16 ER	3.38 ER	7.92	3.09 ER	1.63 ER	ND	0.846 ER	2.34 ER	2.41 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**5.67**	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.36	8.61	15.2	10.3	9.39	8.75	6.77	8.67	8.85
Selenium	40	µg/L	N/A	ND	ND	ND	5.85 ER	5.05 ER	ND	**63.7**	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-3
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	52	52	53	53	54	54	55	56	56
WELL ID				M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	M12MW18	MW18 Duplicate	LF3(1)	LF4(1)	LF4(1) Duplicate
Date Collected				9/8/2009	9/8/2009	11/18/2009	11/18/2009	2/4/2010	2/4/2010	6/2/2010	9/8/2010	9/8/2010
ANALYTE / Lab ID				90370.05	90370.02	90451.05	90451.02	10049.05	10049.02	10226.04	10379.03	10319.02
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	5.49 ER	**8.99 ER**
Arsenic	3	µg/L	N/A	**9.26**	**6.83**	1.11 ER	ND	ND	0.880 ER	ND	1.20 ER	0.990 ER
Barium	6000	µg/L	699	239	239	256	258	146	140	137	169	169
Beryllium	1	µg/L	N/A	0.767	0.792 ER	0.801	0.819	0.446 ER	0.437 ER	0.554	0.655	0.651
Cadmium	4	µg/L	N/A	0.739 ER	0.627 ER	ND	ND	ND	ND	ND	0.749 ER	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	2.53 ER	2.92 ER	ND	ND	2.16 ER	1.16 ER	ND	2.26 ER	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	7.06	7.25	9.12	9.03	6.30	6.26	5.44	5.66	5.52
Selenium	40	µg/L	N/A	27.0	18.0	9.05 ER	ND	NR	NR	NR	ND	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.94 ER	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	7	8
WELL ID				M12MW19	M12MW19	M12MW19	LF1(1)	LF2(1)	LF2(1) Duplicate	M12MW19	M12MW19	M12MW19
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001
ANALYTE / Lab ID				5199.07	5244.04	5430.07	5649.04	5735.03	5735.02	5705.07	5861.07	375
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	4.14	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	ND	10	9	NA	NA	NA	**493**	8	32
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
4,4'-DDT	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	2.24	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	2.91	9.8	ND	6.28	6.81	6.85	10.0	11.1	7.22
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.09	ND	ND	ND	ND	ND	ND	**4.58**
Chromium	100	µg/L	N/A	2.11	ND	1.47	ND	ND	ND	ND	2.83	3.03
Copper	1000	µg/L	65.6	8.62	ND	ND	ND	ND	ND	ND	ND	271
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	5.26	8.05	**42.8**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.36	3.48	1.47	ND	ND	ND	ND	2.69	7.64
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	9	10	11	12	13	14	15	16	17
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16097.04	16444.07	16624.07	20094.07	20347.07	20599.07	20824.07	30125.07	30223.07
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	5
SVOCs												
TICs*	500	µg/L	N/A	ND	7	17	35	19	8	10	67	19
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.008
4,4'-DDD	0.1	µg/L	N/A	ND	ND	0.002	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.1	µg/L	N/A	ND	0.006	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.7	ND	2.77	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	4.09	ND	ND	2.89 ER
Barium	2000	µg/L	699	9.62	7.64	9.59	9.19	540	7.46	7.01	5.89	8.24
Beryllium	20	µg/L	N/A	ND	ND	ND	1.53	0.631	ND	0.857	0.171 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	2.85	3.32	1.69	ND	1.71	0.80 ER	1.22 ER
Chromium	100	µg/L	N/A	7.35	41	7.89	5.57	2.47	4.31	2.62	ND	1.82 ER
Copper	1000	µg/L	65.6	11	8.17	33.4	37.4	22.4	47.6	2.47	2.97	17.6
Lead	10	µg/L	N/A	8.86	**21.8**	**13.3**	**18.0**	**237**	9.51	2.83	ND	3.62 ER
Mercury	2	µg/L	N/A	ND	0.11	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	7.59	8.61	6.28	8.72	3.97	6.52	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	4.58	ND	ND	ND	7.71 ER	4.56 ER
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				7/25/2003	11/7/2003	2/18/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30425.07	30720.04	40123.04	40344.07	40591.07	40783.07	50080.06	50237.03	50442.03
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	11	ND	ND	ND	NA	NA	NA
SVOCs												
TICs*	500	µg/L	N/A	13	4	ND	ND	40	ND	NA	NA	NA
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDT	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	8.71	33.6	7.07	9	11	8.18	95.1	12	11
Beryllium	20	µg/L	N/A	0.229 ER	1.87	0.791	ND	0.747	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.965 ER	1.77 ER	2.88	ND	2.72	ND	ND	ND	ND
Chromium	100	µg/L	N/A	4.14 ER	2.87 ER	5.02	ND	11.1	ND	ND	ND	ND
Copper	1000	µg/L	65.6	15.4	19.9	19.8	19.4	35.9	12.3	ND	ND	ND
Lead	10	µg/L	N/A	3.44 ER	7.55	8.98	6.76	**16.8**	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	4.36 ER	28.4	ND	ND	10.6	ND	ND	ND	ND
Selenium	50	µg/L	N/A	6.10 ER	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	28	29	30	31	32	33
WELL ID				M12MW19	M12MW19	MW19 Duplicate	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				11/15/2005	1/26/2006	1/26/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.06	60058.03	60058.02	60169.06	60342.06	60480.06	70055.06	70168.06
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	4.27 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	2.79 ER	ND	ND	ND
Barium	2000	µg/L	699	18.3	7.94	8.27	8.13	10.2	6.96	7.84	7.92
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.116 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.383 ER	ND	0.342 ER	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	9.78	ND	ND	ND	1.07 ER	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	14.6	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	9.32 ER	5.08 ER	7.42 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19	M12MW19
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.06	70499.06	80074.06	80165.06	80286.06	80390.06	90109.06	90221.06
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	2.89 ER	ND	**16.5**	4.52 ER
Arsenic	3	µg/L	N/A	**3.47 ER**	ND	ND	ND	ND	ND	**91.1**	**28.3**
Barium	6000	µg/L	699	9.73	6.51	9.88	27.4	12.3	11.8	9.24	8.72
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	**1.15**	0.124 ER
Cadmium	4	µg/L	N/A	ND	0.319 ER	0.301 ER	0.374 ER	ND	0.880 ER	0.836 ER	0.219 ER
Chromium	70	µg/L	N/A	ND	0.338 ER	0.215 ER	1.06 ER	ND	0.544 ER	1.07 ER	0.539 ER
Copper	1300	µg/L	65.6	ND	ND	2.91 ER	10.9	ND	3.57 ER	404	9.91
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.0**	1.57 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	5.28	23.8	1.72 ER	0.775 ER	ND	3.41 ER
Selenium	40	µg/L	N/A	6.95 ER	ND	ND	7.82 ER	8.01 ER	ND	**79.5**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-4
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	44	45	46
WELL ID				M12MW19	M12MW19	M12MW19	MW19 Duplicate	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	2/5/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90370.06	90451.06	10052.03	10052.02	10226.05	10379.05
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	ND	4.91 ER	**13.7**
Arsenic	3	µg/L	N/A	**25.4**	0.990 ER	0.690 ER	ND	ND	0.970 ER
Barium	6000	µg/L	699	7.92	16.9	3.43 ER	2.80 ER	5.81	6.08
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.07 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	0.120 ER
Nickel	100	µg/L	187	ND	3.05 ER	ND	ND	ND	ND
Selenium	40	µg/L	N/A	36.6	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	0.720 ER	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	10
WELL ID				M12MW20	M12MW20	M12MW20	LF1(1)	LF2(1)	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001	9/22/2001
ANALYTE / Lab ID				5199.08	5244.05	5430.08	5649.06	5735.05	5705.08	5861.08	374	16097.05	16444.08
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	7.97	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	5.1	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	2.62	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	22	9	18	NA	NA	**386**	11	38	ND	ND
Pesticides/PCBs													
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	4.23	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	4.49	ND
Barium	2000	µg/L	699	31.1	30.8	21.5	28.7	30.7	34	33.8	34.4	132	39.4
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	1.55	ND	ND	0.831	3.92	1.09	3.6	ND
Chromium	100	µg/L	N/A	ND	ND	2.23	ND	ND	ND	3.01	ND	24.9	4.45
Copper	1000	µg/L	65.6	5.68	ND	3.4	ND	ND	224	411	14.6	13.7	4.46
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	**37.1**	**55.9**	1.64	**52.5**	**15.1**
Mercury	2	µg/L	N/A	ND	ND	0.2	ND	ND	ND	ND	ND	0.26	1.01
Nickel	100	µg/L	187	ND	1.44	1.86	ND	ND	4.63	12.7	ND	1.83	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	6.74	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	14	15	16	17	18	19	19
WELL ID				M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	MW20 Duplicate
Date Collected				12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/25/2003	11/7/2003	11/7/2003
ANALYTE / Lab ID				16624.08	20094.08	20347.08	20599.08	20824.08	30125.08	30223.08	30425.08	30720.05	30720.03
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	22	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	5	5	6	11	11	12	15	13	8	10
Pesticides/PCBs													
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.008	ND	ND	ND
4,4'-DDD	0.1	µg/L	N/A	0.003	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.57	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.3	ND	3.48 ER	ND	ND	ND
Barium	2000	µg/L	699	44.2	48.6	55.4	35.7	32.6	38.3	119	58	41.5	38.8
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	0.0375 ER	ND	0.0606 ER	0.036 ER	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.43 ER	0.789 ER	ND	ND
Chromium	100	µg/L	N/A	2.9	2.62	ND	0.659	1.62	1.53 ER	0.72 ER	ND	ND	ND
Copper	1000	µg/L	65.6	69.9	ND	ND	11.8	23.3	3.95 ER	17.3	31.2	20.3	19.3
Lead	10	µg/L	N/A	**18.1**	5.96	1.8	3.18	1.13	2.59 ER	ND	ND	1.54 ER	1.44 ER
Mercury	2	µg/L	N/A	0.3	0.29	0.45	0.14	ND	ND	ND	ND	0.4	0.17 ER
Nickel	100	µg/L	187	2.79	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	3.73	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	20	21	22	23	24	25	26
WELL ID				M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				2/18/2004	2/18/2004	5/10/2004	8/10/2004	11/16/2004	2/9/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				40123.05	40123.03	40344.08	40589.04	40783.08	50080.07	50237.04	50442.04
VOCs											
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	14	19	ND	ND	ND	NA	NA	NA
SVOCs											
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	9	ND	NA	NA	NA
Pesticides/PCBs											
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA
Metals											
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	**40.0**	ND	ND
Barium	2000	µg/L	699	54.6	53.5	77.5	34	37.4	40.0	37.1	80.2
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.36
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	12	12.9	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	6.16	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	27	28	29	30	30	31	32	33
WELL ID				M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20	MW20 Duplicate	M12MW20	M12MW20	M12MW20
Date Collected				11/14/2005	11/14/2005	1/26/2006	4/20/2006	7/27/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.03	50594.02	60058.04	60169.07	60341.03	60341.02	60480.07	70055.07	70168.07
Metals												
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	2.02 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3.77 ER
Barium	2000	µg/L	699	44.7	37	82.4	89.5	49.9	64.9	58	44.8	162
Beryllium	1	µg/L	N/A	ND	ND	ND	0.146 ER	ND	ND	ND	0.119 ER	0.132 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.08	1.30 ER	3.41
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	14.6	12.6	ND	18.5	6.81	12.8	15	7.94	1.39 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	1.64	4.41 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	7.38 ER	6.78 ER	3.88 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20	M12MW20
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.07	70499.07	80074.07	80165.07	80286.07	80390.07	90109.07	90221.07
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.0**	1.48 ER
Arsenic	3	µg/L	N/A	**4.34 ER**	ND	**3.11 ER**	ND	ND	ND	**87.4**	**27.0**
Barium	6000	µg/L	699	45.7	21.9	41.9	44.0	44.6	31.0	34.1	30.9
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.785 ER	ND	ND	0.979 ER	0.895 ER	0.391 ER	ND	ND
Chromium	70	µg/L	N/A	0.248 ER	0.631 ER	0.494 ER	ND	0.359 ER	ND	ND	ND
Copper	1300	µg/L	65.6	2.83 ER	7.17	7.78	0.953 ER	22.1	ND	ND	1.32 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**6.82**	1.47 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.52 ER	0.538 ER	1.96 ER	ND	ND	ND
Selenium	40	µg/L	N/A	3.96 ER	ND	ND	5.85 ER	4.86 ER	ND	**86.4**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-5
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW20	M12MW20	M12MW20	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/2/2010	9/8/2010
ANALYTE / Lab ID				90370.07	90451.07	10049.06	10226.06	10379.06
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	ND	**13.3**
Arsenic	3	µg/L	N/A	**25.0**	0.800 ER	1.17 ER	ND	ND
Barium	6000	µg/L	699	28.6	30.4	22.0	25.6	26.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.75 ER	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	4.09 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.632 ER	1.25 ER	ND	ND
Selenium	40	µg/L	N/A	39.2	ND	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	7	8
WELL ID				M12MW21	M12MW21	M12MW21	LF1(1)	LF2(1)	M12MW21	M12MW21	MW21 Duplicate	M12MW21
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/12/2000	11/17/2000	11/17/2000	1/25/2001
ANALYTE / Lab ID				5199.09	5244.06	5430.09	5645.03	5732.04	5705.09	5861.09	5861.03	373
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	7.34	6.34	ND
2-Butanone	300	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	1.26	ND	NA	NA	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	NA	NA	ND	1.94	1.88	ND
TICs*	500	µg/L	N/A	17	35	32	NA	NA	**401**	13	5	18
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	N/A	ND	ND	4.14	3.04	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	**45.4**	**45**	ND
Barium	2000	µg/L	699	48.7	62.4	35.1	38.1	36	36.3	42	41.1	80.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	1.31	ND	ND	ND	ND	ND	2.24
Chromium	100	µg/L	N/A	ND	ND	5.19	ND	ND	ND	2.87	3.43	ND
Copper	1000	µg/L	65.6	4.28	ND	193	289	ND	480	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	**40.2**	**54.6**	ND	**82.9**	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.22	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.584	11.5	9.03	ND	13.2	ND	1.29	2.87
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	9	10	11	12	13	14	15	16	17
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				5/2/2001	9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16097.06	16444.09	16624.09	20094.09	20347.09	20599.09	20824.09	30125.09	30223.09
VOCs												
Acetone	700	µg/L	N/A	10.01	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	N/A	6.77	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	5	21	19	18	11	60	12
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	0.009
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	3.24	ND	ND
Arsenic	8	µg/L	N/A	4.01	ND	ND	ND	ND	**18.7**	ND	ND	4.77 ER
Barium	2000	µg/L	699	95.3	34.9	93.6	238	65.5	23.9	41.5	176	212
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	0.0432 ER	ND
Cadmium	4	µg/L	N/A	1.14	ND	ND	0.857	ND	0.836	ND	0.580 ER	1.88 ER
Chromium	100	µg/L	N/A	5.36	ND	0.678	0.865	ND	0.861	35.2	1.34 ER	2.24 ER
Copper	1000	µg/L	65.6	5.72	ND	ND	3.22	ND	6.25	2.43	7.73	ND
Lead	10	µg/L	N/A	1.47	ND	ND	1.52	ND	2.57	ND	1.84 ER	1.66 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	2	1.6	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	7.59	5.54	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.08	30715.04	40122.10	40342.07	40589.05	40780.02	50070.03	50237.05	50442.05
VOCs												
Acetone	700	µg/L	N/A	1.70 J	ND	ND	ND	ND	ND	NA	NA	NA
2-Butanone	300	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	114	ND	ND	ND	ND	ND	NA	NA	NA
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
TICs*	500	µg/L	N/A	14	ND	11	ND	15	ND	NA	NA	NA
Pesticides/PCBs												
beta-BHC	0.2	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	4.03 ER	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	5.59	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	108	46.3	162	63	44.4	40.5	134	222	43.9
Beryllium	20	µg/L	N/A	0.144 ER	0.093 ER	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	1.41 ER	0.614 ER	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.95 ER	1.60 ER	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	2.19 ER	1.32 ER	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	5.17	1.87 ER	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				11/14/05	01/26/06	04/20/06	07/27/06	11/03/06	02/12/07	05/09/07
ANALYTE / Lab ID				50594.04	60058.05	60169.08	60341.04	60480.08	70055.08	70168.08
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	**11.4**	**4.20 ER**
Barium	2000	µg/L	699	62.5	45.1	336	43.5	52.8	580	348
Beryllium	1	µg/L	N/A	ND	ND	0.165 ER	ND	ND	0.279 ER	0.166 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	1.10 ER	**17.8**	2.94
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.22 ER
Copper	1300	µg/L	65.6	ND	ND	ND	3.02 ER	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	1.79 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	8.0 ER	1.63 ER	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	5.49 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21	M12MW21
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.08	70499.08	80074.08	80165.08	80286.08	80390.08	90109.08	90221.08
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**11.8**	**6.20 ER**
Arsenic	3	µg/L	N/A	**5.52**	ND	ND	ND	2.78 ER	ND	**109**	**26.1**
Barium	6000	µg/L	699	47.0	69.2	61.3	57.1	43.7	55.0	71.6	65.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	0.866 ER	ND	ND	0.727 ER	ND	0.321 ER	ND	ND
Chromium	70	µg/L	N/A	ND	0.459 ER	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	3.54 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.40 ER	3.45 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	3.22 ER	0.755 ER	1.04 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	4.31 ER	6.04 ER	ND	**106**	8.14 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-6
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46	47
WELL ID				M12MW21	M12MW21	M12MW21	LF3(1)	LF4(1)	LF4(1) Duplicate
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010	9/9/2010
ANALYTE / Lab ID				90370.08	90451.08	10052.04	10234.04	10382.03	10382.02
Metals									
Antimony	6	µg/L	N/A	ND	**7.79 ER**	ND	**8.59 ER**	**18.9**	**20.2**
Arsenic	3	µg/L	N/A	**26.8**	1.74 ER	1.10 ER	ND	1.30 ER	1.17 ER
Barium	6000	µg/L	699	56.7	64.3	50.5	50.6	57.0	60.9
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.799 ER	0.776 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.180 ER	0.110 ER
Nickel	100	µg/L	187	ND	0.644 ER	1.02 ER	ND	ND	ND
Selenium	40	µg/L	N/A	**44.9**	ND	NR	NR	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	5	6	7	8	9
WELL ID				M12MW22	M12MW22	M12MW22	LF1(1)	LF2(1)	LF2(1) Duplicate	M12MW22	M12MW22	M12MW22	M12MW22
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.10	5244.07	5430.10	5645.02	5732.03	5732.02	5705.1	5861.1	372	16097.07
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	4.74	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
SVOCs													
Acenaphthene	400	µg/L	N/A	1.16	ND	ND	NA	NA	NA	ND	ND	ND	ND
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	1.19	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	1.45	ND	ND	NA	NA	NA	5.43	ND	ND	ND
Phenol	4000	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	9	33	NA	NA	NA	**600**	11	27	ND
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	3.13	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**10.1**	**22.8**	**30.7**	**52.9**	**21.6**	**23.6**	**34.8**	ND	**49.1**	**41.1**
Barium	2000	µg/L	699	43.5	42.8	15.8	39.5	40.8	41.4	54.8	66.6	34.6	37.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	0.589	ND	ND	ND	**6.51**
Chromium	100	µg/L	N/A	3.92	2.73	4.11	ND	ND	ND	11.4	1.44	1.65	15.9
Copper	1000	µg/L	65.6	ND	ND	9.8	ND	ND	ND	132	ND	ND	5.39
Lead	10	µg/L	N/A	ND	ND	ND	1.26	ND	**52.2**	**28.4**	ND	ND	4.14
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	0.12	ND	ND	ND	ND
Nickel	100	µg/L	187	14	ND	3.56	ND	ND	2.72	2.09	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	12	13	14	15	15	16	17
WELL ID				M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				9/22/2001	12/5/2001	2/14/2002	2/14/2002	6/4/2002	8/22/2002	11/19/2002	11/19/2002	3/19/2003	5/14/2003
ANALYTE / Lab ID				16444.10	16624.10	20094.10	20094.03	20347.10	20599.10	20824.10	20824.03	30125.10	30223.10
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	13.92	14.7	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Acenaphthene	400	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	N/A	12.98	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	1.29 J	1.41
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	4000	µg/L	N/A	3.09	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	68	5	ND	31	20	13	10	7	11	16
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	6.87	**22**	**42.6**	**40.6**	**44.2**	ND	**208**	**201**	**53.2**	**180**
Barium	2000	µg/L	699	19.3	27.4	38	38.4	30.3	47.4	61.6	39.5	45.8	74.2
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	1.58	3.1	3.06	2.78	ND	3.6	2.4	2.16	**4.94**
Chromium	100	µg/L	N/A	5.32	1.06	ND	ND	ND	1.32	ND	ND	1.88 ER	3.07 ER
Copper	1000	µg/L	65.6	2.23	ND	ND	ND	4.64	2.76	3.31	ND	ND	ND
Lead	10	µg/L	N/A	4.13	2.43	3.4	3.65	1.97	ND	4.01	3	2.75 ER	4.21 ER
Mercury	2	µg/L	N/A	ND	0.1	ND	0.87 B	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	13	11.1	15	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	24	25	26
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.07	30715.05	40122.07	40342.06	40589.06	40780.01	50070.04	50070.02	50237.06	50442.06
VOCs													
Acetone	700	µg/L	N/A	ND	4.01 B	ND	ND	9.4	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
SVOCs													
Acenaphthene	400	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Acenaphthylene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	N/A	ND	ND	ND	ND	1.29 J	ND	NA	NA	NA	NA
Naphthalene	NLE	µg/L	N/A	2.4	1.04 ER	ND	1.59 J	1.05 J	ND	NA	NA	NA	NA
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	1.17 J	ND	NA	NA	NA	NA
Phenol	4000	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	14	ND	16	ND	56	ND	NA	NA	NA	NA
Pesticides/PCBs													
4,4'-DDD	0.1	µg/L	N/A	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	**118**	**67.5**	**92.4**	**65.3**	**61.4**	**152**	**67**	**65.4**	**56**	**76.5**
Barium	2000	µg/L	699	55.9	51.5	60.9	62	53	69.6	48.3	47.3	48	43.3
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	**4.3**	1.35 ER	3.28	ND	**6.93**	ND	ND	ND	ND	**9.11**
Chromium	100	µg/L	N/A	2.70 ER	ND	5.05	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	3.19 ER	4.6	9.57	6.81	ND	**11**	**11.2**	9.59	ND	5.49
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	31	32	33
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	MW22 Duplicate	M12MW22	M12MW22
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.05	60058.06	60169.09	60341.05	60480.09	60480.02	70055.09	70168.09
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	**97.5**	**37.7**	**68.5**	**86.1**	**72.8**	**73.4**	**94**	**47.9**
Barium	2000	µg/L	699	65.1	47.3	56.8	61.1	45.9	46.6	46.3	46.2
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	3.28	ND	ND	**17.8**	**18**	**15.3**	**10.0**
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.36 ER	2.11 ER	ND	ND	ND	ND
Lead	5	µg/L	N/A	**7.64**	**6.62**	ND	ND	ND	ND	ND	**11.8**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	1.69 ER	1.9 ER	1.36 ER	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22	M12MW22
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.09	70499.09	80074.09	80165.09	80286.09	80390.09	90109.09	90221.09
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	4.48 ER	**11.0**	4.28 ER
Arsenic	3	µg/L	N/A	**63.8**	**40.4**	**25.5**	**93.4**	**68.8**	**55.8**	**113**	**110**
Barium	6000	µg/L	699	39.6	48.6	42.5	50.3	60.8	45.9	50.9	50.8
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	**11.4**	ND	ND	**8.20**	**10.3**	ND	ND	ND
Chromium	70	µg/L	N/A	0.935 ER	0.396 ER	0.362 ER	ND	0.840 ER	ND	ND	0.920 ER
Copper	1300	µg/L	65.6	ND	1.50 ER	4.39 ER	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	**12.7**	ND	ND	**8.49**	**11.6**	ND	**12.0**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	2.08 ER	ND	1.38 ER	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	3.39 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-7
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	45	46
WELL ID				M12MW22	M12MW22	M12MW22	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/4/2010	6/4/2010	9/9/2010
ANALYTE / Lab ID				90370.09	90451.09	10052.05	10235.03	10235.02	10382.07
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	**9.83 ER**	**11.8**	**17.7**
Arsenic	3	µg/L	N/A	**64.8**	**96.1**	**47.2**	**136**	**122**	**47.82**
Barium	6000	µg/L	699	50.3	52.0	24.2	48.8	51.6	43.6
Beryllium	1	µg/L	N/A	ND	ND	ND	0.138 ER	0.143 ER	ND
Cadmium	4	µg/L	N/A	**4.34**	ND	0.565 ER	2.43	2.72	3.65
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	ND
Lead	5	µg/L	N/A	**5.02**	**6.04**	ND	**7.00**	4.83 ER	**7.19**
Mercury	2	µg/L	N/A	ND	ND	ND	0.070 ER	0.070 ER	0.180 ER
Nickel	100	µg/L	187	ND	ND	ND	0.650 ER	0.579 ER	ND
Selenium	40	µg/L	N/A	ND	ND	NR	NR	NR	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9
WELL ID				M12MW23	M12MW23	M12MW23	LF1(1)	LF2(1)	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/22/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.11	5244.08	5430.11	5649.02	5732.05	5705.11	5861.11	371	16097.08
VOCs												
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	6	9	8	NA	NA	**331**	15	37	15
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	2.57
Barium	2000	µg/L	699	46.3	57	59.6	25.7	23.7	30.5	33.3	32.1	ND
Beryllium	20	µg/L	N/A	ND	ND	ND	2.15	2.04	2.23	1.52	0.819	0.785
Cadmium	4	µg/L	N/A	1.64	1.18	1.48	1.46	1.89	1.95	1.86	3.02	ND
Chromium	100	µg/L	N/A	2.04	ND	1.96	ND	ND	ND	2.43	1.15	ND
Copper	1000	µg/L	65.6	321	9.3	ND	ND	ND	ND	ND	5.21	ND
Lead	10	µg/L	N/A	**28.4**	6.29	4.35	2.14	ND	ND	ND	1.7	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	31.6	18.8	18.4	30.9	27	30.6	32.4	19.6	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	3.47

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	13	14	15	16	16	17
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	MW23 Duplicate	M12MW23
Date Collected				9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	3/19/2003	5/14/2003
ANALYTE / Lab ID				16444.11	16624.11	20094.11	20347.11	20599.11	20824.11	30125.11	30125.03	30223.11
VOCs												
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	N/A	ND	5	14	22	11	16	16	11	13
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	4.09	ND	ND	ND	ND
Barium	2000	µg/L	699	29.5	24.3	25.4	24.2	41.3	24.6	28.3	44.4	56.4
Beryllium	20	µg/L	N/A	2.4	2.06	1.47	1.59	1.42	1.71	0.93	0.416 ER	ND
Cadmium	4	µg/L	N/A	1.37	1.34	1.27	1.28	0.921	1.49	1.53	1.37 ER	1.03 ER
Chromium	100	µg/L	N/A	3.83	5.04	2.88	2.31	12	2.75	2.62 ER	2.71 ER	6.59
Copper	1000	µg/L	65.6	7.53	4.58	5.43	7.07	10.8	7.7	9.39	20.4	6.75
Lead	10	µg/L	N/A	5.43	ND	2.1	ND	2.7	1.7	3.33 ER	5.27	3.23 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	37.2	30.8	28	29.1	21.8	28.1	22.4	12.6	16.9
Selenium	50	µg/L	N/A	ND	ND	5.84	ND	ND	3.81	6.93 ER	6.89 ER	3.18 ER

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	18	19	20	21	22	23	24	25	26
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				7/23/2003	11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				30412.05	30715.06	40122.08	40342.05	40589.07	49780.03	50070.05	50237.07	50442.07
VOCs												
TICs*	500	µg/L	N/A	ND	ND	4	ND	ND	ND	NA	NA	NA
SVOCs												
TICs*	500	µg/L	N/A	17	4	12	ND	ND	ND	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	3.45 ER	5.61	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	46.1	51.1	51.9	43.1	38.8	51.4	20.1	54.3	117
Beryllium	20	µg/L	N/A	0.956	0.716	0.644	0.853	1.6	1.13	1.44	ND	ND
Cadmium	4	µg/L	N/A	1.17 ER	1.04 ER	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.65 ER	1.57 ER	10.2	8.18	16.2	ND	9.63	ND	ND
Copper	1000	µg/L	65.6	6.72	7.1	ND	7.81	10	7.86	9.94	ND	ND
Lead	10	µg/L	N/A	3.41 ER	3.92 ER	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	19.9	16.7	15.6	21.8	28	23.8	28.4	7	10.1
Selenium	50	µg/L	N/A	ND	5.08 ER	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.06	60058.07	60169.10	60341.06	60480.10	70055.10	70168.10
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	2.01 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	**7.6**	ND	ND	2.99 ER	ND	ND	ND
Barium	2000	µg/L	699	75.1	40.2	126	110	67.4	79.4	79.5
Beryllium	1	µg/L	N/A	ND	ND	0.615	0.77	ND	0.883	0.460 ER
Cadmium	4	µg/L	N/A	ND	ND	2.24	2.57	0.971 ER	1.45 ER	1.73 ER
Chromium	70	µg/L	N/A	ND	ND	1.52 ER	ND	1.2 ER	1.13 ER	1.52 ER
Copper	1300	µg/L	65.6	ND	ND	2.75 ER	4.23 ER	0.794 ER	4.05 ER	2.65 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	**15.3**
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	10.4	ND	26.2	22.7	7.01	25.1	19.5
Selenium	40	µg/L	N/A	ND	ND	ND	ND	5.42 ER	4.56 ER	7.12 ER

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23	M12MW23
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.10	70499.10	80074.10	80165.10	80286.10	80390.10	90109.10	90221.10
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**7.04 ER**	3.14 ER
Arsenic	3	µg/L	N/A	2.98 ER	ND	2.8 ER	ND	ND	2.60 ER	**56.8**	**17.9**
Barium	6000	µg/L	699	85.9	42.1	44.9	46.8	31.8	40.8	36.5	46.7
Beryllium	1	µg/L	N/A	**1.23 ER**	0.324 ER	ND	ND	**1.84**	**1.87**	0.931	0.574
Cadmium	4	µg/L	N/A	2.23	0.860 ER	0.741 ER	0.634 ER	1.71 ER	2.27	1.14 ER	0.782 ER
Chromium	70	µg/L	N/A	1.35 ER	1.01 ER	1.71 ER	1.97 ER	1.60 ER	2.40 ER	1.17 ER	0.472 ER
Copper	1300	µg/L	65.6	1.05 ER	2.31 ER	6.07	3.92 ER	5.99	3.82 ER	3.70 ER	2.63 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	1.50 ER	4.83 ER	2.40 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	24.4	9.24	10.7	7.95	29.9	30.8	20.1	16.7
Selenium	40	µg/L	N/A	ND	4.33 ER	ND	3.94 ER	5.07 ER	ND	**65.9**	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-8
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW23	M12MW23	M12MW23	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/4/2010	9/10/2010
ANALYTE / Lab ID				90370.10	90451.10	10049.07	10235.05	10384.01
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	**6.75 ER**	**12.8**
Arsenic	3	µg/L	N/A	**15.0**	1.05 ER	ND	0.740 ER	**3.67 ER**
Barium	6000	µg/L	699	31.6	57.0	27.7	70.3	46.5
Beryllium	1	µg/L	N/A	**1.67**	0.568	0.271 ER	**1.23 ER**	**2.05**
Cadmium	4	µg/L	N/A	1.95 ER	1.13 ER	ND	1.86 ER	2.00 ER
Chromium	70	µg/L	N/A	ND	ND	2.59 ER	ND	2.04 ER
Copper	1300	µg/L	65.6	4.32 ER	ND	2.22 ER	3.41 ER	2.49 ER
Lead	5	µg/L	N/A	ND	ND	ND	2.78 ER	**5.49**
Mercury	2	µg/L	N/A	ND	ND	ND	0.070 ER	ND
Nickel	100	µg/L	187	25.7	18.0	10.8	32.4	36.3
Selenium	40	µg/L	N/A	30.2	10.9 ER	NR	NR	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	2	3	4	5	6
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	LF1(1)	LF2(1)	M12MW24
Date Collected				2/25/2000	3/14/2000	3/14/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000
ANALYTE / Lab ID				5199.12	5244.09	5244.03	5430.12	5649.03	5735.06	5705.12
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND
TICs*	500	µg/L	N/A	ND	11	9	45	NA	NA	**279**
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.22	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	2.81	ND	4.72
Barium	2000	µg/L	699	26.2	29	29.1	15.3	33.1	29.9	35.4
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.62
Cadmium	4	µg/L	N/A	ND	1.13	0.932	0.682	ND	0.572	ND
Chromium	100	µg/L	N/A	1.79	ND	ND	1.72	ND	ND	ND
Copper	1000	µg/L	65.6	4.59	ND	ND	4.34	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	10	10.5	9.86	11.2	7.99	1.43	4.55
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	5.65	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	6	7	8	8	9	10	10
WELL ID				MW24 Duplicate	M12MW24	M12MW24	MW24 Duplicate	M12MW24	M12MW24	MW24 Duplicate
Date Collected				9/12/2000	11/17/2000	1/25/2001	1/25/2001	5/2/2001	9/22/2001	9/22/2001
ANALYTE / Lab ID				5705.03	5861.12	370	367	16097.09	16444.12	16444.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	14	13	16	13	ND	9	ND
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	3.75	ND	2.79
Barium	2000	µg/L	699	30.9	34.8	28.1	29.1	52.6	33.7	34.8
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	0.674	ND	ND
Cadmium	4	µg/L	N/A	ND	1.58	3.06	1.81	0.687	ND	ND
Chromium	100	µg/L	N/A	ND	6.87	1.95	0.75	23	4.61	2.9
Copper	1000	µg/L	65.6	ND	ND	5.98	3.6	13.2	2.5	7.3
Lead	10	µg/L	N/A	ND	ND	ND	ND	6.01	2.73	3.44
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	6.48	12.1	6.96	6.51	11	7.58	7.86
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	11	12	13	13	14	14	15
WELL ID				M12MW24	M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24
Date Collected				12/5/2001	2/14/2002	6/4/2002	6/4/2002	8/22/2002	8/22/2002	11/19/2002
ANALYTE / Lab ID				16624.12	20094.12	20347.12	20347.03	20599.12	20599.03	20824.12
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	1.42 B	ND
TICs*	500	µg/L	N/A	5	ND	23	17	15	12	13
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	2.6	ND	ND	ND	2.67	ND	ND
Barium	2000	µg/L	699	31.4	32.1	33.4	32.1	36.7	29.8	32.3
Beryllium	20	µg/L	N/A	0.59	0.691	ND	0.575	0.602	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	3.02	1.47	2.97	1.53	2.48	ND	ND
Copper	1000	µg/L	65.6	ND	ND	3.92	4.17	7.31	4.48	3.24
Lead	10	µg/L	N/A	1.36	ND	ND	ND	4.18	2.45	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	9.16	9.27	8.76	8.29	11.8	7.4	7.2
Selenium	50	µg/L	N/A	ND	6.15	5.92	7.9	5.95	4.31	9.13
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	16	17	17	18	18	19	19
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate
Date Collected				3/19/2003	5/14/2003	5/14/2003	7/23/2003	7/23/2003	11/6/2003	11/6/2003
ANALYTE / Lab ID				30125.12	30223.12	30223.03	30412.04	30412.03	30715.07	30715.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	16	18	7	5	9	7
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	4.5 ER	ND	ND	3.11 ER	ND
Barium	2000	µg/L	699	29	39.5	39.8	41	42.7	61.3	61.4
Beryllium	20	µg/L	N/A	0.467 ER	ND	ND	0.618	0.659	0.992	1
Cadmium	4	µg/L	N/A	0.693 ER	0.91 ER	ND	0.492 ER	0.755 ER	0.515 ER	0.564 ER
Chromium	100	µg/L	N/A	ND	12.2	10.9	1.21 ER	ND	ND	ND
Copper	1000	µg/L	65.6	3.28 ER	14.2	3.83 ER	1.31 ER	1.72 ER	2.44 ER	2.73 ER
Lead	10	µg/L	N/A	0.999 ER	3.19 ER	3.13 ER	ND	ND	ND	1.74 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	8.88	6.59	6.36	8.03	8.44	13.1	12.8
Selenium	50	µg/L	N/A	5.68 ER	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	21	21	22	22	23	23
WELL ID				M12MW24	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate	M12MW24	MW24 Duplicate
Date Collected				2/17/2004	5/7/2004	5/7/2004	8/10/2004	8/10/2004	11/16/2004	11/16/2004
ANALYTE / Lab ID				40122.09	40342.04	40342.03	40589.08	40589.03	40783.09	40783.03
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	ND	ND	ND	ND	10	17
Metals										
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	67.9	34.9	33.3	67.5	58.1	97.5	97.1
Beryllium	20	µg/L	N/A	1.04	ND	ND	0.94	0.77	1.38	1.39
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	15	ND	ND	12.9	10.9	18.6	18.8
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	24	25	26
WELL ID				M12MW24	M12MW24	M12MW24
Date Collected				2/3/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				50070.06	50237.08	50442.08
SVOCs						
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	NA	NA	NA
TICs*	500	µg/L	N/A	NA	NA	NA
Metals						
Antimony	20	µg/L	N/A	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND
Barium	2000	µg/L	699	83.8	34.1	46.6
Beryllium	20	µg/L	N/A	1.31	ND	0.628
Cadmium	4	µg/L	N/A	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND
Nickel	100	µg/L	187	18.4	ND	6.52
Selenium	50	µg/L	N/A	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24
Date Collected				11/14/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50594.07	60058.08	60169.11	60341.07	60480.11	70055.11	70168.11
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	3.13 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	70.9	58.7	38.5	44.3	60.6	47.6	34.3
Beryllium	1	µg/L	N/A	**1.02**	**1.02**	0.647	ND	0.713 ER	0.72	0.211 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.427 ER	0.742 ER	0.255 ER
Chromium	70	µg/L	N/A	ND	ND	4.77 ER	ND	ND	ND	0.539 ER
Copper	1300	µg/L	65.6	5.24	ND	2.83 ER	2.95 ER	1.51 ER	0.916 ER	1.30 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	14.2	14.9	8.06	2.82 ER	9.88	9.42	3.16 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	7.16 ER	3.05 ER	5.08 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after
the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24	M12MW24
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.11	70499.11	80074.11	80165.11	80286.11	80390.11	90109.11	90221.11
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**18.6**	2.37 ER
Arsenic	3	µg/L	N/A	**5.53**	ND	ND	ND	ND	ND	**72.8**	**16.7**
Barium	6000	µg/L	699	31.6	44.4	49.7	33.5	30.1	60.0	43.6	27.1
Beryllium	1	µg/L	N/A	ND	0.652	0.553	0.203 ER	ND	**1.44**	0.765	0.193 ER
Cadmium	4	µg/L	N/A	ND	0.507 ER	0.454 ER	0.689 ER	0.359 ER	1.41 ER	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	0.473 ER	ND	ND	ND	ND
Copper	1300	µg/L	65.6	1.03 ER	1.74 ER	6.20	1.35 ER	ND	0.821 ER	ND	0.928 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	4.67 ER	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.14 ER	9.1	12.7	5.51	2.29 ER	25.6	7.94	4.86 ER
Selenium	40	µg/L	N/A	3.72 ER	ND	ND	6.05 ER	6.31 ER	ND	**92.4**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-9
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW24	M12MW24	M12MW24	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.11	90451.11	10049.08	10234.05	10382.05
Metals								
Antimony	6	µg/L	N/A	ND	ND	ND	**6.25 ER**	**13.9**
Arsenic	3	µg/L	N/A	**17.3**	0.820 ER	ND	ND	1.24 ER
Barium	6000	µg/L	699	39.9	53.3	37.6	56.7	61.3
Beryllium	1	µg/L	N/A	0.432 ER	**1.24**	0.677	**1.35**	**1.78**
Cadmium	4	µg/L	N/A	ND	ND	0.817 ER	1.00 ER	1.05 ER
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.59 ER	ND	4.06 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	0.210 ER
Nickel	100	µg/L	187	5.57	19.2	12.4	18.7	24.7
Selenium	40	µg/L	N/A	35.3	13.6 ER	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	1.21 ER	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	3	4	5	6	7	8	9
WELL ID				M12MW25	M12MW25	M12MW25	MW25 Duplicate	LF1(1)	LF2(1)	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				2/25/2000	3/14/2000	5/23/2000	5/23/2000	8/22/2000	9/21/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001
ANALYTE / Lab ID				5199.13	5244.10	5430.13	5430.03	5649.05	5735.04	5705.13	5861.13	369	16097.10
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	3.83	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	**90.51**	NA	NA	ND	ND	ND	ND
Butyl benzyl phthalate	100	µg/L	N/A	ND	2.38	ND	ND	NA	NA	ND	ND	ND	ND
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	4.65	NA	NA	ND	ND	ND	ND
2-Methylnapthalene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	1.69	ND	ND	ND	NA	NA	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	ND	1.48	ND	ND	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	10	43	17	NA	NA	22	4	15	54
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	2.78	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	34.2	23.6	4.49	4.53	19.2	19.4	47.4	29.9	23.8	23.1
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	1.67	1.92	ND
Chromium	100	µg/L	N/A	2.05	0.774	1.47	2.19	ND	ND	ND	1.95	0.56	5.38
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	13.6	10.8
Lead	10	µg/L	N/A	ND	ND	ND	ND	1.12	ND	4.31	3.69	ND	2.49
Mercury	2	µg/L	N/A	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.78	0.685	1.71	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	3.51	ND	ND	ND	ND	ND	ND	ND	ND	4.98
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	12	13	14	15	16	17	18	19
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				9/22/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/25/2003	11/7/2003
ANALYTE / Lab ID				16444.13	16624.13	20094.13	20347.13	20599.13	20824.13	30125.13	30223.13	30425.09	30720.06
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.25 B
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	15	23	ND	32	6	13	14	25	13	6
Metals													
Antimony	20	µg/L	N/A	ND	ND	2.64	ND	ND	5.22	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	4.61 ER	2.64 ER	ND
Barium	2000	µg/L	699	52.6	94.7	47.3	18.6	69.6	33.7	17.1	26.5	26.9	37.6
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	0.033 ER	ND	ND	0.058 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	12.6	1.36	1.16	ND	1.25	0.993	ND	8.76	1.31 ER	12
Copper	1000	µg/L	65.6	4.45	3.87	ND	2.69	4.22	5.71	0.565 ER	7.71	1.11 ER	9.06
Lead	10	µg/L	N/A	3.11	3.69	ND	ND	2.01	ND	ND	1.84 ER	ND	3.48 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11 ER
Nickel	100	µg/L	187	ND	8.66	ND	ND	1.18	3.67	ND	ND	ND	1.23 ER
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	4.98	6.71 ER	7.71 ER	9.30 ER	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	20	21	22	23	24	24	25	25	26
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	MW25 Duplicate	M12MW25	MW25 Duplicate	M12MW25
Date Collected				2/18/2004	5/10/2004	8/11/2004	11/16/2004	2/9/2005	2/9/2005	5/4/2005	5/4/2005	9/2/2005
ANALYTE / Lab ID				40123.06	40344.09	40591.08	40783.10	50080.08	50080.02	50237.09	50237.02	50442.09
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	9	ND	ND	ND	NA	NA	NA	NA	NA
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Di-*n* -octylphthalate	100	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
2-Methylnapthalene	NLE	µg/L	N/A	1.24 J	ND	ND	ND	NA	NA	NA	NA	NA
Naphthalene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
Phenanthrene	NLE	µg/L	N/A	ND	ND	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	N/A	12	8	17	ND	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	21.7	19.3	17.7	40.7	37.8	33.1	28.7	31.3	81.9
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	ND	ND	ND	ND	ND	9.13	ND	ND	ND
Copper	1000	µg/L	65.6	ND	5.39	ND	ND	ND	5.75	ND	ND	ND
Lead	10	µg/L	N/A	ND	ND	ND	ND	ND	5.87	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	32	33
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	MW25 Duplicate	M12MW25
Date Collected				11/15/2005	1/26/2006	4/20/2006	7/28/2006	11/3/2006	2/12/2007	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.07	60058.09	60169.12	60342.07	60480.12	70055.12	70055.02	70168.12
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	5.81 ER	ND	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	**3.8 ER**	ND	**4.49 ER**	**3.03 ER**	ND
Barium	2000	µg/L	699	49.7	22.2	30.7	28.6	23.6	31.6	31	24.1
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	0.369 ER	0.316 ER	ND
Chromium	70	µg/L	N/A	ND	ND	1.43 ER	0.843	ND	ND	ND	0.694 ER
Copper	1300	µg/L	65.6	ND	ND	4.73 ER	2.61 ER	ND	2.05 ER	1.39 ER	2.78 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	40	µg/L	N/A	ND	ND	ND	ND	10.5 ER	6.62 ER	5.74 ER	8.73 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after
the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jerse

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25	M12MW25
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.12	70499.12	80074.12	80165.12	80286.12	80390.12	90109.12	90221.12
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**21.0**	2.79 ER
Arsenic	3	µg/L	N/A	**8.41**	ND	ND	ND	**3.01 ER**	ND	**111**	**29.2**
Barium	6000	µg/L	699	28.5	36.8	29.1	25.7	66.8	256	31.4	38.2
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	0.578 ER	0.404 ER	ND	ND
Chromium	70	µg/L	N/A	0.220 ER	0.703 ER	1.26 ER	0.873 ER	ND	ND	0.438 ER	ND
Copper	1300	µg/L	65.6	1.24 ER	1.14 ER	8.70	7.35	ND	ND	0.746 ER	1.04 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	2.77 ER	1.33 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	6.82	2.20 ER	ND	ND	ND	1.38 ER
Selenium	40	µg/L	N/A	7.40 ER	ND	ND	7.22 ER	8.74 ER	ND	**91.5**	5.85 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	**2.15 ER**	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-10
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jerse

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	46
WELL ID				M12MW25	M12MW25	M12MW25	LF3(1)	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/5/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.12	90451.12	10052.06	10234.06	10382.06
Metals								
Antimony	6	µg/L	N/A	ND	5.87 ER	5.23 ER	**6.44 ER**	**15.5**
Arsenic	3	µg/L	N/A	**29.2**	0.700 ER	1.69 ER	ND	0.890 ER
Barium	6000	µg/L	699	58.3	78.0	22.5	15.3	14.3
Beryllium	1	µg/L	N/A	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND
Chromium	70	µg/L	N/A	ND	ND	ND	ND	ND
Copper	1300	µg/L	65.6	ND	ND	1.08 ER	ND	ND
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	0.821 ER	ND	ND	ND
Selenium	40	µg/L	N/A	**48.8**	11.5 ER	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/16/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	1	2	3	4	5	6	7	8	9	9
WELL ID				M12MW26	M12MW26	M12MW26	LF1(1)	LF2(1)	M12MW26	M12MW26	M12MW26	M12MW26	MW26 Duplicate
Date Collected				2/25/2000	3/14/2000	5/23/2000	8/21/2000	9/20/2000	9/12/2000	11/17/2000	1/25/2001	5/2/2001	5/2/2001
ANALYTE / Lab ID				5199.14	5244.11	5430.14	5645.04	5732.06	5705.14	5861.14	368	16097.11	16097.03
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	NA	NA	ND	6.48	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	NA	NA	ND	ND	ND	ND	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	1.62	ND	NA	NA	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	19	42	38	NA	NA	73	10	19	7	ND
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	3.78	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.6**
Barium	2000	µg/L	699	45.4	30.1	72	43.5	42.2	49	55.3	50.4	208	180
Beryllium	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.946
Cadmium	4	µg/L	N/A	0.826	0.817	ND	0.795	ND	2.15	ND	2.46	**5.06**	**4.08**
Chromium	100	µg/L	N/A	7.76	3.19	4.64	ND	2.17	2.75	7.99	2.18	68.3	54.6
Copper	1000	µg/L	65.6	7.84	4.47	ND	385	9.42	ND	37.2	18	70.1	25.2
Lead	10	µg/L	N/A	ND	ND	ND	**70.8**	ND	5.75	**14**	ND	**10.6**	7.93
Mercury	2	µg/L	N/A	ND	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	3.25	5.94	1.96	12.2	ND	ND	4.34	2.2	ND	5.76
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	34.2	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	10	11	11	12	13	14	15	16	17	18
WELL ID				M12MW26	M12MW26	MW26 Duplicate	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				9/22/2001	12/5/2001	12/5/2001	2/14/2002	6/4/2002	8/22/2002	11/19/2002	3/19/2003	5/14/2003	7/23/2003
ANALYTE / Lab ID				16444.14	16624.14	16624.03	20094.14	20347.14	20599.14	20824.14	30125.14	30223.14	30412.06
VOCs													
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	5	ND
SVOCs													
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	N/A	9	6	4	ND	25	11	11	13	12	7
Metals													
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	**8.94**	3.17 ER
Barium	2000	µg/L	699	107	50	53	162	125	42.4	31.2	36.4	218	29.8
Beryllium	20	µg/L	N/A	1.91	ND	ND	ND	ND	ND	ND	0.0728 ER	0.79 ER	0.0436 ER
Cadmium	4	µg/L	N/A	2.26	ND	ND	1.42	1.4	ND	0.937	ND	3.24	0.428 ER
Chromium	100	µg/L	N/A	13.8	3.35	4.76	6.17	23.6	5.66	ND	ND	52.4	3.18
Copper	1000	µg/L	65.6	228	ND	ND	ND	8	4.52	5.32	ND	13.9	ND
Lead	10	µg/L	N/A	**66.8**	ND	ND	1.93	3	1.77	ND	ND	6.62	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	34.5	ND	ND	ND	3	ND	ND	1.02 ER	5.74	ND
Selenium	50	µg/L	N/A	27.6	ND	ND	6.04	5	4.75	ND	7.4 ER	ND	ND
Thallium	10	µg/L	N/A	ND	ND	3.9	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	19	20	21	22	23	24	25	26	26
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	MW26 Duplicate
Date Collected				11/6/2003	2/17/2004	5/7/2004	8/10/2004	11/15/2004	2/3/2005	5/4/2005	9/2/2005	9/2/2005
ANALYTE / Lab ID				30715.08	40122.04	40342.08	40589.09	40780.04	50070.07	50237.10	50442.10	50442.02
VOCs												
Acetone	700	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	ND	4	ND	ND	ND	NA	NA	NA	NA
SVOCs												
Butyl benzyl phthalate	100	µg/L	N/A	ND	ND	ND	ND	ND	NA	NA	NA	NA
TICs*	500	µg/L	N/A	11	11	ND	ND	ND	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	N/A	5.09	5.48	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	699	40.4	49.7	92.5	36.7	26.1	23.8	41.1	25.6	28.7
Beryllium	20	µg/L	N/A	0.064 ER	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	N/A	1.15 ER	ND	ND	9.6	ND	ND	ND	ND	ND
Copper	1000	µg/L	65.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	N/A	1.0 ER	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	2.0 ER	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	27	28	29	30	31	32	33
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				11/15/2005	1/26/2006	4/20/2006	7/27/2006	11/3/2006	2/12/2007	5/9/2007
ANALYTE / Lab ID				50595.08	60058.10	60169.13	60341.08	60480.13	70055.13	70168.13
Metals										
Antimony	6	µg/L	N/A	ND	ND	ND	2.68 ER	ND	ND	ND
Arsenic	3	µg/L	N/A	ND	ND	ND	1.94	**5.01**	ND	**5.38**
Barium	2000	µg/L	699	34.1	17.7	48.7	30.7	15.3	33.8	58.1
Beryllium	1	µg/L	N/A	ND	ND	0.132 ER	ND	ND	ND	0.388 ER
Cadmium	4	µg/L	N/A	ND	ND	ND	1.11 ER	2.25	0.780 ER	1.72 ER
Chromium	70	µg/L	N/A	ND	ND	0.854 ER	1.46 ER	ND	ND	0.469 ER
Copper	1300	µg/L	65.6	ND	9.33	ND	1.45 ER	ND	ND	3.86 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	ND	ND	ND	3.56 ER	ND	1.30 ER
Selenium	40	µg/L	N/A	ND	ND	ND	ND	4.53 ER	6.26 ER	2.87 ER
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	34	35	36	37	38	39	40	41
WELL ID				M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26	M12MW26
Date Collected				8/7/2007	11/30/2007	3/7/2008	5/15/2008	8/7/2008	10/27/2008	3/13/2009	6/8/2009
ANALYTE / Lab ID				70299.13	70499.13	80074.13	80165.13	80286.13	80390.13	90109.13	90221.13
Metals											
Antimony	6	µg/L	N/A	ND	ND	ND	ND	ND	ND	**15.1**	3.69 ER
Arsenic	3	µg/L	N/A	**5.34**	2.84 ER	**6.37**	**4.06 ER**	**3.44 ER**	ND	**76.2**	**11.5**
Barium	6000	µg/L	699	34.6	39.1	78.7	41.9	46.1	41.4	38.5	19.7
Beryllium	1	µg/L	N/A	ND	0.177 ER	0.379 ER	0.295 ER	ND	0.117 ER	ND	0.114 ER
Cadmium	4	µg/L	N/A	0.632 ER	0.488 ER	0.822 ER	1.65 ER	0.454 ER	1.24 ER	ND	ND
Chromium	70	µg/L	N/A	0.397 ER	6.48	1.21 ER	1.74 ER	ND	2.32 ER	ND	1.12 ER
Copper	1300	µg/L	65.6	ND	12.7	15.9	5.97	ND	ND	1.15 ER	3.84 ER
Lead	5	µg/L	N/A	ND	ND	ND	2.16 ER	ND	ND	**5.56**	ND
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.34 ER	5.17	1.65 ER	0.650 ER	ND	ND	2.27 ER
Selenium	40	µg/L	N/A	3.47 ER	ND	ND	ND	6.88 ER	ND	**78.7**	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

Table 5-11
Groundwater Sampling Results
Site FTMM-12
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	Site Specific MBC(2)	42	43	44	45	45	46
WELL ID				M12MW26	M12MW26	M12MW26	LF3(1)	LF3(1) Duplicate	LF4(1)
Date Collected				9/8/2009	11/18/2009	2/4/2010	6/3/2010	6/3/2010	9/9/2010
ANALYTE / Lab ID				90370.13	90451.13	10049.09	10234.03	10234.02	10382.04
Metals									
Antimony	6	µg/L	N/A	ND	ND	ND	5.87 ER	**6.70 ER**	**14.3**
Arsenic	3	µg/L	N/A	**20.4**	2.27 ER	1.85 ER	ND	ND	1.92 ER
Barium	6000	µg/L	699	31.8	27.1	23.1	27.1	24.9	38.3
Beryllium	1	µg/L	N/A	ND	ND	0.163 ER	ND	ND	0.105 ER
Cadmium	4	µg/L	N/A	ND	ND	0.856 ER	ND	ND	0.808 ER
Chromium	70	µg/L	N/A	ND	ND	1.74 ER	ND	ND	3.05 ER
Copper	1300	µg/L	65.6	ND	ND	ND	ND	ND	1.70 ER
Lead	5	µg/L	N/A	ND	ND	ND	ND	ND	2.80 ER
Mercury	2	µg/L	N/A	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	187	ND	1.01 ER	2.99 ER	ND	ND	ND
Selenium	40	µg/L	N/A	36.2	ND	NR	NR	NR	ND
Thallium	2	µg/L	N/A	ND	ND	ND	ND	ND	ND

Notes:

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

(2) MBC - Maximum Background Criteria for native metals (Weston, 1995)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

ND - Not detected

NR - Not reported

Sampling for VOCs, SVOCs, and Pesticides/PCBs were discontinued after the 11/15/04 sampling event as per NJDEP approval letter dated November 2004

United States Army
Fort Monmouth, New Jersey

M-124 Landfill (FTMM-124)
Remedial Investigation Report Addendum
(2nd Quarter 2001 through 3rd Quarter 2010)

U.S. Army Garrison Fort Monmouth, Main Post
Fort Monmouth, New Jersey

Prepared by

U.S. Army, Office of the Assistant Chief of Staff for Installation Management

Fort Monmouth, New Jersey

~~February~~ October 2012

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Objectives 1

1.2 Report Organization 1

2.0 SITE BACKGROUND 2

2.1 Site Location and Description 2

2.2 Environmental Setting 2

2.2.1 Geology 2

2.2.2 Hydrogeology 3

2.3 Site History and Background Investigations 3

2.3.1 September 2003 Remedial Investigation Report 4

2.3.2 October 2003 Sediment Quality Evaluation 4

2.3.3 October 2004 Near-Surface Soil Evaluation 5

2.3.4 November 2004 Reduction of Ground Water Analysis 6

2.3.5 July 2007 NJDEP Correspondence Letter 7

2.3.6 August 2008 Landfill Delineation Project 9

2.3.7 February 2009 Regulatory Approach to Fort Monmouth Landfills 9

2.3.8 2010 Sanitary Landfill Minor Disruption Approval 10

2.3.9 2010 NJDEP Regulatory Requirements for Landfills 10

2.3.10 2010 Aerial Photograph Analysis 10

3.0 REMEDIAL ACTIVITIES 12

3.1 Landfill Boundary and Near-Surface Soil Delineation Activities 12

3.2 Monitoring Well Installation Activities 13

4.0 MONITORING AND SAMPLING ACTIVITIES 15

4.1 Ground Water Monitoring 15

4.2 Ground Water Sampling 16

4.3 Surface Water Sampling 16

4.4 Types of Waste Generated and Disposal Methods 17

5.0 SITE ANALYTICAL RESULTS 18

5.1 Landfill Boundary and Near-Surface Soil Sampling Activities 18

VOCs 18

SVOCs 18

Pesticides/PCBs 19

Metals 19

5.1.1 Soil Summary 20
5.1.2 Quality Assurance/Quality Control - Soil 21
5.2 Ground Water Sampling Results 21
5.2.1 VOCs 22
5.2.2 VO TICs 22
5.2.3 SVOCs 22
5.2.4 SVO TICs 22
5.2.5 Pesticides and PCBs 22
5.2.6 Metals 23
5.2.7 Ground Water Summary 24
5.2.8 Ground Water – QA/QC 24
5.3 Surface Water Sampling Results 25
5.3.1 VOCs 26
5.3.2 TICs 26
5.3.3 Metals 26
5.3.4 Pesticides and PCBs 26
5.3.5 Surface Water Summary 27
5.3.6 Surface Water – QA/QC 27
6.0 BACKGROUND METALS EVALUATION 30
6.1 Evaluation Approach 30
6.1.1 Nature of Apparent Sources 31
6.1.2 Relationship of Metal Levels to Turbidity 32
6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples 36
6.1.4 Occurrence of Atypical Spikes 38
6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern 41
7.0 RECEPTOR EVALUATION 44
7.1 Sensitive Receptor and Well Search 44
7.2 Vapor Intrusion (VI) Investigation 44
7.3 Baseline Ecological Evaluation (BEE) 45
7.4 Public Notification 45
8.0 REMEDIAL ACTION PROGRESS 47
8.1 Costs of Remediation Incurred to Date 47
8.2 Ground Water Conclusions 47
8.3 Surface Water Conclusions 47
8.4 Soil Conclusions 47
8.5 Sediment Conclusions 48
8.6 Recommendations 48

8.7 RA Schedule 49

9.0 REFERENCES..... 51

~~**1.0 INTRODUCTION..... 1**~~

~~1.1 Objectives ..... 1~~

~~1.2 Report Organization..... 1~~

~~**2.0 SITE BACKGROUND ..... 2**~~

~~2.1 Site Location and Description..... 2~~

~~2.2 Environmental Setting ..... 2~~

~~2.2.1 Geology..... 2~~

~~2.2.2 Hydrogeology ..... 3~~

~~2.3 Site History and Background Investigations..... 3~~

~~2.3.1 October 2003 Sediment Quality Evaluation ..... 4~~

~~2.3.2 March 2004 Near-Surface Soil Evaluation ..... 4~~

~~2.3.3 November 2004 Reduction of Ground Water Analysis ..... 5~~

~~2.3.4 August 2005 Remedial Investigation Report ..... 5~~

~~2.3.5 July 2007 NJDEP Correspondence Letter ..... 6~~

~~2.3.6 August 2008 Landfill Delineation Project ..... 8~~

~~2.3.7 February 2009 Regulatory Approach to Fort Monmouth Landfills ..... 8~~

~~2.3.8 2010 Sanitary Landfill Minor Disruption Approval ..... 9~~

~~2.3.9 2010 NJDEP Regulatory Requirements for Landfills..... 9~~

~~2.3.10 2010 Aerial Photograph Analysis ..... 9~~

~~**3.0 REMEDIAL ACTIVITIES..... 11**~~

~~3.1 Landfill Boundary and Near-Surface Soil Delineation Activities ..... 11~~

~~3.2 Monitoring Well Installation Activities..... 12~~

~~**4.0 MONITORING AND SAMPLING ACTIVITIES ..... 13**~~

~~4.1 Ground Water Monitoring ..... 13~~

~~4.2 Ground Water Sampling ..... 14~~

~~4.3 Surface Water Sampling ..... 14~~

~~4.4 Types of Waste Generated and Disposal Methods ..... 15~~

~~**5.0 SITE ANALYTICAL RESULTS ..... 16**~~

~~5.1 Landfill Boundary and Near-Surface Soil Sampling Activities ..... 16~~

~~VOCs..... 16~~

SVOCs 16
Metals 17
5.1.1 Soil Summary 17
5.1.2 Quality Assurance/Quality Control - Soil 18
5.2 Ground Water Sampling Results 18
5.2.1 VOCs 19
5.2.2 VO TICs 19
5.2.3 SVOCs 19
5.2.4 SVO TICs 19
5.2.5 Pesticides and PCBs 19
5.2.6 Metals 19
5.2.7 Ground Water Summary 20
5.2.8 Ground Water – QA/QC 20
5.3 Surface Water Sampling Results 21
5.3.1 VOCs 22
5.3.2 TICs 22
5.3.3 Metals 22
5.3.4 Pesticides and PCBs 23
5.3.5 Surface Water Summary 23
5.3.6 Surface Water – QA/QC 23
6.0 BACKGROUND METALS EVALUATION 26
6.1 Evaluation Approach 26
6.1.1 Nature of Apparent Sources 27
6.1.2 Relationship of Metal Levels to Turbidity 28
6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples 32
6.1.4 Occurrence of Atypical Spikes 34
6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern 37
7.0 RECEPTOR EVALUATION 40
7.1 Sensitive Receptor and Well Search 40
7.2 Vapor Intrusion (VI) Investigation 40
7.3 Baseline Ecological Evaluation (BEE) 41
7.4 Public Notification 41
8.0 REMEDIAL ACTION PROGRESS 43
8.1 Costs of Remediation Incurred to Date 43
8.2 Ground Water Conclusions 43
8.3 Surface Water Conclusions 43
8.3 Soil Conclusions 43
8.4 Sediment Conclusions 44

~~8.5 Recommendations ..... 44~~
~~8.5 Sampling Program ..... 44~~
~~8.6 RA Schedule ..... 45~~
~~**9.0 REFERENCES ..... 46**~~

FIGURES	
Figure 2-1	Site Location Map
Figure 2-2	Site Layout Map
Figure 2-3	Site Utilities
Figure 2-4	Wetlands Map
Figure 3-1	Landfill Boundary Delineation Map
Figure 3-2	Monitoring Well Location Map
Figure 4-1	Ground Water Elevation Contour Map (1st Quarter 2010)
Figure 4-2	Ground Water Elevation Contour Map (2nd Quarter 2010)
Figure 4-3	Ground Water Elevation Contour Map (3rd Quarter 2010)
Figure 4-4	Surface Water Sample Location Map
Figure 5-1	Ground Water Contaminant of Concern Distribution Map

TABLES	
Table 4-1	Ground Water Elevation Summary
Table 5-1	Ground Water Sampling Results - Site M-124MW148
Table 5-2	Ground Water Sampling Results - Site M-124MW159
Table 5-3	Ground Water Sampling Results - Site M-124MW1620
Table 5-4	Ground Water Sampling Results - Site M-124MW1721
Table 5-5	Ground Water Sampling Results - Site M-124MW1822
Table 5-6	Ground Water Sampling Results - Site M-124MW1923
Table 5-7	Ground Water Sampling Results - Site M-124MW2024
Table 5-8	Ground Water Sampling Results - Site M-12MW21
Table 5-9	Ground Water Sampling Results - Site M-12MW22
Table 5-10	Ground Water Sampling Results - Site M-12MW23
Table 5-11	Ground Water Sampling Results - Site M-12MW24
Table 5-12	Ground Water Sampling Results - Site M-12MW25
Table 5-13	Ground Water Sampling Results - Site M-12MW26

APPENDICES	
Appendix A	Electronic Document Library
Appendix B	MODFLOW Ground Water Modeling Report, Brinkerhoff Environmental Services, Inc., June 2010
Appendix C	Landfill Boundary Delineation & Near-Surface Soil Information
Appendix D	Fort Monmouth Standard Operating Procedures
Appendix E	Monitoring Well Logs and Records
Appendix F	Ground Water Monitoring and Sampling Information
Appendix G	Surface Water Monitoring and Sampling Information
Appendix H	Background Metals Evaluation

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

Appendix I	Receptor Evaluation and Public Notification
Appendix J	M-124 Landfill Costs, Schedule, Gantt Chart

Formatted: Font color: Auto

EXECUTIVE SUMMARY

This Remedial Investigation Report Addendum (RIRA) documents the remedial activities conducted by the Army to investigate soil, ground water, surface water, and sediment conditions at the M-124 Landfill, located in the Main Post Area of Fort Monmouth, New Jersey. This RIRA details remedial investigation activities conducted from the 2nd Quarter 2001 - 3rd Quarter 2010.

The M-124 Landfill ~~,~~consists of two sections – a northeast area (1.4 acres) and a southwest area (0.7 acres) - ~~is approximately 6.9 acres~~ and is bordered by Husky Brook to the north, Moonshot Drive and the 975 and 976 warehouses to the south, Murphy Drive to the east, and building 978 (electrical substation) and Malterer Avenue to the west.~~bordered by Murphy Drive to the east, Husky Brook and the M-12 Landfill to the south, and residential properties to the north and west.~~ The M-124 Landfill was in use from 1950-1966 ~~from 1965-1966~~ for disposal of domestic, industrial, and automobile wastes.~~building demolition debris.~~

In 1993, a background investigation was conducted by Roy F. Weston, Inc. (Weston) for 45 sites identified by Fort Monmouth and the New Jersey Department of Environmental Protection (NJDEP). Weston's findings were detailed in a report entitled: *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In the report, Weston recommended additional remedial investigation for the M-124 Landfill. In 1995, Weston conducted additional site investigation activities at 22 sites, including the M-124 Landfill – detailing their findings in a *Site Investigation Report* (December 1995). ~~—~~Initial field investigation activities included near-surface soil sampling, sediment sampling, surface water sampling, installation of monitoring wells, and ground water sampling. Based on the findings of ~~the~~ Weston's ~~-~~1995 SIR, the Army implemented a long-term ground water monitoring program. ~~Seven~~ Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26~~14MW18, M-14MW19, M-14MW20, M-14MW21, M-14MW22, M-14MW23, and M-14MW24~~) currently comprise the ~~quarterly~~ ground water monitoring ~~-~~ network at the M-12 Landfill~~program~~.

In September 2003, Versar prepared a *Remedial Investigation Report* (RIR), detailing remedial investigation activities conducted at the M-12 Landfill from 3rd Quarter 1996 – 1st Quarter 2001. Versar, Incorporated (Versar) prepared a *Remedial Investigation Report and Sediment Quality Evaluation for the M-12 and M-14 Landfills* (October 2003) and a *Remedial Investigation Report for Near-Surface Soils* (~~March~~ October 2004), which summarized sampling activities conducted by the Army to characterize Husky Brook sediments and near-surface landfill soil, respectively. ~~In August 2005, Versar prepared a *Remedial Investigation Report* (RIR), detailing remedial investigation activities conducted at the M-14 Landfill from 2nd Quarter 1997 – 1st Quarter 2001.~~

From ~~December 28~~March~~,~~ 1998 to ~~September~~May ~~-~~ 1999~~13, 2010~~, the Army characterized near-surface landfill soil via advancement of ~~203~~ 147 soil borings ~~across the M-14 Landfill~~and

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto, Superscript
Formatted: Font color: Auto
Formatted: Font color: Auto, Superscript
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

collection of 294 soil samples. In December 2008, the Army conducted landfill boundary delineation activities to refine the dimensions of the M-~~14~~-12 Landfill. The landfill boundary delineation study involved advancement and photo-documentation of test pit~~ss and soil borings~~. Near-surface soil concentrations of arsenic, lead, and ~~six~~ five semi-volatile organic compounds [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, ~~benzo(k)fluoranthene~~, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] exceeded NJDEP Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). Arsenic and lead are not considered M-124 Landfill contaminants of concern (COCs) because they are naturally-occurring within Fort Monmouth soils.

During the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010), ground water sampling was conducted quarterly. For the last eight ground water sampling quarters (4th Quarter 2008 – 3rd Quarter 2010), only metals (antimony, arsenic, beryllium, cadmium, lead, ~~nickel,~~ and ~~-~~thallium) exceeded NJDEP Ground Water Quality Standards (GWQS). Metals are not considered COCs at the M-124 Landfill because they are naturally-occurring within Fort Monmouth soils. Metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration. ~~-~~Since no COCs exceed NJDEP GWQS in M-12 Landfill ground water monitoring wells, a Classification Exception Area is not proposed.

During the current reporting period, surface water samples collected at the nearest upstream sampling point (SS-19) from the M-124 Landfill exceeded NJDEP SWQS for arsenic, bromodichloromethane, and lead. Surface water samples collected at the nearest downstream sampling point (SS-09) from the M-124 Landfill exceeded NJDEP SWQS for arsenic and lead. Metals are not considered COCs in Husky Brook because they are naturally-occurring within Fort Monmouth sediments. The detection of metals in surface water is due to a combination of a natural, dissolved component along with input from sample turbidity. Bromodichloromethane was detected during the June 2010 stream sampling event at stream sampling point SS-19. This is considered and isolated detection and is the first time bromodichloromethane has been detected at SS-09 since surface water sampling began at Husky Brook in 3rd Quarter 1996. Thus, bromodichloromethane is not considered a COC at the M-124 Landfill.

Future plans include collection of quarterly ground water and surface water samples until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP. The Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) as the next report submittal, which will include a final closure plan for the M-12 Landfill.

~~Future plans include preparation of a Remedial Action Selection Report (RASR)/Feasibility Study (FS), which will include a final closure plan for the M-14 Landfill. No further action is proposed for near-surface soils, ground water, surface water, and sediment at the M-14 Landfill. Since no COCs exceed NJDEP GWQS in M-14 Landfill ground water monitoring wells, a Classification Exception Area is not required and discontinuation of the long-term ground water~~

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

~~sampling program is warranted.~~

1.0 INTRODUCTION

This Remedial Investigation Report Addendum (RIRA) documents the remedial investigation activities conducted by the Army from the 2nd Quarter 2001 – 3rd Quarter 2010 to investigate soil, ground water, surface water, and sediment conditions at the M-124 Landfill.

1.1 Objectives

The objective of this RIRA is to document the site investigation activities conducted at the M-124 Landfill during the current reporting period of the 2nd Quarter 2001 – 3rd Quarter 2010. Natural attenuation with a long-term ground water monitoring program was implemented by the Army as a remedial action (RA) for the M-124 Landfill, based on recommendations in Weston's SIR (December 1995) and subsequent remedial investigation reports prepared by Versar, including: RIR (September 2003), *RIR and Sediment Quality Evaluation for the M-12 and M-14 Landfills* (October 2003), and *RIR for Near-Surface Soils* (~~March~~ October 2004)~~, and RIR (August 2005)~~. Copies of the above-referenced reports are provided in Appendix A. All remedial activities were conducted in accordance with the NJDEP's *Technical Requirements for Site Remediation* (*Technical Requirements*), New Jersey Administrative Code (N.J.A.C.) 7:26E *et seq*.

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

The RIR and subsequent preparation of this RIRA encompassed the following:

- Conducting quarterly ground water and surface water sampling and documenting the results to evaluate the effectiveness of the RA.
- Comparing the results of ground water and surface water sampling to the appropriate NJDEP GWQS and SWQS.
- Characterizing near-surface landfill soil and ~~Mill Creek~~Husky Brook sediments.
- Identifying and discussing recommendations for the RA.
- Documenting remedial activities as required by the *Technical Requirements*.

1.2 Report Organization

Section 2.0 discusses the site history and background information for the M-124 Landfill. Section 3.0 summarizes the remedial activities conducted. Section 4.0 discusses ground water and surface water monitoring and sampling activities. Section 5.0 presents the laboratory analytical results of soil, ground water, and surface water sampling. Sections 6.0 and 7.0 discuss the Background Metals Evaluation and receptor evaluation, respectively. Section 8.0 discusses the effectiveness of the RA and provides recommendations for the M-124 Landfill. Section 9.0 is the reference section.

Formatted: Font color: Auto
Formatted: Font color: Auto

2.0 SITE BACKGROUND

The following sections describe the site background of the M-124 Landfill. Included is a description of the site location, site history, background investigations, and previous technical reports.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County (Figure 2-1). The M-12 Landfill consists of two sections – a northeast area (1.4 acres) and a southwest area (0.7 acres) - and is bordered by Husky Brook to the north, Moonshot Drive and the 975 and 976 warehouses to the south, Murphy Drive to the east, and building 978 (electrical substation) and Malterer Avenue to the west. The M-12 Landfill was in use from 1950-1966 for disposal of domestic, industrial, and automobile wastes. ~~The M-14 Landfill is approximately 6.9 acres and is bordered by Murphy Drive to the east, Husky Brook and the M-12 Landfill to the south, and residential properties to the north and west (Figure 2-2). The M-14 Landfill was in use from 1965-1966 for disposal of building demolition debris.~~ Since 1966, there has been growth and stabilization of vegetation (grass, trees, and bushes) along the surface and boundaries of the landfill. General utilities servicing M-124 Landfill are depicted on Figure 2-3. Wetland areas~~s~~ present on the Main Post are depicted on Figure 2-4.

2.2 Environmental Setting

This section summarizes the description of the geological and hydrogeological setting of the area surrounding Fort Monmouth and the Main Post area as presented in Versar, Inc.'s ~~August 2005~~September 2003 RIR (Appendix A).

2.2.1 Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-124 Landfill is located in the Outer Coastal Plain sub-province, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks. These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary periods. The mineralogy ranges from quartz to glauconite.

As presented in the Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, prepared by Weston (Weston 1995), several natural and anthropogenic factors contribute to the wide range in concentrations of metals found in soils, which further

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

impact the concentration of metals in ground water. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, and manganese (among others), which are likely to be present at elevated concentrations in the ground water, particularly when sediments are entrained in the collected ground water samples.

Formatted: Font color: Auto

2.2.2 Hydrogeology

The water table aquifer on the Main Post is identified as part of the "Navesink-Hornerstown Confining Units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Formatted: Font color: Auto

Wells installed in the Red Bank and Tinton Sands produce approximately 2-25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2-9 feet bgs). Water in the surficial aquifer generally flows east towards the Atlantic Ocean.

Formatted: Font color: Auto

Additionally, Brinkerhoff prepared a *MODFLOW Ground Water Modeling Report*, dated June 10, 2010, which is included as Appendix B. In this report, Brinkerhoff developed and refined site-wide ground water models for both the Main Post and the Charles Wood areas of Fort Monmouth (Brinkerhoff 2010).

Formatted: Font color: Custom Color(RGB(0,0,204))

2.3 Site History and Background Investigations

In 1993, the Army contracted Weston to conduct a background investigation for 45 sites identified by Fort Monmouth and the NJDEP. Weston's findings were detailed in a report entitled: *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In the report, Weston recommended that additional remedial investigation be conducted for the M-124 Landfill. In 1995, Weston conducted additional site investigation activities at 22 sites, including the M-124 Landfill – detailing their findings in a *Site Investigation Report* (December 1995). Initial field investigation activities at the M-124 Landfill included near surface soil sampling, sediment sampling, surface water sampling, installation of monitoring wells, and ground water sampling.

Formatted: Font color: Auto

Formatted: Font color: Auto

Based on the findings of the Weston's 1995 SIR, the Army implemented of a long-term ground water monitoring program at the M-124 Landfill. ~~,~~ Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26) currently comprise the ground water monitoring network at the M-12 Landfill. ~~Seven ground water monitoring wells (M-14MW18, M-14MW19, M-14MW20, M-14MW21, M-14MW22, M-14MW23, and M-14MW24) currently comprise the quarterly ground water monitoring program.~~

Formatted: Font color: Auto

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Auto

In September 2003, Versar prepared a RIR, detailing remedial investigation activities conducted at the M-12 Landfill from 2nd Quarter 1997 – 1st Quarter 2001. ~~Versar Incorporated (~~Versar also ~~)~~ prepared a *Remedial Investigation Report and Sediment Quality Evaluation for the M-14 Landfill* (October 2003) and a *Remedial Investigation Report for Near-Surface Soils* (~~March~~ October 2004), which summarized sampling activities conducted by the Army to characterize Husky Brook sediments and near-surface landfill soil, respectively. ~~In August 2005, Versar prepared a *Remedial Investigation Report* (RIR), detailing remedial investigation activities conducted at the M-14 Landfill from 2nd Quarter 1997 – 1st Quarter 2001.~~

Copies of the above-referenced reports are provided in Appendix A. The following sections summarize previous remedial investigation activities conducted at the M-124 Landfill.

2.3.1 September 2003 Remedial Investigation Report

Following Weston's December 1995 SIR, the Army continued quarterly ground water sampling at the M-12 Landfill, as detailed in Versar's September 2003 RIR (Appendix A).

Sixteen rounds of ground water samples were collected from June 1997 - February 2001 and analyzed for VOCs, SVOCs, pesticides, PCBs, and TAL metals. Ground water concentrations of VOCs, pesticides, and PCBs were laboratory-determined to be in compliance with NJDEP GWQS. Only SVOC TICs and metals exceeded NJDEP GWQS in M-12 Landfill monitoring wells during the June 1997 – February 2001 reporting period. In addition, one SVOC, bis (2-ethylhexyl) phthalate, was detected at concentrations exceeding NJDEP GWQS in one monitoring well (M-12MW25) during one round of ground water sampling (2nd Quarter 2000).

Also as part of the RI, the Army conducted a soil sampling program in March 2001. Soil boring locations were selected based on ground water quality results from monitoring wells M-12MW16 and M-12MW22, in which concentrations of lead and arsenic exceeded NJDEP GWQS. Soil sampling was conducted in the vicinity of monitoring wells M-12MW16 and M-12MW22 to determine whether arsenic and lead concentrations detected in ground water samples were the result of a localized source within the landfill or were due to naturally soil conditions. The results of the investigation suggested that ground water was not adversely impacted by the presence of these metals in soil proximal to M-12MW16 and M-12MW22 (Versar, 2003a).

Based on the results of soil and ground water sampling conducted from June 1997 - February 2001, Versar concluded that no COCs exist in soil or ground water at the M-12 Landfill. NFA was recommended for both soil and ground water.

2.3.2~~1~~ October 2003 Sediment Quality Evaluation

Studies conducted at other Main Post landfills (e.g. M-2 Landfill and M-8 Landfill) indicated that disposal of PCB-containing materials (e.g., electrical ballasts) occurred. PCBs were

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font: Not Italic, Font color: Auto
Formatted: Font: Not Italic, Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto, Superscript
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

detected in soil and/or ground water samples collected at both the M-2 and M-8 Landfills. Based on these observations, in the second quarter of 2000, the Army conducted a sediment sampling investigation to evaluate potential impacts to stream sediments in creeks and/or brooks adjacent to Main Post and Charles Wood Area landfills.

On April 10, 2000, to determine potential PCB-related impacts to sediments in Husky Brook, the Army collected 25 surface and near-surface sediment samples from Husky Brook. The samples were collected along the 1,700-foot portion of Husky Brook that bisects the M-12 and M-14 Landfills. Sample depths ranged from surface (0-6 inches) to near-surface (6-12 inches and 18-24 inches). All 25 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations as defined in the NJDEP's *Guidance for Sediment Quality Evaluations* (NJDEP 1998).

With the exception of one anomalous duplicate sample detection of the PCB Arcolor 1254, no PCBs were detected in any of the 25 sediment samples collected from Husky Brook. Based on NJDEP's guidance criteria, PCBs are not impacting sediments in Husky Brook. In addition, no potential exists for long-term, adverse, benthic effects in Husky Brook associated with the M-12 and M-14 Landfills. A ~~No Further Action (~~NFA~~)~~ determination for Husky Brook sediments was recommended for the M-12/M-14 Landfills.

Additional details regarding the October 2003 sediment quality evaluation is provided in Versar's *Remedial Investigation Report and Sediment Quality Evaluation for the M-12 and M-14 Landfill* (Appendix A).

2.3.~~3~~2 ~~March~~ October 2004 Near-Surface Soil Evaluation

To evaluate if the existing soil cover at the M-1~~2~~4 Landfill complies with the Solid Waste Disposal Act of 1965, the Army characterized near-surface landfill soils via installation and sampling of 1~~47~~19 soil borings. From March 1998 to September 1999~~December 1998-January 1999~~, the Army advanced soil borings and collected soil samples using a 2-inch Geoprobe® Macrocore sampler to a maximum depth of two feet below ground surface (bgs). All sampling activities were conducted in accordance with *Fort Monmouth Standard Sampling Operating Procedures* (DPW 1997) and the NJDEP *Field Sampling and Procedures Manual*. A total of ~~238~~ 294 soil samples were collected from the ~~119~~ 147 borings and analyzed for ~~volatile organic compounds (~~VOCs~~)~~, ~~semi-volatile organic compounds (~~SVOCs~~)~~, pesticides, ~~poly-chlorinated biphenyls (~~PCBs~~,)~~ and ~~total analyte list (TAL)~~ metals. The locations of the borings were established in a grid-like pattern within the previously designated boundaries of the M-1~~2~~4 Landfill. The ~~*Remedial Investigation Report*~~*RIR for Near-Surface Soils* (Versar, October ~~March~~ 2004) provides a detailed explanation of the soil sampling activities conducted at the M-1~~2~~4 Landfill (Appendix A).

~~SVOCs, pesticides, and metals were detected in surface soil samples at concentrations exceeding the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC).~~ Near-surface soil

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

concentrations of arsenic, lead, and five semi-volatile organic compounds [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] exceeded NJDEP Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). Arsenic and lead are not considered M-12 Landfill COCs because they are naturally-occurring within Fort Monmouth soils.

~~VOCs and PCBs were detected at concentrations in compliance with the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC).~~

However, given the inactive and undisturbed state of the landfill, the lack of groundwater use at or hydraulically downgradient of the M-124 Landfill, and low COC concentrations in shallow surface soils, ~~No Further Action~~NFA ~~–~~is recommended for near-surface soils at the M-~~14~~-12 Landfill.

To address M-12 Landfill near-surface soil samples that do not meet NJDEP soil remediation standards, the Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12 Landfill.

~~To address near-surface soil samples that do not meet applicable NJDEP soil remediation standards at the M-14 Landfill, the Army proposes to implement landfill capping as an engineering control. A cap that allows for proper drainage and facilitates growth of vegetation is recommended to be implemented. Should areas of significant surface contamination be encountered during the landfill capping activities, then "hot-spot" removals shall be undertaken as outlined in the November 17, 2010 NJDEP Regulatory Requirements. This proposed capping action is an appropriate and prudent measure that will provide an ample physical barrier to direct contact by persons and wildlife that may traverse the area and undertake reasonably expected activities. The Army plans to prepare a formal Landfill Closure Plan with the above-referenced recommendations for submittal to NJDEP for review and approval.~~

2.3.~~4~~3 November 2004 Reduction of Ground Water Analysis

In November 2004, based on results of long-term ground water monitoring data, the Army requested a reduction in ground water analysis for samples collected from M-124 Landfill monitoring wells. No VOCs, SVOCs, pesticides, and PCBs were detected at concentrations exceeding NJDEP GWQS in any M-124 ~~-~~Landfill monitoring well since 2nd Quarter ~~2001~~2003 (only SVOC TICs exceeded NJDEP GWQS in 2nd Quarter 2003). On November 1~~2~~6, 2004, in an email correspondence to the Army, the NJDEP approved the reduction of ground water sample analysis to ~~VOCs and~~ TAL metals only (Appendix A).

~~**2.3.4 August 2005 Remedial Investigation Report**~~

~~Following Weston's December 1995 SIR, the Army continued quarterly ground water sampling at the M-14 Landfill, as detailed in Versar's August 2005 RIR (Appendix A).~~

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Normal, Space After: 0 pt
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Normal, Space After: 0 pt
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Superscript
Formatted: Superscript
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

~~Sixteen rounds of ground water samples were collected from June 1997 – January 2001 and analyzed for VOCs, SVOCs, pesticides, PCBs, and TAL metals. Ground water samples collected from two additional rounds of sampling using low-flow methodology were analyzed for TAL metals. Ground water concentrations of SVOCs, pesticides, or PCBs were laboratory-determined to be in compliance with NJDEP GWQS. One VOC, *tert* butyl alcohol (TBA), was detected at concentrations exceeding NJDEP GWQS in one well (M-14MW20) during one round of ground water sampling (1st Quarter 1998). TBA was detected at a concentration of 101.37 µg/L, exceeding the NJDEP GWQS of 100 µg/L. This TBA detection was considered an isolated event as TBA concentrations for all subsequent ground water sampling events at M-14MW20 have been ND. Twelve metals were detected in ground water samples collected from M-14 Landfill monitoring wells at concentrations exceeding NJDEP GWQS.~~

~~Based on the results of ground water sampling conducted from June 1997 – January 2001, Versar concluded that no COCs exist in ground water at the M-14 Landfill. NFA was recommended for ground water.~~

2.3.~~5~~5 July 2007 NJDEP Correspondence Letter

On July 25, 2007, the NJDEP sent the Army a correspondence letter (Appendix A), which commented on the following M-124 Landfill reports prepared by Versar:

- September ~~August 12, 2005~~2003 *RIR for M-124 Landfill*
- ~~March 17, 2004~~October 2003 *RIR for Near Surface Soils, M-124 Landfill*
- October 15, 2003 *RIR and Sediment Quality Evaluation, M-12/M-14 Landfills*

The NJDEP's July 25, 2007 comments are summarized in the following sections.

M-12 and M-14 Landfills Recognized as One Site

NJDEP considers the M-12 and M-14 landfills one site, separated by Husky Brook, which bisects the two landfills. NJDEP further stated that the Army has recognized these sites as one site with regards to the sediment quality evaluation and, to a lesser extent, the surface water evaluation. Additionally, NJDEP stated that the soil and ground water sampling results from both landfills are similar, and the respective RIRs have concluded that shallow ground water beneath both landfills flows towards Husky Brook.

Work Plan Submittal

The NJDEP stated that the Army should submit a comprehensive investigation work plan for the NJDEP's review and approval prior to initiating any of the additional sampling requested in the July 25, 2007 NJDEP correspondence letter. A Work Plan was recommended to ensure that the

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto

NJDEP and the Army are in agreement on all details prior to commencement of sampling.

Landfill Boundary Delineation

Based on a review of aerial photographs, NJDEP identified potential disposal areas outside the known boundaries of the M-12 and M-14 Landfills. As such, NJDEP requested that the Army review and revisit the delineation of all landfill areas at Fort Monmouth, including the M-12 and M-14 Landfills. NJDEP further stated that conducting test pits to verify geophysical results of landfill boundaries would be good practice, and verifying landfill boundaries prior to closing and transfer of Fort Monmouth would be in the Army's best interest.

Surface Soils

According to NJDEP, results of surface soil sampling indicated soil in the 0 to 12-inch interval contains SVOCs and metals at concentrations exceeding NJDEP RDCSCC throughout the M-12 Landfill and in two distinct areas of the M-14 Landfill. Therefore, these surface soils have the potential for direct contact, and a remedial action would be required to minimize or eliminate that potential. Depending on the location and extent of the soil contamination exceeding the RDCSCC, targeted soil excavations may be feasible. At a minimum, engineering controls such as additional soil cover, fencing, and warning signs would be required, in conjunction with a deed notice.

NJDEP further stated that in Versar's March 17, 2004 *RIR for Near-Surface Soils*, compliance averaging of soil sample results was done incorrectly in several cases. Also, averaging was applied to arsenic and several polyaromatic hydrocarbons (PAHs), which the NJDEP does not allow because the health-based Soil Cleanup Criteria (SCC) is less than the RDCSCC.

Surface Water and Sediments

NJDEP required a Baseline Ecological Evaluation (BEE) to determine whether receptors, especially within Husky Brook, have been impacted by the M-12 and M-14 Landfills.

NJDEP recommended collection and analysis of sediment samples for TCL+30 and TAL metals. Sampling locations would include one upstream, one downstream, and two locations along the landfills - at least one on each side of the tributary that splits the M-12 Landfill, and one from the tributary that bisects the M-12 Landfill.

NJDEP noted that surface water sample location SS-12, which is in Husky Brook Pond and was used as an upstream sampling point, should be used in the future as an upstream sampling point for both the M-12 and M-14 Landfills.

NJDEP also recommended, based on the presence of measurable VOCs in surface water samples, additional surface water samples should be collected along Husky Brook in conjunction

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

with the recommended sediment sampling. The NJDEP recommended using passive diffusion bags (PDBs) to collect surface water samples for VOC analysis. The PDBs were recommended to be deployed in the sediments to monitor shallow ground water discharging to Husky Brook. In addition, NJDEP requested that the Army evaluate any Army-owned properties upstream of the M-12 and M-14 Landfills that could be the source of the VOC concentrations detected in surface water samples collected from Husky Brook.

Ground Water

Based on the following concerns and deficiencies, NJDEP stated that a NFA could not be issued for ground water:

- Upgradient monitoring wells must be installed and sampled at each landfill to provide data for remedial decision making. Samples from the upgradient wells should be analyzed for TAL metals only.

- An additional round of ground water samples must be collected from all M-12 and M-14 Landfill monitoring wells to provide data for remedial decision making because the existing wells at both landfills may not have been sampled since 2001.

- Approximately four wells, including an upgradient well, should be installed in the western portion of the M-14 Landfill. Ground water samples collected from these wells should be analyzed for TCL+30 and TAL metals.

- Paper copies of all sampling documentation (e.g. ground water field parameters and low-flow sampling sheets) must be submitted with summary tables in future reports.

2.3.6 August 2008 Landfill Delineation Project

On August 1, 2008, to confirm the boundaries of nine solid waste landfills at Fort Monmouth, including the M-124 Landfill, the Army submitted a proposal to the NJDEP to conduct a landfill delineation study involving advancement of test pits and soil borings. The NJDEP reviewed and approved the Army's proposed study in a letter dated August 19, 2008 (NJDEP 2008) (Appendix A).

Formatted: Font color: Auto

Details of the M-124 Landfill delineation project are included in Section 3.1 of this RIRA.

Formatted: Font color: Auto

Formatted: Font color: Auto

2.3.7 February 2009 Regulatory Approach to Fort Monmouth Landfills

In a February 24, 2009 correspondence from NJDEP (Appendix A), the NJDEP outlined its requirements for Fort Monmouth landfills:

- NJDEP stated that surface soils on all the landfills contain contaminants at concentrations exceeding New Jersey Soil Remediation Standards (SRS), and some of these contaminants appear to be associated with specific waste materials such as PCBs. PCBs have not been detected in M-124 Landfill surface soils.

- NJDEP stated that in locations where SRSs are exceeded, the NJDEP would accept placement of an additional one-foot-thick clean soil cover to eliminate direct contact. Existing areas of exposed waste deposits must either be removed or properly re-graded and covered with 1-2 feet of clean soil cover. The NJDEP also stated that it would verify that the NJDEP Division of Solid and Hazardous Waste (DSHW) would accept one additional foot of soil cover as a final cover for the landfills.

- NJDEP DSHW requires evaluation of the landfills for methane gas generation and installation of passive or active gas venting systems as necessary. NJDEP stated that Fort Monmouth must perform a methane gas evaluation for each landfill or present existing documentation and data that conclusively show absence of subsurface methane gas at each landfill. In addition, deed notices would be required for all landfills due to the documented presence of waste deposits, even if NFA status was achieved.

2.3.8 2010 Sanitary Landfill Minor Disruption Approval

In September 2010, NJDEP granted approval of a Sanitary Landfill Minor Disruption Permit (Permit No. LCB100002) for conducting remedial investigation activities at the nine Fort Monmouth landfills (Appendix A). The minor disruption activities approved by the NJDEP include soil borings, soil sampling, test pits, installation of piezometers and monitoring wells, injection of chemical and biological oxidation agents to enhance ground water remediation, and methane gas surveys. The approval was granted with a five-year expiration date.

2.3.9 2010 NJDEP Regulatory Requirements for Landfills

In a letter dated November 2010, NJDEP provided Appendix 1 of *NJDEP Regulatory Approach – Fort Monmouth Landfills* (Appendix A). The letter indicates that the NJDEP Solid and Hazardous Waste Program (SHWP) determined that NJDEP SRP will assume the lead regulatory role for Fort Monmouth. Appendix 1 provides a summary and discussion of all NJDEP regulatory requirements for the Fort Monmouth Landfills including surface water, sediment, landfill cover/near-surface soils, methane gas, deed notices, and operation and maintenance.

2.3.10 2010 Aerial Photograph Analysis

In 2010, the Army conducted an analysis of historical aerial photographs for landfills on the Main Post ~~landfills~~ (Appendix A).

Formatted: Font color: Auto
Formatted: Font: Bold, Font color: Auto
Formatted: Heading 3, Left
Formatted: Font color: Auto
Formatted: Font color: Auto

May 2, 1957 Aerial Photograph

A 1957 aerial photograph of Fort Monmouth reveals that additional buildings were constructed on the eastern side of the Main Post, as well as an oval running track towards the southern-central portion of the Main Post. An incinerator is depicted in the southeast corner of the Main Post boundary near Main Street. In the photograph, the M-3, M-4, M-5, and M-8 Landfills are visible on the northeastern portion of the Main Post. A small magazine area is noted on the figure, located slightly north of the current M-2 Landfill area on the southwestern section of the Main Post. The surrounding area appears to be more developed, with less open space and additional residential housing.

May 13, 1963 Aerial Photograph

Changes in this aerial photograph are primarily noted for the M-3, M4, M-5, and M-8 Landfills, which consolidate all of the landfills into one area labeled "Site 1." An L-shaped wall appears to divide the M-8 and M-5 Landfills. Possible construction debris and light-toned surface are noted in the northwest portion of the M-5 Landfill. The M-2 Landfill is labeled as "Site 2 Poss Landfill". A small fill area is depicted behind the Gosselin housing area within the vicinity of the current M-14 Landfill.

December 6, 1969 Aerial Photograph

The 1969 photograph of Fort Monmouth shows several new buildings that still remain today: the theater (Building 1215), bowling alley (Building 689), and Buildings 361, 362, and 363. The "Site 1" area that encompasses the M-3, M-4, M-5, and M-8 landfills shows a defined boundary for the M-8 Landfill and is now labeled as a landfill. Three new fill areas have been noted on the figure: (1) an area located within a small section of the current M-18 Landfill; (2) an additional fill area in the western portion of the M-12 Landfill; and (3) a small fill area located south of the 750 area.

March 13, 1974 Aerial Photograph

The 1974 photograph of Fort Monmouth reveals minor changes to the installation. The figure depicts the Main Post from the M-2 and M-3 Landfills to Oceanport Avenue. The M-2, M-3, M-8, M-12, M-14, and M-18 Landfills seem to be undisturbed and vegetated.

Formatted: Normal

Formatted: Font color: Auto

Formatted: Font color: Custom Color(RGB(0,0,204))

3.0 REMEDIAL ACTIVITIES

Based on information requested by NJDEP in their correspondence letters, the findings detailed in Versar's September 2003 RIR, October 2003 *RIR and Sediment Quality Evaluation for the M-12 and M-14 Landfills*, October~~March~~ 2004 *RIR for Near-Surface Soils*~~, August 2005 RIR~~, and previous work conducted by Weston in 1995, the Army conducted additional RI activities at the M-124 Landfill, including landfill boundary delineation activities and installation of monitoring wells.

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

3.1 Landfill Boundary and Near-Surface Soil Delineation Activities

In accordance with the NJDEP's August 19, 2008 approval letter, in January and March 2009, the Army conducted landfill boundary delineation activities to refine the dimensions of the M-184 Landfill. ~~The landfill boundary delineation study involved advancement of test pits and soil borings.~~ Test pits and trenches were advanced around the known perimeter of the M-184 Landfill boundary at 24~~1~~ locations (Figure 3-1). Trench logs and photographic documentation logs are provided in Appendix C. The landfill boundary delineation activities resulted in minor expansion of the ~~northern~~ southern boundary~~y~~ of the M-184 Landfill (Figure 3-1).

Formatted: Font color: Auto

~~In addition to conducing test pits, the Army collected soil samples to define the boundaries of M-~~

~~14 Landfill and to characterize near-surface soil quality conditions between the landfill (non-residential) and single-family structures (residential area) to the north. From December 28, 1998 to May 13, 2010, in accordance to the NJDEP's *Technical Requirements* (N.J.A.C. 7:26:E), the Army characterized the near-surface soils via advancement of 203 soil borings across the M-14 Landfill (Appendix C). All soil samples were analyzed for SVOCs, VOCs, pesticides, PCBs, and TAL metals. All soil sampling activities, including waste disposal, were conducted in accordance with applicable Fort Monmouth Standard Operating Procedures (Appendix D), which comply with the most current version of the NJDEP's *Field Sampling and Procedures Manual*.~~

~~Using a two-inch Geoprobe® Macrocore sampler, 518 soil samples were collected from the 203 soil borings. The soil boring locations were established in a grid-like pattern within the previously designated boundaries of the M-14 Landfill. Each soil sample, except those collected for VOC analysis, were collected between 0-12 inches bgs. Soil samples collected for VOC analysis were collected from 12-24 inches bgs since surface soils do not retain volatile constituents over time. Laboratory analyses of the soil samples collected were conducted by the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory. A summary of the soil sample collection information and analyses performed is provided in Appendix C.~~

~~Results of the December 28, 1998 – May 13, 2010 soil sampling program are discussed in Section 5.1 of this RIRA.~~

3.2 Monitoring Well Installation Activities

In accordance with the NJDEP's July 25, 2007 correspondence letter, during the current reporting period (2nd Quarter 2001 - 3rd Quarter 2010), the Army installed two~~an~~ upgradient monitoring wells along the ~~western~~ southern border of the M-124 Landfill. Monitoring wells M-124~~MW1~~4 and M-12MW15 were~~8 was~~ installed on~~in~~ July 19-20, 2010. Ground water samples collected from monitoring wells M-12MW14 and M-12MW15 ~~M-14MW18~~were ~~were~~ analyzed for TCL+30 and TAL metals. Ground water sampling results are discussed in Section 5.2. The monitoring well logs, permits, and records are provided in Appendix E.

Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26) currently comprise the ground water monitoring network at the M-12 Landfill. ~~Seven ground water monitoring wells (M14-MW18, M14-MW19, M14-MW20, M14-MW21, M14-MW22, M14-MW23, and M14-MW24) currently comprise the quarterly ground water monitoring program.~~ The locations of all ~~seven~~ thirteen monitoring wells at M-124 Landfill are presented in Figure 3-2.

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the Long Term Monitoring (LTM) program implemented at the M-124 Landfill, quarterly ground water monitoring and surface water sampling was conducted from the 2nd Quarter 2001 - 3rd Quarter 2010. Ground water samples were collected from thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26)~~seven monitoring wells (M-14MW18, M-14MW19, M-14MW20, M-14MW21, M-14MW22, M-14MW23, and M-14MW24)~~. Static depth-to-water was measured to determine ground water elevations for all thirteen ~~seven~~ monitoring wells for each ground water monitoring event.

Surface water samples were collected from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28) across Fort Monmouth's Main Post. The nearest upstream sampling point from the M-124 Landfill is SS-19. The nearest downstream sampling point from the M-124 Landfill is SS-9.

Sampling was conducted by the Army in accordance with the established protocols as described in the Fort Monmouth SOPs and the NJDEP's most recent *Field Sampling and Procedures Manual*. Applicable Fort Monmouth SOPs are provided in Appendix D. ~~Ground water samples were analyzed for VOCs and metals until November 2004.~~

In November 2004, based on results of long-term ground water monitoring data, the Army requested a reduction in ground water analysis for samples collected from M-124 Landfill monitoring wells. On November 126, 2004, in an email correspondence to the Army, the NJDEP approved the reduction of ground water sample analysis to ~~VOCs and~~ TAL metals only (Appendix A).

Refer to Appendix F for ground water details and Appendix G for surface water details. Laboratory analyses of the samples were conducted at the FMETL, a New Jersey-certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During each round of the ground water sampling, depth-to-water measurements were collected at each monitoring well and recorded with an accuracy of 0.01 foot. Depth-to-ground water measurements for the last eight quarters of ground water sampling are presented in Table 4-1. During the current reporting period, no separate phase product was ~~not~~ observed in any of the thirteen ~~seven~~ M-124 Landfill monitoring wells.

Ground water contour maps were generated for the 1st Quarter 2010 through the 3rd Quarter 2010 (Figures 4-1 through 4-3). Ground water was encountered at the M-~~14~~-12 Landfill at

Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto

depths ranging from ~~5.84~~ 1.98 feet to ~~7.66~~10.31 feet bgs, grading towards Husky Brook. Starting in 2010, depth-to-water measurements were collected for the entire Main Post in lieu of site-specific measurements in order to provide a more accurate representation of ground water elevation. Depth-to-water measurements are summarized quarterly in Appendix F. NJDEP Contour Map Reporting Forms are also presented in Appendix F for each quarterly sampling event.

The contour maps indicate that shallow ground water underlying the M-1~~2~~4 Landfill consistently flows towards Husky Brook. Significant variations in ground water flow conditions were not observed during the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling of the seven M-1~~2~~4 Landfill monitoring wells was conducted by the Fort Monmouth DPW.

Sampling equipment was decontaminated before and after each use. Following collection, the ground water samples were placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Appendix F includes all associated ground water data, tables and figures for each sampling event. Appendix F also includes ground water elevation summaries and ground water contour maps. Depth-to-water measurements were collected on a post-wide basis starting with the 1st Quarter 2010. Considering the much larger number of data points, post-wide data are considered to be better representations of ground water conditions. Contour Map Reporting Forms, Isoconcentration Maps, Isoconcentration Summaries, and full laboratory analytical data are also provided in Appendix F. Analytical results are discussed in Section 5.2.

4.3 Surface Water Sampling

During the current reporting period, surface water sampling was conducted by the Fort Monmouth DPW as part of the base-wide surface water sampling program. A total of 105 surface water samples were collected in seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). A Surface Water Sample Location Map is provided as Figure 4-4. The samples were analyzed by the FMETL. The results of these analyses are discussed in Section 5.3.

Sampling equipment was decontaminated before and after each use. Surface water samples were collected and placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto

All surface water sampling data along with supporting data are presented in Appendix G, including copies of the chain-of-custody forms, laboratory analytical data, a summary of surface water sampling activities for Surface Water (Rounds 1 through 56) for all sampling points, sampling rounds, sample identifications, stream sampling locations, collection/analysis dates, analytical parameters, and analytical methods.

Formatted: Font color: Auto

4.4 Types of Waste Generated and Disposal Methods

The waste types generated by the sampling activities included polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment (PPE). The tubing, bailers, string, PPE, purge water, and decontamination solutions were properly disposed offsite.

5.0 SITE ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the M-~~14~~-12 Landfill based on soil sampling and the seven most recent quarterly rounds of ground water and surface water samples collected and analyzed during the current reporting period.

5.1 Landfill Boundary and Near-Surface Soil Sampling Activities

From March 1998 to September 1999, the Army characterized near-surface landfill soil via advancement of 147 soil borings (B-1 through B-61 and B-63 through B-148) and collection of 294 soil samples. ~~From December 23, 1998 to May 13, 2010, 518 soil samples were collected from 203 soil borings at the M-14 Landfill.~~ Soil analytical results were compared to the NJDEP's November 4, 2009 Soil Remediation Standards (N.J.A.C. 7:26D), as per Attachment 1 of NJDEP's November 2010 Letter: *Regulatory Approach to Fort Monmouth Landfills*. Soil analytical data tables for the M-12~~4~~ Landfill are provided in Appendix C.

VOCs

No VOCs exceeded NJDEP NRDCSRS.

SVOCs

The following SVOCs were detected at concentrations exceeding NJDEP NRDCSRS in at least one soil sample: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.~~in at least one soil sample: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene).~~

Benzo(a)anthracene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in seven soil samples. Concentrations ranged from 2.3 mg/kg in B-104 (3-9 inches bgs) to 17 mg/kg in B-127 (0-6 inches bgs).

Benzo(a)pyrene was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in 50 soil samples. Concentrations ranged from 0.21 mg/kg in B-1 (6-12 inches bgs) and B-120 (6-12 inches bgs) to 17 mg/kg in B-127 (0-6 inches bgs).

Benzo(b)fluoranthene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in nine soil samples. Concentrations ranged from 2.2 mg/kg in B-112 (6-12 inches bgs) to 15 mg/kg in B-127 (0-6 inches bgs).

Dibenz(a,h)anthracene was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in eight soil samples. Concentrations ranged from 0.32 mg/kg in B-25 (6-12 inches bgs) to 3.2 mg/kg in B-127 (0-6 inches bgs).

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font: Not Italic
Formatted: Font: Not Italic
Formatted: Font: Not Italic
Formatted: Font: Not Italic
Formatted: Font: Not Italic
Formatted: Font color: Custom Color(RGB(0,0,204))

Indeno(1,2,3-cd)pyrene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in three soil samples. Concentrations ranged from 2.7 mg/kg in B-122 (0-6 inches bgs) to 7.5 mg/kg in B-127 (0-6 inches bgs).

Pesticides/PCBs

No pesticides or PCBs exceeded NJDEP NRDCSRS.

~~***Benzo(a)anthracene*** was detected at concentrations exceeding the NJDEP NRDCSRS of 2.0 mg/kg in six soil samples. Concentrations ranged from 2.4 mg/kg at B-8 (6-12") and B-114 (6-12") to 27.0 mg/kg at B-60 (6-12").~~

~~***Benzo(a)pyrene*** was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in twenty soil samples. Concentrations ranged from 0.24 mg/kg at B-11 (6-12") and B-43 (6-12") to 26 mg/kg at B-60 (6-12").~~

~~***Benzo(b)fluoranthene*** was detected at concentrations exceeding the NJDEP NRDCSRS of 2.0 mg/kg in six soil samples. Concentrations ranged from 2.0 mg/kg at B-112 (6-12") to 23.0 mg/kg at B-60 (6-12").~~

~~***Benzo(k)fluoranthene*** was detected at concentrations exceeding the NDJEP NRDCSRS of 23.0 mg/kg in soil sample B-60 (6-12") at a concentration of 25 mg/kg.~~

~~***Dibenz(a,h)anthracene*** was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in seven soil samples. Concentrations ranged from 0.21 mg/kg at B-25 (6-12") to 2.05 mg/kg at D-05 (0-6").~~

~~***Indeno(1,2,3-cd)pyrene*** was detected at concentrations exceeding the NJDEP NRDCSRS of 2.0 mg/kg in three soil samples. Concentrations ranged from 4.1 mg/kg at D-05 (0-6") to 13 mg/kg at B-60 (6-12").~~

Metals

Two metals (arsenic and lead) were detected at concentrations exceeding NJDEP NRDCSRS in at least one soil sample. These analytical results are summarized in Tables 5-~~1~~5 through 5-7 of Appendix C~~7~~.

Arsenic was detected at concentrations exceeding the NJDEP NRDCSRS of 19 mg/kg in 57 soil samples. Concentrations ranged from 19.1 mg/kg in B-53 (4-10 inches bgs) to 51.3 mg/kg in B-64 (6-12 inches bgs).

Lead was detected at concentrations exceeding the NJDEP NRDCSRS of 800 mg/kg in one soil

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Auto

Formatted: Font color: Auto

sample location at a concentration of 1090 mg/kg at B-139 (0-6 inches bgs).
~~***Arsenic*** was detected at concentrations exceeding NJDEP NRDCSRS of 19 mg/kg in 58 soil samples. Concentrations ranged from 19.2 mg/kg at C-11 (0-6") to 168 mg/kg at B-28 (6-12").~~

~~***Lead*** was detected at concentrations exceeding the NJDEP NRDCSRS of 800 mg/kg in one soil sample D-37 (0-6") at a concentration of 946 mg/kg.~~

5.1.1 Soil Summary

No VOCs, pesticides, or PCBs were detected at concentrations ~~greater than~~exceeding NJDEP NRDCSRS. Thus, VOCs, pesticides and PCBs are not considered soil COCs at the M-124 Landfill. Although arsenic and lead concentrations exceeded NJDEP NRDCSRS, these metals are not considered COCs because they are naturally-occurring within Fort Monmouth soils. Refer to the Background Metals Evaluation provided in Section 6.0 of this RIRA for additional details regarding naturally-occurring metals in Fort Monmouth soils.

The ~~six~~ five SVOCs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] ~~[benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene]~~ are considered soil COCs ~~for M-14 Landfill~~ as they exceed both the NJDEP NRDCSRS and Maximum Background Concentrations (MBC) established for soils at the Main Post.

- ***Benzo(a)anthracene*** is considered a COC because it was detected greater than the MBC of 0.65 mg/kg in all seven soil samples where benzo(*a*)anthracene exceeded NJDEP NRDCSRS.
- ~~***Benzo(a)anthracene*** is considered a COC because it was detected at concentrations greater than the MBC of 0.65 mg/kg in six of the six samples where benzo(a)anthracene exceeded NJDEP NRDCSRS (2 mg/kg).~~
- ~~***Benzo(a)pyrene*** is considered a COC because it was detected at concentrations greater than the MBC of 0.6 mg/kg in 10 of the 21 samples where benzo(a)pyrene exceeded NJDEP NRDCSRS (0.2 mg/kg).~~
- ***Benzo(a)*pyrene** is considered a COC because it was detected greater than the MBC of 0.6 mg/kg in 16 of the 50 soil samples where benzo(a)pyrene exceeded NJDEP NRDCSRS.
- ~~***Benzo(b)fluoranthene*** is considered a COC because it was detected at concentrations exceeding the MBC of 0.9 mg/kg in six samples where benzo(b)fluoranthene exceeded NJDEP NRDCSRS.~~
- ***Benzo(b)fluoranthene*** is considered a COC because it was detected greater than the MBC of 0.9 mg/kg in all nine soil samples (eight borings) where benzo(b)fluoranthene exceeded NJDEP NRDCSRS.

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font: Bold, Italic
Formatted: Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Formatted: Font: Bold
Formatted: Font: Bold, Italic
Formatted: Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Formatted: Font color: Auto
Formatted: Font: Not Italic, Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto

- ~~***Benzo(k)fluoranthene*** was detected in only one sample at a concentration greater than the NJDEP NRDCSRS and the MBC of 0.43 mg/kg. Due to the infrequency and magnitude of exceedance in soil samples, benzo(k)fluoranthene is not considered to be a COC.~~
- ***Dibenz(a,h)anthracene*** is considered a COC because it was detected greater than the MBC of 0.079 mg/kg in all eight soil samples where dibenz(a,h)anthracene exceeded NJDEP NRDCSRS.
- ~~***Dibenz(a,h)anthracene*** is considered a COC because it was detected at concentrations greater than the MBC of 0.079 mg/kg in seven samples where dibenz(a,h)anthracene exceeded NJDEP NRDCSRS.~~
- ***Indeno(1,2,3-cd)pyrene*** is considered a COC because it was detected at concentrations greater than the MBC of 0.46 mg/kg in three soil samples where indeno(1,2,3-cd)pyrene exceeded NJDEP NRDCSRS.

Formatted: Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Font: Not Bold, Not Italic, Font color: Auto
Formatted: Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"
Formatted: Indent: Left: 0.5", No bullets or numbering
Formatted: Indent: Left: 0"

5.1.2 Quality Assurance/Quality Control - Soil

Quality assurance/quality control (QA/QC) samples including samples duplicates, field blanks and trip blanks, were collected in accordance with the version of the NJDEP *Field Sampling Procedures Manual* in effect at the time sampling was conducted.

5.2 Ground Water Sampling Results

Analytical results from each of the ~~seven~~ thirteen monitoring wells at the M-124 Landfill for are summarized in Tables 5-1 through 5-13~~7~~. Ground water summary tables include detected analytical results and are divided by monitoring well numbers and sampling date. The characterization of ground water quality at the M-124 Landfill consists of quarterly ground water sampling events conducted from 2nd Quarter 2001 – 3rd Quarter 2010. Ground water analytical results are compared to NJDEP GWQS and are presented in three different tabs reflecting changes to NJDEP GWQS. The first set of data is compared against the January 7, 1993 criteria; the next is when a criterion change occurred on November 7, 2005, followed by another criterion change on July 27, 2007.

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto

The results in the ground water summary tables include analyte detections including exceedances of NJDEP GWQS, which are bolded and shaded. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs and SVOCs.

- Duplicate samples are included after the respective primary sample.
- Low flow sampling method results are identified as "LF."
- A "J" value is a concentration exceeding the method detection limit (MDL) but less than the reporting limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results (ER) are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated blank sample.
- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP Case Manager approval.
-

Formatted: Bullet1

If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

5.2.1 VOCs

Throughout the current reporting period, no VOCs were detected in ground water samples at concentrations exceeding NJDEP GWQS.

5.2.2 VO TICs

Throughout the current reporting period, no VO~~C~~ TIC concentrations were detected in ground water samples in excess of the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations.

Formatted: Font color: Auto

5.2.3 SVOCs

Throughout the current reporting period, no SVOCs were detected in ground water samples at concentrations exceeding NJDEP GWQS.

Formatted: Font color: Custom Color(RGB(0,0,204))

5.2.4 SVO TICs

Concentrations of SVO TICs exceeded NJDEP GWQS once during the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010) in 2nd Quarter 2003. A total SVO TIC concentration of 611 µg/L exceeded the NJDEP GWQS of 500 µg/L in M-12MW16. Throughout the remainder of the current reporting period, no SVO TIC concentrations were detected in ground water samples in excess of the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations.

Formatted: Font color: Auto

Formatted: Font color: Custom Color(RGB(0,0,204))

5.2.5 Pesticides and PCBs

Throughout the current reporting period, no pesticides or PCBs were detected at concentrations exceeding NJDEP GWQS.

5.2.6 Metals

During the last eight quarterly sampling events conducted from October 2008 to August 2010, ~~eight~~ six metals were detected in ground water samples at concentrations exceeding NJDEP GWQS:~~.~~

Antimony was detected at concentrations exceeding the NJDEP GWQS of 6 µg/L in five of the eight rounds of sampling. Concentrations ranged from 6.20 µg/L (sampling round #41) in monitoring well M-12MW21 to 21.0 µg/L (sampling round #40) in monitoring well M-12MW25.

Arsenic was detected at concentrations exceeding the NJDEP GWQS of 3 µg/L in all eight rounds of sampling. Concentrations ranged from 3.67 µg/L (low-flow #4 - sampling round #46) in monitoring well M-12MW23 to 136 µg/L (low-flow #3 – sampling round #45) in monitoring well M-12MW22.

Beryllium was detected at concentrations exceeding the NJDEP GWQS of 1 µg/L in six of the eight rounds of sampling. Concentrations ranged from 1.03 µg/L (sampling round #49) in monitoring well M-12MW16 to 2.05 µg/L (low-flow #4 - sampling round #46) in monitoring well M-12MW23.

Cadmium was detected at concentrations exceeding the NJDEP GWQS of 4 µg/L in one of the eight rounds of sampling. The concentration of cadmium was 4.34 µg/L (sampling round #42) in monitoring well M-12MW22.

Lead was detected at concentrations exceeding the NJDEP GWQS of 5 µg/L in five of the eight rounds of sampling. Concentrations ranged from 5.02 µg/L (sampling round #42) in monitoring well M-12MW22 to 18 µg/L (sampling round #40) in monitoring well M-12MW19.

Thallium was detected at concentrations exceeding the NJDEP GWQS of 2 µg/L in one of the eight rounds of sampling. The concentration of thallium was 2.15 µg/L (sampling round #39) in monitoring well M-12MW25.

~~***Antimony*** was detected at concentrations exceeding the NJDEP GWQS of 6.0 µg/L at six monitoring wells. Concentrations ranged from 6.5 µg/L (Low-flow #4 – round 55) in M-14MW21 to 23.1 µg/L (sampling round 38) in M-14MW24.~~

~~***Arsenic*** was detected at concentrations exceeding the NJDEP GWQS of 3.0 µg/L at seven monitoring wells. Concentrations ranged from 3.27 µg/L (sampling round 49) in M-14MW24 to 95.6 µg/L (sampling round 38) in M-14MW24.~~

~~***Beryllium*** was detected at a concentration exceeding the NJDEP GWQS of 1.0 µg/L in only one round of sampling (1.09 µg/L in sampling round 38) at one monitoring well (M-14MW23).~~

Formatted: Font color: Auto

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Auto

~~***Cadmium*** was detected at concentrations exceeding the NJDEP GWQS of 4.0 µg/L at two monitoring wells. Concentrations ranged from 5.82 µg/L (sampling round 42) in M-14MW23 to 145 µg/L (sampling round 56) in M-14MW22.~~

~~***Lead*** was detected at concentrations exceeding the NJDEP GWQS of 5.0 µg/L at four monitoring wells. Concentrations ranged from 5.41 µg/L (sampling round 39) in M-14MW24 to 9.96 µg/L (sampling round 50) in M-14MW22.~~

~~***Nickel*** was detected at a concentration exceeding the NJDEP GWQS of 100.0 µg/L in only one round of sampling conducted at one monitoring well. Nickel was detected at 205 µg/L (sampling round 56) in M-14MW22.~~

~~***Selenium*** was detected at concentrations exceeding the NJDEP GWQS of 40.0 µg/L in five rounds of sampling conducted at six monitoring wells. Concentrations ranged from 41.2 µg/L (sampling round 55) in M-14MW19 to 119 µg/L (sampling round 44) in M-14MW24.~~

~~***Thallium*** was detected at a concentration exceeding the NJDEP GWQS of 2.0 µg/L in one round of sampling at one monitoring well. Thallium was detected at 4.02 µg/L (sampling round 37) in M-14MW24.~~

5.2.7 Ground Water Summary

Figure 5-1 (Ground Water Contaminants of Concern Distribution Map) depicts all analytes that exceeded NJDEP GWQS for the eight most recent ground water sampling events. Only metals (antimony, arsenic, beryllium, cadmium, lead, ~~nickel,~~selenium, and thallium) were detected at concentrations exceeding NJDEP GWQS.

5.2.8 Ground Water – QA/QC

Quality assurance and quality control (QA/QC) samples were collected in accordance with the current version of the NJDEP's *Field Sampling Procedures Manual* in effect at the time sampling was conducted. All ground water samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method. Ground water QA/QC sample results are provided in the relevant lab packages in Appendix F.

M-124 Ground Water Data Validation

Tetra Tech EM Inc. (Tetra Tech) conducted data validation for the M-124 Landfill. Data was evaluated for the following criteria: data completeness; sample preservation, receipt, and holding times; gas chromatography and mass spectrometry (GC/MS) instrument performance checks; initial and continuing calibration; calibration verification; field, trip, and laboratory blanks; inductively coupled plasma – interference check sample (ICP-ICS); system monitoring

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Auto

compounds (surrogates); matrix spike/matrix spike duplicates (MS/MSDs); laboratory duplicate sample analysis; ICP serial dilution; field duplicates; laboratory control samples (LCSs); dilution; re-extraction and reanalysis; internal standards; target analyte identification; analyte quantitation; and reported detection limits. Data validation packages are provided in their respective appendices.

- Tetra Tech conducted data validation of the analytical results for eleven groundwater samples, one field duplicate, and one field blanks~~six groundwater samples, one field duplicate, one rinsate blank, and one trip blank~~ that were collected at the M-124 Landfill on November 18~~20~~, 2009 as part of the fourth quarter 2009 long-term monitoring project. Tetra Tech concluded the overall quality of this data package was acceptable. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for eleven groundwater samples, three field duplicates, and three field blanks~~six groundwater samples, two field duplicates, two field blanks, and two trip blanks~~ that were collected at the M-~~14-~~12 Landfill on June 2, 3, and 4, 2010~~June 4 and 7, 2010~~ as part of the second quarter 2010 long-term monitoring project. Tetra Tech concluded the overall quality of this data package was acceptable. All data can be used as qualified.

5.3 Surface Water Sampling Results

Quarterly surface water samples were collected at 15 locations during the current sampling period (Surface Water Sampling Rounds 50 through 56). The nearest upstream sampling point from the M-124 Landfill is SS-19. The nearest downstream sampling point from the M-124 Landfill is SS-09. Results for surface water samples from inception of LTM are summarized in Appendix G. Surface water summary tables include detected analytical results for the surface water sample locations and are divided by surface water sample numbers and sampling dates.

From March 2009 through September 2010, seven quarterly surface water sampling events were conducted. Surface water sampling results from the base-wide sampling program were compared to NJDEP Freshwater SWQS. Concentrations of VOCs, metals, and wet chemistry exceeding NJDEP Freshwater SWQS are summarized in Appendix G. Surface water contaminant distributions with time are presented in Appendix G. The results of the current surface water sampling events are discussed below.

The results in the surface water summary tables include analyte detections as well as exceedances of the NJDEP Freshwater SWQS, which are bolded and shaded. VOCs, metals, and wet chemistry parameters are presented as required to summarize results for detected parameters. Detections are presented in the surface water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs.
- Duplicate samples are included after the respective primary sample.
- A "J" value is a concentration exceeding the MDL but less than the RL for VOCs.
- Estimated Results "ER" are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated field blank sample.
- If a particular sample suite or analyte was not detected in a surface water sample location, the suite/analyte is not presented in the summary table.

Formatted: Font color: Auto

5.3.1 VOCs

During one of the eight surface water sampling events conducted during the current reporting period at upstream surface water sampling point SS-19, ~~four VOCs (~~bromodichloromethane was ~~, PCE, TCE, and vinyl chloride) were~~ detected at a concentration of 1.03 µg/L, ~~s~~ exceeding the NJDEP SWQS of 0.55 µg/L. Bromodichloromethane concentrations were ND for the other seven surface water sampling events at SS-19.

Appendix G includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.3.2 TICs

During the current reporting period, VO TICs were periodically detected at seven of the 15 surface water sampling locations. For comparison purposes, concentrations were compared to the GWQS as there are no SWQS for VO TICs.

Surface water TICs did not exceed either the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations during this reporting period. Appendix G includes a summary of the analytical results for the surface water TICs during this reporting period.

5.3.3 Metals

Arsenic and ~~Antimony, arsenic,~~ lead~~, and mercury~~ were detected at concentrations that exceeded their respective NJDEP SWQS at the upstream (SS-19) and downstream (SS-9) surface water sampling points.~~.~~

Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

5.3.4 Pesticides and PCBs

Pesticides and PCBs were not analyzed in surface water samples collected during the current reporting period.

5.3.5 Surface Water Summary

During one of the eight ~~-~~surface water sampling events conducted during the current reporting period, only one VOC (~~four VOCs (~~bromodichloromethane) ~~, PCE, TCE, and vinyl chloride)~~ w~~ere~~as detected at concentrations exceeding NJDEP SWQS at upstream surface water sampling point SS-19. ~~Antimony, arsenic,~~ Arsenic and lead were detected at concentrations that exceeded their respective NJDEP SWQS at both the upstream (SS-19) and downstream (SS-9) surface water sampling points.
~~lead, and mercury were detected at concentrations exceeding NJDEP SWQS.~~

~~During the current reporting period, surface water samples collected at the nearest upstream sampling point (SS-19) from the M-14 Landfill exceeded NJDEP SWQS for arsenic, bromodichloromethane, and lead. Surface water samples collected at the nearest downstream sampling point (SS-09) from the M-14 Landfill exceeded NJDEP SWQS for arsenic and lead.~~

5.3.6 Surface Water – QA/QC

To verify the reliability of surface water analytical results, Brinkerhoff reviewed the holding times for each sample and the results of the analyses of nine method blanks, seven trip blanks, seven field blanks, and seven field duplicate samples for the surface water samples. The discussion below is based upon QA/QC for the VOC surface water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each set of surface water samples for each surface water sampling event. These method blanks consisted of laboratory-deionized water that is processed identically to the samples and analyzed with the sample batch. A total of nine VOC method blanks were analyzed with the base wide surface water samples.

No COCs were detected in the method blank samples.

Trip Blanks

Seven trip blanks were included as part of the base-wide surface water sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))

deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the surface water samples.

Methylene chloride was detected in one of the seven trip blanks at a concentration of 15.28 µg/L, which exceeds the NJDEP Freshwater SWQS of 2.5 µg/L, but is in compliance with the saline SWQS of 310 µg/L. Methylene chloride is a common laboratory contaminant.

Field Blanks

During each day's sampling activities, one field blank sample was collected to document equipment decontamination procedures. A total of seven field blanks were collected during the base-wide surface water sampling program. The field blanks were collected by pouring deionized water supplied by the laboratory over the equipment used for daily sampling activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the surface water samples.

Formatted: Font color: Custom Color(RGB(0,0,204))

Methylene chloride was detected in one of the seven trip blanks at a concentration of 2.18 µg/L, which is in compliance with the NJDEP Freshwater SWQS of 2.5 µg/L. Methylene chloride is a common laboratory contaminant.

Formatted: Font color: Auto

Duplicate Samples

Seven field duplicate samples were also collected during the base-wide surface water sampling events to verify the consistency of the entire sampling and analytical procedures. The results for the duplicate samples were similar to those collected for the original samples. The RPDs for the duplicate sample analyses ranged from 0 to 21.51 percent; however, the average RPD for the seven duplicates was 13.65 percent. Based upon average RPDs, the QA/QC sampling results indicate a high level of precision.

Surface Water Data Validation

Tetra Tech conducted data validation for the Main Post Surface Water Sampling. Data was evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, GC/MS instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, ICP-ICS, system monitoring compounds (surrogates), MS/MSDs, laboratory duplicate sample analysis, ICP serial dilution, field duplicates, LCSs, dilution, reextraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits. Data validation packages are provided in Appendix G.

- Tetra Tech conducted data validation of the analytical results for fifteen surface water samples, one field duplicate, one field blank, and one trip blank that were collected at

from stream sampling points (abbreviated to "SS" in the sample designations) on December 7, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified due to minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. Metals results were qualified for calibration verification irregularities, blank contamination, a result greater than the linear range of the instrument, and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one trip blank, and one field blank, that were collected on June 22, 2010 as part of the 2nd Quarter 2010 LTM project. Tetra Tech concluded that the overall quality of the data was acceptable. No analytical results were rejected. All data can be used as qualified.

6.0 BACKGROUND METALS EVALUATION

Historically, ground water samples from monitoring wells throughout Fort Monmouth's Main Post and the Charles Wood Area have periodically displayed concentrations of metals that exceed NJDEP GWQS. Some of the metals have been retained as COCs while characterization has continued. However, it has long been believed that the metal detections represent materials derived from the native soil as a background condition in the local region.

Brinkerhoff Environmental Services (2011) noted the likelihood that metal results reflected the presence of high turbidity in samples (see Appendix H). In addition, the analysis of glauconitic clay (see Appendix H) indicates that the clay contains a metal fingerprint that mirrors that found in turbid ground water samples, suggesting the fines from the native clays are the source of the turbidity and that the metals are derived from acid extraction of the metals on those fines when subjected to the preservatives added to the sample vials.

The Army has conducted additional analysis of available data and concludes that the metals heretofore designated as COCs in ground water are, in fact, native materials associated with clay fines in the samples. The following describes the approach taken and the conclusions drawn from the results of the analyses.

6.1 Evaluation Approach

In the past, each site at Fort Monmouth has been evaluated on its own merits with respect to COCs and risk. However, it has become very clear that the apparent metals issue is ubiquitous and would benefit from a base-wide analysis. Pursuant to that, a review was made of all historical groundwater sampling data to help put metal results in perspective. In the Brinkerhoff background analysis (2011), it was concluded that there were no sources for any of the metals observed in ground water, with the possible exception of lead. Because there were potential sources of lead present at Fort Monmouth (but not specifically associated with any individual site), Brinkerhoff chose not to rule out the possibility that some of the metals found in ground water could be the direct result of a release. At the same time, Brinkerhoff found a direct correlation between arsenic concentrations and lead concentrations, despite there being no potential source of arsenic releases. The obvious implication of that finding is that lead, as well as arsenic, arises from its presence in native soil. As a consequence, the Army has focused its analysis primarily on lead.

The review focused on the following areas:

- Nature of apparent sources
- Relationship of metals levels to turbidity
- Extreme variability in field duplicate results
- History of atypical spikes

6.1.1 Nature of Apparent Sources

A review of monitoring data over the life of the environmental restoration program at Fort Monmouth reveals that virtually every monitoring well at one time or another has had a metal concentration that has exceeded NJDEP GWQS. Given the diverse nature of activities and the location of the monitoring wells, this suggests a common factor across sites other than the activities that might have resulted in releases. Specific to lead contamination, sites with heating oil tanks and lime pits are unlikely sources of a release. Not only is lead not present as an additive in heating oil, but the characteristics of the lime pit should reduce the solubility of lead, not increase it. Lead is mobilized by acidity, not by basic conditions.

When the review is expanded to all metals, there is a consistent pattern of observations despite the nature of the Army's activities as seen in Table 6-1. Moreover, the metals observed (antimony – Sb; arsenic – As; beryllium – Be, cadmium – Cd, chromium – Cr; lead – Pb; and nickel – Ni) are all present in glauconitic clay. Metal observations in ground water are consistent, despite the disparate nature of the Army's activities at the sites being monitored.

Formatted: Font color: Custom Color(RGB(0,0,204))

Table 6-1
Metal Observations in Ground Water Are Consistent, Despite the Disparate Nature of the Army's Activities -At the Sites Being Monitored

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
FTMM-14, M-14 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-03, Landfill M-3	Landfill	Main Base, North Central	VOC	Sb, As, Cd, Pb
Building 750	Heating Oil USTs	Main Base. South Central		Sb, As, Be, Cd, Cr, Pb, Ni
FTMM-18, 54, 55, 62	Landfill, USTs, Fuel area	Main Base, North Central	Benzene	Sb, As, Be, Cd, Pb
FTMM-25, Landfill CW-3A	Landfill	Charles Wood, South		Sb, As, Be, Cd, Cr, Pb
FTMM-28, Pesticide Spill Location	Pesticide Spill, USTs Fuel Area	Charles Wood, Central		As, Pb, Cd, Sb, Sl, Th
FTMM-04, Landfill M-4	Landfill	Main Base, West Central		Sb, As, Be, Cd, Pb, Th
FTMM-12, M-12 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-66, Building	Heating Oil	Main Base,	Methyl	Sb, As, Cd, Pb

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
866	AST	South Central	Napthalene, Benzene, BEHP	
FTMM-58, Building 2567	Active Gas Station	Charles Wood, East Central	Tert Butyl Alcohol	Sb, As, Pb
FTMM-56, Buildings 80-166	Heating Oil UST	Main Base, East	Chlordane, DDD, DDE	Sb, As, Be, Cd, Pb, Th
FTMM-22, Building CW-1	Lime Pit	Charles Wood, West	TCE	Sb, As, Pb
FTMM-57, Building 108	Heating Oil UST	Main Base, East		Sb, AS, Pb

Formatted: Font color: Custom Color(RGB(0,0,204))

6.1.2 Relationship of Metal Levels to Turbidity

Brinkerhoff Environmental Services' *Report on Background Metals* (2011) notes in Section 4.2 that there has been a historic problem with turbid samples and the subsequent dissolution of metals from native soil by the nitric acid preservative used on samples intended for metals analysis. In a background study of the glauconite-rich soil at Fort Monmouth, researchers noted concentrations of 16 mg/kg lead (March 9, 2011 letter from U.S. Army to Larry Quinn). Turbidity is exacerbated by purge techniques in formations with fine soil particles, but can also be a problem with low-flow sampling as noted in Tetra Tech's January 2010 Data Validation Report in which some field duplicates had RPDs for metals that exceeded QC criteria (e.g., 80MW03 on 2/24/2010).

Turbidity data have not been reported for most historic samples. However, turbidity has been measured since implementation of low-flow sampling techniques in 2010. In general, samples should have turbidity < 5 units for a sample to yield results representative of dissolved metals. The data presented in Table 6-2 summarize turbidity levels for samples taken from various sites at Fort Monmouth in 2010. Clearly, turbidity remains a problem, despite the use of low-flow sampling. Occurrence of turbidity in excess of 5 NTU in 2010 samples have continued despite the use of low-flow sampling techniques. Turbidity data for FTMM-28 in the second quarter sampling of 2010 were as follows: MW-01 – 4.48 NTU; MW02 – 38 NTU; MW-03 – 6.14 NTU; and MW-34 – 10.2 NTU. The turbidity data for FTMM-28 for the third quarter of 2010 were as follows: MW-01 – 9.36 NTU; MW02 – 18.3 NTU; MW-03 – 4.12 NTU; and MW-34 – 9.81 NTU.

Formatted: Font color: Custom Color(RGB(0,0,204))

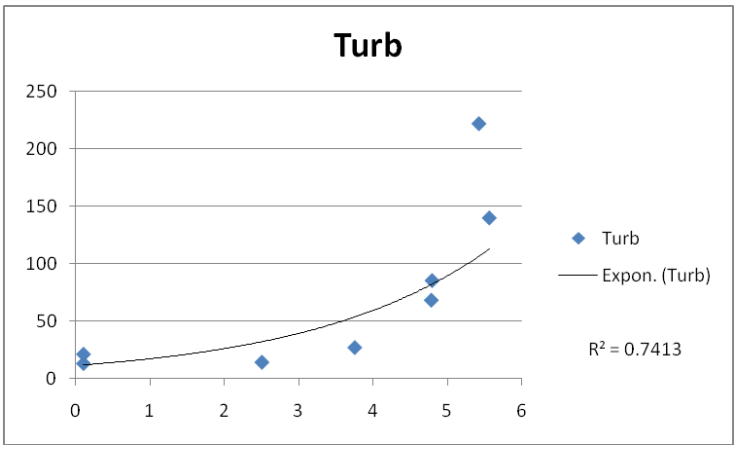
Table 6-2
Occurrence of Turbidity In Excess of 5 JTU in 2010 Samples Have Continued, Despite Use of Low Flow Sampling Techniques

Site	Turbidity (NTU) **Bold XX** – Value is in excess of 5 NTU										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (Q2)	**9.16**	**10.3**	4.16	**37.4**							
FTMM-03 (Q1)				0.28	**15.6**	4.64	**7.63**	4.83	**12.4**	**10.8**	2.28
FTMM-03 (Q2)				3.61	**11.7**	**10.3**	**6.02**	**11.5**	**7.54**	2.13	1.82
FTMM-18/54/55/62 (Q2)	2.14	**16.8**	1.67	**11.3**		**6.17**	**34.5**	**13.3**			
FTMM-04 (Q1)							3.65	**36.6**	**7.68**	1.43	
FTMM-04 (Q2)							2.81	**24.3**	**6.17**	2.7	
FTMM-66 (Q2, RW wells)	**14.4**	**222**	13.3	**140**	**85.5**	**68.4**	**21.4**	**27.2**			
FTMM-58 (Q1)	**38.1**	**11.5**	**8.67**	**22**	**9.4**	**21.6**	**6.88**				
FTMM-58 (Q2)	0.58	**6.17**	**10.2**	**5.54**	**35.7**	**16.8**	**8.17**				
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12	3.06	**5.65**	1.2	0.75	0.33	4.34	2.05	**5.61**	3.36	**5.22**	**9.72**

When the turbidity is high, there is a direct correlation between turbidity and lead concentrations as is evident from the data from Site FTMM-66 samples collected in May 2010 (Figure 6-1).

Formatted: Font color: Custom Color(RGB(0,0,204))

Figure 6-1
There is a Direct Correlation Between Turbidity and Lead Concentrations at FTMM-66 Using Low Flow Sampling Techniques



As one would expect, the introduction of low-flow sampling techniques has reduced metal concentrations reported in ground water samples at Fort Monmouth. A comparison of lead concentrations prior to and after implementation of the low-flow techniques is provided in Table 6-3. As is evident, lead concentrations decreased when low flow sampling was implemented. However, as presented in Table 6-2, turbidity issues are still present with low flow sampling and can still cause an apparent elevation in lead levels.

Formatted: Font color: Custom Color(RGB(0,0,204))

Table 6-3
There Has Been a Clear Reduction in Lead with Use of Low Flow Sampling Techniques, Despite Continued Presence of High Turbidity

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (10/08 to 8/10)	16./6.9	9/4.2	5.4/3.7	8.6/4.7		7.6/6.0					
FTMM-03 (12/08 to 9/10)				ND/1.9	ND/ 4.4	ND/3.7	48/3.3	ND/6.4	ND/3.3	ND/6.2	ND/3.3
Bldg 750 (10/08 to 8/10)	0.9/ND	61/6.5	6.7/ND	1.9/ND							
FTMM-18/54/55/62 283 wells (10/08 to 9/10)					8.1/ND	3.9/ND					
FTMM-18/54/55/62 290 and 296 wells (10/08 to 9/10)	10.7/ND	5.6/1.2	15/3.8*	4.5/4.5	5.7/7.2	5.2/4.5	5/ND	9.2/6			
FTMM-25 (10/08 to 7/10)	5.9/ND	7.2/3.4	8.2/2.4	9/3.5							
FTMM-04							3.5/ND	12/ND	4/ND	6.7/ND	

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
(10/8 to 7/10)											
FTMM-66 (12/8 to 8/10)	5.1/3.7	2.9/1.5	5.2/6.1	ND/ND	28/2.8						
FTMM-58 (11/08 to 9/10)	ND/ND	3.4/ND	1.5/ND	2.2/5.5	30/9.2	1.9/ND					
FTMM-56 (2/09 to 8/10)	3.8/4.7	2.9/ND	5.2/ND	ND/2.8	19/3.6						
FTMM-56 Well 166 (2/09 to 8/10)	7.3/3.4										
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12 (10/8 to 9/10)	10/2.6	4.4/3.2	5.7/5.3	9.8/ND	4.1/4.9	2.9/ND	7.7/6.6	2.9/4.1	4.7/ND	2.1/ND	5.6/2.8
FTMM-12 14MW wells (10/8 to 9/10)				3.7/3.7	1.9/ND	ND/ND	6.2/9.2	1.3/3.6	5.4/ND		

- Average does not include the 1060 value reported in 1/2010 that was an outlier

6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples

In accordance with standard quality control/quality assurance protocol, field duplicate samples were collected throughout the performance of monitoring work at Fort Monmouth. Pursuant to the Quality Assurance Project Plan for Fort Monmouth, whenever samples are found to have a

relative percent difference (RPD) of greater than 25% for metals, the data quality is suspect. An examination of the RPD values for ground water samples at Fort Monmouth reveals that a significant number of the duplicates collected from wells across the installation have RPD values well in excess of 25%.

Table 6-4
A Significant Percentage of the Field Duplicates Collected at Fort Monmouth Yielded RPD for Lead in Excess of the Quality Control/Quality Assurance Threshold Value of 25%

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-57	MW01	11/2000	8.14	15.6	63
		5/2001	4.2	5.33	24
		10/2008	30.8	20.9	38
	MW04	5/2000	ND	67.2	194
		9/2001	2.45	3.65	39
		12/2001	5.03	5.18	2.9
		2/2009	1.71	9.74	140
		6/2009	25.1	22.7	10
		8/2009	5.26	4.04	26
		11/2009	2.98	3.55	17
FTMM-22	MW26	8/1998	ND	149	197
		8/1999	ND	2.89	97
		2/2001	1.47	2.06	33
	MW31	5/2001	10.7	2.65	52
		11/2001	18.3	1.91	32
	MW38	11/2002	6.11	ND	144
	MW281	3/1999	6.22	4.98	22
		5/2000	33.1	ND	188
		11/2001	ND	2.05	69
	MW282	6/1998	5.5	3.9	169
		8/2000	66.6	ND	118
FTMM-03	MW04	6/2010	ND	3.68	85
FTMM-18/54/55/62	290MW01	9/2010	2.48	ND	85
	296MW01	8/2000	3.69	4.43	18
		11/2000	ND	63.3	194
		5/2001	4.07	6.89	51
		3/2009	7.06	5.9	18
		5/2009	ND	9.32	161
	296MW06	8/2001	17	1.34	171
	296MW07	2/2001	3.15	2.76	13

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-25	MW01	8/1999	ND	4.16	122
		11/1999	3.82	3.55	7
		10/4/2000	ND	2.12	72
		10/16/2000	ND	231	198
		5/2002	6.54	1.93	109
		8/2003	3.82	ND	117
	MW02	4/2001	1.89	1.6	17
	MW03	1/1998	16	ND	176
		4/2003	2.65	2.18	19
		10/2005	ND	5.56	139
		7/2009	9.51	ND	162
		1/2010	ND	4.86	132
	MW04	4/2010	3.14	2.82	11
		7/2010	2.53	5.46	73
FTMM-12	~~14~~MW19	6/2009	6.79	3.97	52
		9/2009	4.72	ND	130
		11/2009	3.11	ND	103
FTMM-66	80MW01	11/2001	19.7	3.08	146
	166MW01	3/2000	4.21	2.93	36
		10/2000	16.4	36.5	76
		4/2001	31	6.44	131
		8/2001	15.9	15.2	5

The presence of turbidity is the most common cause of poor RPD performance when metals are the analyte. Simply put, suspended solids that cause turbidity in water samples are heterogeneous by nature and when the sample is split, there is no way to divide them evenly so that both samples obtain the same amount of solids, let alone an evenly divided sampling of the different solid particle types that may be present. A single particle of mineral origin can have sufficient metal content to dramatically affect the RPD.

6.1.4 Occurrence of Atypical Spikes

Metals generally move slowly in ground water, both because of the slow velocity of the water itself and because of interactions with the soil that retard their movement. As such, time frames are sufficient for dispersion and diffusion to give rise to classic Gaussian plumes that display first order concentration gradients. When samples collected in sequential quarters differ in concentration by more than an order of magnitude, it suggests that at least one of the two values does not represent dissolved metal content and is more likely to be the result of acid extraction from suspended solids in the sample. Atypical spikes noted in historic monitoring results are presented in Table 6-5.

Table 6-5
Historical Data from Fort Monmouth Show Rapid Increases and Decreases in Lead Concentrations That Cannot Be Attributed to Dissolved Metals

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
FTMM-57	MW01	3-9/1999	90	125	11.2
		5-10/2002	6.91	28.3	4.88
		8/2008 – 6/2009	2.45	30.6 and 16.1	2.9
	MW02	7-8/1993		137	ND
		6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW03	6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW04	4-11/1997	24	122	35
		5-11/1998	34.4	99 and 163	7.18
		8-11/2000	13.2	143	1.26
FTMM-22	MW38	11/2000-2/2001		90.8	ND
	MW40	9/2002-2/2003	ND	13.2	ND
Bldg 750	MW01	4/1993-11/1994	ND	23	3.2
		9/1997-3/1998	3.3	12	5
		5-12/1998	ND	14	5.2
		5-11/2000	ND	31.2	ND
		2-8/2004	ND	20.5	ND
	MW02	11/1996-2/1997		23.8	ND
		5-12/1998	ND	69	ND
		12/1998-7/1999	ND	111 and 612	7.84
		5/2000-2/2001	15.7	114 and 68.4	ND
		5-11/2002	5.41	44.8	9.25
		11/2004-4/2005	7	59.2	ND

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
		8/2008-3/2009	ND	232	2.03
	MW03	12/1998-6/1999	ND	17.3	ND
		10/1999-5/2000	ND	19.4	ND
		1-7/2005	ND	22.7	ND
	MW04	11/8-30/1994		201	4.7
		2-8/2001	ND	66.7	2.92
		1-7/2005	ND	33.4	ND
FTMM-18/54/55/62	296MW01	3-8/2000	ND	20.5	4.06
	296MW02	11/1997-5/1998	30	836	16.5
		3-8/2000	6.3	28.3	7.74
		5-12/2002	1.5	177	ND
		2-8/2005	17.3	52	ND
		5-11/2009	ND	36.1	2.73
		11/2009-5/2010	2.73	1060	ND
	296MW04	12/2001-5/2002	5.54	31.4	9.93
	296MW06	5-8/2001	2.18	17	1.34
		11/2003-5/2004	ND	31.8	ND
	296MW07	8/2001-3/2002	5.69	18.2	3.36
		11/2003-5/2004	ND	17.9	ND
		7/2004-2/2005	ND	14.5	ND
	296MW08	5-12/2001	13.1	80.6	16
FTMM-25	MW01	1-3/1998	ND	16	ND
	MW02	10/2001-5/2002	2.37	34.1	1.29
	MW03	8/1999-2/2000	ND	1010	ND
		5-8/2000	2.35	26.5	1.7
	MW04	5-8/2000	ND	104	ND
		10/2000-4/2001	ND	32.4	ND

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
		1-7/2002	1.73	23	7.4
		10/2003-5/2004	6.06	86.6	ND
FTMM-04	MW08	7/2009-1/2010	ND	31.1	ND
FTMM-12	14MW22	10/2008-6/2009	ND	9.96	ND
		6-9/2010	ND	9.23	
FTMM-66	80MW01	6-11/1998	3.3	10.4	2.86
		3-8/2000	3.67	10.4	2.86
		2-8/2005	ND	18.3	6.5
	80MW04	2-8/2005	ND	19.4	ND
	80MW05	1-12/2002	13.4	47.2 and 70.1	4.31
		2-8/2009	ND	28.4	ND
	166MW01	8/1997-2/1998	1.6	15	ND
		6-11/1998	2.3	12.4	4.23
		3-8/2000	2.93	17.3	5.12
		3-9/2003	1.62	10.2	3.43
FTMM-58	MW02	4-1993-3/1994	ND	260	ND
		8/1997-3/1998	ND	20	8
FTMM-56	80MW05	2-8/2009	ND	28.4	ND
	166MW01	6-11/2009	ND	7.25	ND

6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern

The only consistent explanation for lead findings to date (and other metals as well) is that fine particles of glauconitic clay are suspended in many of the samples and yield metals when contacted with the acid preservative used for ground water samples. The applicability of each of these factors to individual sites at Fort Monmouth is summarized in Table 6-6.

Formatted: Font color: Custom Color(RGB(0,0,204))

Table 6-6
All Sites with Historic Lead Occurrences Have One or More Clear Markers Suggesting Turbidity is the Source of the Lead

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
FTMM-12, M-14 Landfill	ND-9.23 (9/9/2010)			60% (194)	2 (9.96)
FTMM-03, Landfill M-3	ND-8.37 (9/7/2010)	50% (Q1) 62.5% (Q2)	0.59	100% (85)	
Building 750 – Heating Oil UST	ND (8/18/2010)		0.13		18 (612)
FTMM-18, 54, 55, 62 Landfill, USTs, and Fuel Area	ND-8.89 (9/29/2010)	71.4%	0.17 (#283) 0.48 (#290/6)	62.5% (194)	14 (1060)
FTMM-25, Landfill CW-3A	ND-4 (7/26/2010)		0.34	71.4% (198)	7 (110)
FTMM-04, Landfill M-4	ND (7/21/2010)	50% (Q1) 50% (Q2)	0.15	50% (73)	1 (31.1)
FTMM-12, M-12 Landfill	ND-9.23 (9/9/2010)	36.3%	0.56 1 (#14MW)	100% (130)	
FTMM-66, Building 866, Heating Oil AST	ND-7.09 (8/5/2010)	100%	0.36	80% (146)	10 (70.1)
FTMM-58, Building 2567, Gas Station	ND (1/16/2004)	100% (Q1) 87.4% (Q2)	0.47		2 (260)
FTMM-56, Buildings 80-	ND-6.43 (8/31/2010)		0.41		2 (28.4)

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
166, Heating Oil UST					
FTMM-22, Building CW-1, Lime Pit	ND-2.45 (8/24/2010)			91% (197)	2 (90.8)
FTMM-57, Building 108, Heating Oil UST	ND-6.91 (8/19/2010)	75%	0.55	70% (197)	11 (163)

*Based on setting ND samples at 1 ug/kg

**If both duplicates were ND or if one was ND and the other <2 ug/L, the duplicate was not evaluated

Given the weight of evidence, the Army has concluded that metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs. This is further supported by the location of the Wenonah Mount Laurel aquifer, which is approximately 125 feet bgs - too deep to be affected by the presence of these metals near ground surface. In addition, the sensitive receptor survey (Appendix I) indicated no domestic or irrigation wells are close enough to be adversely impacted by COC migration.

7.0 RECEPTOR EVALUATION

7.1 Sensitive Receptor and Well Search

A visual and documentary search of sensitive populations was performed by the Army and their subcontractor to identify potentially sensitive populations within 200 feet of Fort Monmouth's boundaries. The identification of said populations is in accordance with NJDEP statutory requirements. The Receptor Evaluation Report, NJDEP Sensitive Receptor Survey Form, and Sensitive Receptor Survey figure are provided in Appendix I.

Although the identified populations are within 200 feet of Fort Monmouth's boundaries, all of the environmentally-impacted locations are an appreciable distance from the fence line and in all cases exceed the 200-foot buffer established by NJDEP. In addition, site-specific utility maps were reviewed to identify any preferential pathways which could affect site contamination plumes. These maps are provided in Appendix I.

In addition to the sensitive receptors, the Army has included all identified off-site wells within 2,000 feet of Fort Monmouth's perimeter. No production wells were identified within 2,000 feet of Fort Monmouth's boundaries. The majority of off-site wells are monitoring wells associated with various remedial activities. A ground water model has been developed for Fort Monmouth, with the overall ground water flow pattern for the Main Post being easterly with a localized northeasterly component. Fort Monmouth is bounded by surface water bodies to the east and northeast. Domestic and/or irrigation wells to the east or northeast of the Main Post would not be impacted by activities conducted on the Fort Monmouth property.

Surface water bodies interact with ground water at Fort Monmouth. The interaction takes place in three basic ways: streams gain water from inflow of ground water through the streambed, streams lose water to ground water by outflow through the streambed, or both, gaining in some reaches and losing in other reaches. When ground water discharges into a surface water body, the elevation of the ground water table in the vicinity of the surface water body must be higher than the elevation of the stream water surface. Conversely, for surface water to seep to ground water, the elevation of the water table in the vicinity of the stream must be lower than the elevation of the stream water surface. The surface water bodies at Fort Monmouth (Oceanport and Parkers Creeks) may be gaining or losing depending upon the tidal cycle. Throughout the entire tidal cycle however, net results are that ground water inflows into the creeks, albeit at low flow rates. Figures depicting the surface water features, wetland areas, and stream bank stabilization areas in the vicinity of the Site are included in Appendix I.

7.2 Vapor Intrusion (VI) Investigation

The Army evaluated the requirements for a VI investigation in accordance with the NJDEP's Vapor Intrusion (VI) Guidance and *Technical Requirements*. As detailed in the NJDEP VI Guidance, three-stage assessment criteria were utilized to determine the applicability of VI

regulations. Site-specific ground water data from the seven most recent quarterly ground water sampling events were compared to the NJDEP generic VI screening levels.

Concentrations of COCs in ground water do not exceed the generic ground water screening levels (GWSL) presented in the NJDEP VI Guidance within 100 feet (specific to chlorinated solvents) of nearby buildings. According to the decision flow chart for VI, no investigation is required for the M-124 Landfill.

7.3 Baseline Ecological Evaluation (BEE)

Shaw Environmental, Inc. was contracted by the Army to conduct a Baseline Ecological Evaluation (BEE) for Fort Monmouth's Main Post and Charles Wood Areas. Sampling of multiple media was conducted in 2010. The final BEE was submitted in May 2011 and will be updated once comments are resolved with NJDEP.

7.4 Public Notification

In accordance with the Public Notification requirements in the *Technical Requirements* at N.J.A.C. 7:26E-1.4, the Army submitted a request to the NJDEP Site Remediation Program (SRP) dated June 17, 2010 to conduct an *Alternative Public Notification Plan*. This request was approved by the NJDEP in correspondence dated June 24, 2010. Copies of said correspondence are provided in Appendix I.

The *Alternative Public Notification Plan* includes newspaper advertisements being placed in local and county newspapers through the Asbury Park Press and The Link, all public notification documents being sent to the Municipal Clerk for each municipality in which the contaminated site is located, and to the local designated health official. The FTMM also established a local document repository for all reports produced regarding the site remediation areas of concern (AOCs) at Fort Monmouth. The repository is located at the Monmouth County Library in Shrewsbury, New Jersey where all reports are available for public review. All of these reports are also available online at http://www.pica.army.mil/FtMonmouth.

The Fort conducted two Open Houses in January of 2008 and January of 2009, during which times figures and data regarding all of the Fort's site remediation AOCs were on display. Fort environmental personnel were available to answer questions from the public. The Fort will conduct a third Open House should the need arise.

The Fort also operates a Restoration Advisory Board (RAB) which holds quarterly public meetings held by RAB members who are public citizens, not elected officials, selected from the surrounding towns. They review and comment on technical documents and plans relating to ongoing environmental investigations and restoration activities at the Fort. Members serve as liaisons with the community and are available to meet with community members and groups. The meetings are open to the public and notification of all meetings is provided in local

newspapers as well as by mail to all interested parties. All environmental projects subject to the *Technical Requirements* are presented to the RAB via this public forum. Examples of the media release and Affidavit are provided in Appendix I.

8.0 REMEDIAL ACTION PROGRESS

8.1 Costs of Remediation Incurred to Date

The total costs to date for the implementation of the remedial actions performed at the M-124 Landfill are approximately $X2,XXX441,XXX000 (Refer to Appendix J). This includes the Preliminary Assessment (PA) phase, SI, Remedial Investigation/Feasibility Study, LTM, and reporting (including RIRs and RIRAs).

8.2 Ground Water Conclusions

During the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010), ground water sampling was conducted quarterly. For the last eight ground water sampling quarters (4th Quarter 2008 – 3rd Quarter 2010), only metals (antimony, arsenic, beryllium, cadmium, lead, and thalliumantimony, arsenic, beryllium, cadmium, lead, nickel, and thallium) exceeded NJDEP GWQS. Metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples as discussed in depth in Section 6.0. Therefore, metals are not considered COCs at the M-14-12 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration. Since no COCs exceed NJDEP GWQS in M-12 Landfill ground water monitoring wells, a Classification Exception Area is not proposed.

8.3 Surface Water Conclusions

During the current reporting period, surface water samples collected at the nearest upstream sampling point (SS-19) from the M-124 Landfill exceeded NJDEP SWQS for arsenic, bromodichloromethane, and lead. Surface water samples collected at the nearest downstream sampling point (SS-09) from the M-124 Landfill exceeded NJDEP SWQS for arsenic and lead. As discussed in depth in Section 6.0, metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in water samples. Thus, metals are not considered COCs at the M-124 Landfill.

Bromodichloromethane was detected during the June 2010 stream sampling event at stream sampling point SS-19. This is considered an isolated detection and is the first time bromodichloromethane has been detected at SS-09 since surface water sampling began at Husky Brook in 3rd Quarter 1996. Thus, bromodichloromethane is not considered a COC.

8.43 Soil Conclusions

SVOCs and metals were detected in M-124 Landfill surface soil samples at concentrations exceeding the NJDEP's NRDCSRS. Metals are naturally-occurring within Fort Monmouth soils, as detailed in Section 6.0 and Appendix H. VOCs, and pesticides, and PCBs were

Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Custom Color(RGB(0,0,204))
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto
Formatted: Font color: Auto

detected at concentrations in compliance with the NJDEP NRDCSRS. ~~–~~Given the inactive and undisturbed state of the landfill, the lack of groundwater use at or hydraulically downgradient of the M-12~~4~~ Landfill, and low COC concentrations in shallow surface soils, No Further Action is recommended for the near-surface soils at the M-12~~4~~ Landfill.

To address M-12~~4~~ Landfill near-surface soil samples that do not meet NJDEP soil remediation standards, the Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12~~4~~ Landfill.

~~for the NJDEP's review and approval.~~

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: Font color: Auto

Formatted: List Bullet, Space After: 12 pt

8.~~5~~4 Sediment Conclusions

With the exception of one anomalous duplicate sample detection of the PCB Arcolor 1254, no PCBs were detected in any of the 25 sediment samples collected from Husky Brook as detailed in Versar's October 2003 *RIR and Sediment Quality Evaluation for the M-14 Landfill*. Based on NJDEP's guidance criteria, PCBs are not impacting sediments in Husky Brook. In addition, no potential exists for long-term, adverse, benthic effects in Husky Brook associated with the M-12 and M-14 Landfills. NFA is warranted for Husky Brook sediments adjacent to the M-12 and M-14 Landfills.

8.~~6~~5 Recommendations

The following actions are planned:

- Prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12 Landfill.
- Continue quarterly ground water and surface water sampling until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP.
- ~~The Army will prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) which will include a final closure plan for the M-14 Landfill.~~
- ~~No further action is proposed for ground water at the M-14 Landfill. Since no COCs exceed NJDEP GWQS in site ground water monitoring wells, a Classification Exception Area is not required.~~
- ~~Discontinue the ground water sampling program at the M-14 Landfill since no COCs exceed NJDEP GWQS in site ground water monitoring wells.~~
- ~~No further action is proposed for Husky Brook surface water at the M-14 Landfill.~~

- ~~No further action is proposed for M-14 Landfill near-surface soils.~~
- ~~No further action is proposed for Husky Brook sediments at the M-14 Landfill.~~

~~8.5 Sampling Program~~

~~The following tables provide a summary of the recommended future ground water and surface water sampling program at the M-14 Landfill.~~

Formatted: Font color: Auto

~~MONITORING WELL~~	~~RECOMMENDED ANALYSIS~~	~~RECOMMENDED FUTURE SAMPLING~~	~~REASON~~
~~M-14MW18~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW19~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW20~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW21~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW22~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW23~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~
~~M-14MW24~~	~~Discontinue~~	~~Discontinue~~	~~No COCs exceed NJDEP GWQS.~~

~~STREAM SITE~~	~~RECOMMENDED ANALYSIS~~	~~RECOMMENDED FUTURE SAMPLING~~	~~REASON~~
~~SS-19~~	~~Discontinue~~	~~Discontinue~~	~~Upstream of M-14 Landfill. No COCs exceed NJDEP SWQS.~~
~~SS-9~~	~~Discontinue~~	~~Discontinue~~	~~Downstream of M-14 Landfill. No COCs exceed NJDEP SWQS.~~

8.7~~6~~ RA Schedule

The table/Gant Chart provided in Appendix J is a schedule summary for remedial activities at the M-124 Landfill from the PA phase through the end of the current reporting period and estimated into the future. This table/Gantt chart includes actual costs and schedules to date and

estimated/anticipated costs and schedule projected for future activities.

9.0 REFERENCES

Brinkerhoff. 2010. *MODFLOW Ground Water Modeling Report.*

Brinkerhoff. May 2011. Metals Background Evaluation.

Environmental Data Resources, Inc. (EDR). 2010. Off-Site Receptor Report. October 13.

NJDEP. 1999. Technical Requirements for Site Remediation. NJAC 7:26E *et seq.*

NJDEP. 2009. Technical Requirements for Site Remediation. NJAC 7:26E *et seq.*

NJDEP. 2004. Electronic Mail Correspondence – Reduction in Groundwater Monitoring Analyses.

NJDEP. 2007. Division of Remediation Management Response – Comments.

NJDEP. 2009. Letter regarding *Regulatory Approach to Fort Monmouth Landfills*. From Mr. Larry Quinn, Site Manager, NJDEP Bureau of Investigation, Design and Construction. To Mr. Joseph Fallon, FTMM DPW.

NJDEP. November 10, 2010. Letter regarding NJDEP Regulatory Requirements for Fort Monmouth Landfills. From Edward Putnam, Assistant Director, NJDEP. To Mr. Joseph Fallon, Directorate of Public Works, FTMM DPW.

Princeton Hydro. December 5, 2008. Engineering Design Report for U.S. Army – Fort Monmouth Stream Stabilization and Erosion Control Improvements. December 5.

Tetra Tech. December 2010. Offsite Receptor Evaluation Report for the Fort Monmouth Main Post and Charles Wood Areas.

U.S. Army Garrison, Fort Monmouth, DPW. December 1997. Fort Monmouth Standard Sampling Operating Procedure. New Jersey.

U.S. Army Garrison, Fort Monmouth, DPW. March 2011. Glauconitic Investigation Report.

Versar. 2003a. Remedial Investigation Report for the M-12 Landfill.

Versar. 2003b. Remedial Investigation Report and Sediment Quality Evaluation Report for the M-12/M-14 Landfill Site.

Versar. 2003c. Remedial Investigation Report for Near Surface Soils at the M-12 Landfill.

Formatted: Font color: Auto

Commented [UA1]: Do not see it referened in text. Delete this reference if it will not be cited in the text.

Weston. 1995. Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey.

~~Brinkerhoff Environmental Services, Inc. (Brinkerhoff). 2010. MODFLOW Ground water Modeling, U.S. Army, Fort Monmouth Main Post and Charles Wood Areas. June 10.~~

~~New Jersey Department of Environmental Protection (NJDEP). 1995. "Compliance Averaging." *Site Remediation News*. Volume 7, No. 2 Article 08. Spring.~~

~~Princeton Hydro, LLC (Princeton Hydro). 2008. Streambank Stabilization Report. December 5.~~

~~Shaw Environmental (Shaw). 2008. U.S. Army Fort Monmouth Base Realignment and Closure (BRAC) 2005 Site Investigation Report. July 21.~~

~~U.S. Army Garrison, Fort Monmouth, Directorate of Public Works (DPW). 1997. Fort Monmouth Standard Sampling Operating Procedure. New Jersey. December.~~

~~Versar, Inc. (Versar). 2005. Remedial Investigation Report.~~

~~Roy F. Weston, Inc. (Weston). 1993. Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey.~~

~~Weston. 1995. Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report. December.~~

~~Versar. 2004. Remedial Investigation Report for Near Surface Soils M-14 Landfill Site. March.~~

~~Versar. 2003. Remedial Investigation Report and Sediment Quality Evaluation for the M-14 Landfill Site. October.~~

~~NJDEP. 2008. Letter regarding *Landfill Delineation Project, FTMM, New Jersey*. From Mr. Larry Quinn, Site Manager, NJDEP Bureau of Investigation, Design and Construction. To Ms. Barbara Folk, Director, FTMM DPW. August 19.~~

~~NJDEP. 2009a. Letter regarding *Regulatory Approach to Fort Monmouth Landfills*. From Mr. Larry Quinn, Site Manager, NJDEP Bureau of Investigation, Design and Construction. To Mr. Joseph Fallon, FTMM DPW. February 24.~~

~~NJDEP. 2009b. Letter regarding *Revised Regulatory Approach to Fort Monmouth Landfills*. From Mr. Larry Quinn, Site Manager, NJDEP Bureau of Investigation, Design and Construction. To Mr. Joseph Fallon, FTMM DPW. June 11.~~

~~NJDEP. 2010. Letter regarding NJDEP Regulatory Requirements for Fort Monmouth Landfills. From Edward Putnam, Assistant Director, NJDEP. To Mr. Joseph Fallon,~~

Formatted: Font color: Custom Color(RGB(0,0,204))

Formatted: Font color: Custom Color(RGB(0,0,204))

~~Directorate of Public Works, FTMM DPW. November 10.~~

~~U.S. Army Garrison, Fort Monmouth (FTMM), Directorate of Public Works (DPW). 2004. Letter regarding *Reduction of Ground water Sampling Analyses – Main Post & Charles Woods, Restoration Sites throughout FTMM, New Jersey*. From Mr. Douglas Guenther, Environmental Protection Specialist, FTMM DPW. To Mr. Greg Zalaskus, NJDEP. November 10.~~

~~U.S. Army Garrison, FTMM, DPW. 2010. *FY2010 Fort Monmouth Base Realignment & Closure Installation Action Plan*. October 30.~~

~~Shaw. 2008. U.S. Army BRAC 2005, Site Investigation Report, Fort Monmouth. July 21.~~

Formatted: Font color: Custom Color(RGB(0,0,204))

FIGURES

TABLES

APPENDIX A

Electronic Documents Library

APPENDIX B

MODFLOW Ground Water Modeling Report

Brinkerhoff Environmental Services, Inc.

June 2010

APPENDIX C

Landfill Boundary Delineation and Near-Surface Soil Information

APPENDIX D

Monitoring Well Logs and Records

APPENDIX E

Fort Monmouth Standard Operating Procedures

Item 1: Decontamination Procedures for Field Equipment, Revised April 14, 2008

Item 2 Field Sampling, Revised March 29, 2010

Item 3: Geoprobe® Sampling Methods, Revised, March 29, 2010

Item 4: Monitoring Well Sampling for IRP Sites at Fort Monmouth, Revised April 17, 2008

Item 5: Low Flow Monitor Well Sampling, Revised October 13, 2010

APPENDIX F

Ground Water Monitoring and Sampling Information

APPENDIX G

Surface Water Monitoring and Sampling Information

APPENDIX H

Background Metals Evaluation

APPENDIX I

Receptor Evaluation and Public Notification

Item 1:	***Offsite Receptor Evaluation Report for Fort Monmouth, Main Post and Charles Wood Area,* Tetra Tech, Inc., November 2, 2010**
Item 2:	**Sensitive Receptor Survey Figure**
Item 3:	**Utility Map**
Item 4:	**Well Search**
Item 5:	**Vapor Intrusion Investigation**
Item 6:	**Public Notification Documents**

APPENDIX J

Costs

Schedule

Gantt Chart

United States Army
Fort Monmouth, New Jersey

M-12 Landfill (FTMM-12)
Remedial Investigation Report Addendum
(2nd Quarter 2001 through 3rd Quarter 2010)

U.S. Army Garrison Fort Monmouth, Main Post
Fort Monmouth, New Jersey

Prepared by

U.S. Army, Office of the Assistant Chief of Staff for Installation Management

Fort Monmouth, New Jersey

October 2012

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Objectives 1
1.2 Report Organization 1

2.0 SITE BACKGROUND 2
2.1 Site Location and Description 2
2.2 Environmental Setting 2
2.2.1 Geology 2
2.2.2 Hydrogeology 3
2.3 Site History and Background Investigations 3
2.3.1 September 2003 Remedial Investigation Report 4
2.3.2 October 2003 Sediment Quality Evaluation 4
2.3.3 October 2004 Near-Surface Soil Evaluation 5
2.3.4 November 2004 Reduction of Ground Water Analysis 6
2.3.5 July 2007 NJDEP Correspondence Letter 6
2.3.6 August 2008 Landfill Delineation Project 8
2.3.7 February 2009 Regulatory Approach to Fort Monmouth Landfills 8
2.3.8 2010 Sanitary Landfill Minor Disruption Approval 9
2.3.9 2010 NJDEP Regulatory Requirements for Landfills 9
2.3.10 2010 Aerial Photograph Analysis 9

3.0 REMEDIAL ACTIVITIES 11
3.1 Landfill Boundary and Near-Surface Soil Delineation Activities 11
3.2 Monitoring Well Installation Activities 11

4.0 MONITORING AND SAMPLING ACTIVITIES 12
4.1 Ground Water Monitoring 12
4.2 Ground Water Sampling 13
4.3 Surface Water Sampling 13
4.4 Types of Waste Generated and Disposal Methods 14

5.0 SITE ANALYTICAL RESULTS 15
5.1 Landfill Boundary and Near-Surface Soil Sampling Activities 15
VOCs 15
SVOCs 15
Pesticides/PCBs 16
Metals 16
5.1.1 Soil Summary 16

5.1.2 Quality Assurance/Quality Control - Soil 17
5.2 Ground Water Sampling Results 17
5.2.1 VOCs 18
5.2.2 VO TICs 18
5.2.3 SVOCs 18
5.2.4 SVO TICs 18
5.2.5 Pesticides and PCBs 18
5.2.6 Metals 18
5.2.7 Ground Water Summary 19
5.2.8 Ground Water – QA/QC 19
5.3 Surface Water Sampling Results 20
5.3.1 VOCs 21
5.3.2 TICs 21
5.3.3 Metals 21
5.3.4 Pesticides and PCBs 21
5.3.5 Surface Water Summary 21
5.3.6 Surface Water – QA/QC 22

6.0 BACKGROUND METALS EVALUATION 24

6.1 Evaluation Approach 24
6.1.1 Nature of Apparent Sources 25
6.1.2 Relationship of Metal Levels to Turbidity 26
6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples 30
6.1.4 Occurrence of Atypical Spikes 32
6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern 35

7.0 RECEPTOR EVALUATION 38

7.1 Sensitive Receptor and Well Search 38
7.2 Vapor Intrusion (VI) Investigation 38
7.3 Baseline Ecological Evaluation (BEE) 39
7.4 Public Notification 39

8.0 REMEDIAL ACTION PROGRESS 41

8.1 Costs of Remediation Incurred to Date 41
8.2 Ground Water Conclusions 41
8.3 Surface Water Conclusions 41
8.4 Soil Conclusions 41
8.5 Sediment Conclusions 42
8.6 Recommendations 42
8.7 RA Schedule 42

9.0 REFERENCES..... 43

FIGURES	
Figure 2-1	Site Location Map
Figure 2-2	Site Layout Map
Figure 2-3	Site Utilities
Figure 2-4	Wetlands Map
Figure 3-1	Landfill Boundary Delineation Map
Figure 3-2	Monitoring Well Location Map
Figure 4-1	Ground Water Elevation Contour Map (1st Quarter 2010)
Figure 4-2	Ground Water Elevation Contour Map (2nd Quarter 2010)
Figure 4-3	Ground Water Elevation Contour Map (3rd Quarter 2010)
Figure 4-4	Surface Water Sample Location Map
Figure 5-1	Ground Water Contaminant of Concern Distribution Map

TABLES	
Table 4-1	Ground Water Elevation Summary
Table 5-1	Ground Water Sampling Results - Site M-12MW14
Table 5-2	Ground Water Sampling Results - Site M-12MW15
Table 5-3	Ground Water Sampling Results - Site M-12MW16
Table 5-4	Ground Water Sampling Results - Site M-12MW17
Table 5-5	Ground Water Sampling Results - Site M-12MW18
Table 5-6	Ground Water Sampling Results - Site M-12MW19
Table 5-7	Ground Water Sampling Results - Site M-12MW20
Table 5-8	Ground Water Sampling Results - Site M-12MW21
Table 5-9	Ground Water Sampling Results - Site M-12MW22
Table 5-10	Ground Water Sampling Results - Site M-12MW23
Table 5-11	Ground Water Sampling Results - Site M-12MW24
Table 5-12	Ground Water Sampling Results - Site M-12MW25
Table 5-13	Ground Water Sampling Results - Site M-12MW26

APPENDICES	
Appendix A	Electronic Document Library
Appendix B	MODFLOW Ground Water Modeling Report, Brinkerhoff Environmental Services, Inc., June 2010
Appendix C	Landfill Boundary Delineation & Near-Surface Soil Information
Appendix D	Fort Monmouth Standard Operating Procedures
Appendix E	Monitoring Well Logs and Records
Appendix F	Ground Water Monitoring and Sampling Information
Appendix G	Surface Water Monitoring and Sampling Information
Appendix H	Background Metals Evaluation
Appendix I	Receptor Evaluation and Public Notification

Appendix J	M-12 Landfill Costs, Schedule, Gantt Chart

EXECUTIVE SUMMARY

This Remedial Investigation Report Addendum (RIRA) documents the remedial activities conducted by the Army to investigate soil, ground water, surface water, and sediment conditions at the M-12 Landfill, located in the Main Post Area of Fort Monmouth, New Jersey. This RIRA details remedial investigation activities conducted from the 2nd Quarter 2001 - 3rd Quarter 2010.

The M-12 Landfill consists of two sections – a northeast area (1.4 acres) and a southwest area (0.7 acres) - and is bordered by Husky Brook to the north, Moonshot Drive and the 975 and 976 warehouses to the south, Murphy Drive to the east, and building 978 (electrical substation) and Malterer Avenue to the west. The M-12 Landfill was in use from 1950-1966 for disposal of domestic, industrial, and automobile wastes.

In 1993, a background investigation was conducted by Roy F. Weston, Inc. (Weston) for 45 sites identified by Fort Monmouth and the New Jersey Department of Environmental Protection (NJDEP). Weston's findings were detailed in a report entitled: *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In the report, Weston recommended additional remedial investigation for the M-12 Landfill. In 1995, Weston conducted additional site investigation activities at 22 sites, including the M-12 Landfill – detailing their findings in a *Site Investigation Report* (December 1995). Initial field investigation activities included near-surface soil sampling, sediment sampling, surface water sampling, installation of monitoring wells, and ground water sampling. Based on the findings of Weston's 1995 SIR, the Army implemented a long-term ground water monitoring program. Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26) currently comprise the ground water monitoring network at the M-12 Landfill.

In September 2003, Versar prepared a *Remedial Investigation Report* (RIR), detailing remedial investigation activities conducted at the M-12 Landfill from 3rd Quarter 1996 – 1st Quarter 2001. Versar, Incorporated (Versar) prepared a *Remedial Investigation Report and Sediment Quality Evaluation for the M-12 and M-14 Landfills* (October 2003) and a *Remedial Investigation Report for Near-Surface Soils* (October 2004), which summarized sampling activities conducted by the Army to characterize Husky Brook sediments and near-surface landfill soil, respectively.

From March 1998 to September 1999, the Army characterized near-surface landfill soil via advancement of 147 soil borings and collection of 294 soil samples. In December 2008, the Army conducted landfill boundary delineation activities to refine the dimensions of the M-12 Landfill. The landfill boundary delineation study involved advancement and photo-documentation of test pits. Near-surface soil concentrations of arsenic, lead, and five semi-volatile organic compounds [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] exceeded NJDEP Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). Arsenic and lead are not considered M-12

Landfill contaminants of concern (COCs) because they are naturally-occurring within Fort Monmouth soils.

During the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010), ground water sampling was conducted quarterly. For the last eight ground water sampling quarters (4th Quarter 2008 – 3rd Quarter 2010), only metals (antimony, arsenic, beryllium, cadmium, lead, and thallium) exceeded NJDEP Ground Water Quality Standards (GWQS). Metals are not considered COCs at the M-12 Landfill because they are naturally-occurring within Fort Monmouth soils. Metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration. Since no COCs exceed NJDEP GWQS in M-12 Landfill ground water monitoring wells, a Classification Exception Area is not proposed.

During the current reporting period, surface water samples collected at the nearest upstream sampling point (SS-19) from the M-12 Landfill exceeded NJDEP SWQS for arsenic, bromodichloromethane, and lead. Surface water samples collected at the nearest downstream sampling point (SS-09) from the M-12 Landfill exceeded NJDEP SWQS for arsenic and lead. Metals are not considered COCs in Husky Brook because they are naturally-occurring within Fort Monmouth sediments. The detection of metals in surface water is due to a combination of a natural, dissolved component along with input from sample turbidity. Bromodichloromethane was detected during the June 2010 stream sampling event at stream sampling point SS-19. This is considered and isolated detection and is the first time bromodichloromethane has been detected at SS-09 since surface water sampling began at Husky Brook in 3rd Quarter 1996. Thus, bromodichloromethane is not considered a COC at the M-12 Landfill.

Future plans include collection of quarterly ground water and surface water samples until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP. The Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) as the next report submittal, which will include a final closure plan for the M-12 Landfill.

1.0 INTRODUCTION

This Remedial Investigation Report Addendum (RIRA) documents the remedial investigation activities conducted by the Army from the 2nd Quarter 2001 – 3rd Quarter 2010 to investigate soil, ground water, surface water, and sediment conditions at the M-12 Landfill.

1.1 Objectives

The objective of this RIRA is to document the site investigation activities conducted at the M-12 Landfill during the current reporting period of the 2nd Quarter 2001 – 3rd Quarter 2010. Natural attenuation with a long-term ground water monitoring program was implemented by the Army as a remedial action (RA) for the M-12 Landfill, based on recommendations in Weston's SIR (December 1995) and subsequent remedial investigation reports prepared by Versar, including: RIR (September 2003), *RIR and Sediment Quality Evaluation for the M-12 and M-14 Landfills* (October 2003), and *RIR for Near-Surface Soils* (October 2004). Copies of the above-referenced reports are provided in Appendix A. All remedial activities were conducted in accordance with the NJDEP's *Technical Requirements for Site Remediation* (*Technical Requirements*), New Jersey Administrative Code (N.J.A.C.) 7:26E *et seq*.

The RIR and subsequent preparation of this RIRA encompassed the following:

- Conducting quarterly ground water and surface water sampling and documenting the results to evaluate the effectiveness of the RA.
- Comparing the results of ground water and surface water sampling to the appropriate NJDEP GWQS and SWQS.
- Characterizing near-surface landfill soil and Husky Brook sediments.
- Identifying and discussing recommendations for the RA.
- Documenting remedial activities as required by the *Technical Requirements*.

1.2 Report Organization

Section 2.0 discusses the site history and background information for the M-12 Landfill. Section 3.0 summarizes the remedial activities conducted. Section 4.0 discusses ground water and surface water monitoring and sampling activities. Section 5.0 presents the laboratory analytical results of soil, ground water, and surface water sampling. Sections 6.0 and 7.0 discuss the Background Metals Evaluation and receptor evaluation, respectively. Section 8.0 discusses the effectiveness of the RA and provides recommendations for the M-12 Landfill. Section 9.0 is the reference section.

2.0 SITE BACKGROUND

The following sections describe the site background of the M-12 Landfill. Included is a description of the site location, site history, background investigations, and previous technical reports.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County (Figure 2-1). The M-12 Landfill consists of two sections – a northeast area (1.4 acres) and a southwest area (0.7 acres) - and is bordered by Husky Brook to the north, Moonshot Drive and the 975 and 976 warehouses to the south, Murphy Drive to the east, and building 978 (electrical substation) and Malterer Avenue to the west. The M-12 Landfill was in use from 1950-1966 for disposal of domestic, industrial, and automobile wastes. Since 1966, there has been growth and stabilization of vegetation (grass, trees, and bushes) along the surface and boundaries of the landfill. General utilities servicing M-12 Landfill are depicted on Figure 2-3. Wetland areas present on the Main Post are depicted on Figure 2-4.

2.2 Environmental Setting

This section summarizes the description of the geological and hydrogeological setting of the area surrounding Fort Monmouth and the Main Post area as presented in Versar, Inc.'s September 2003 RIR (Appendix A).

2.2.1 Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-12 Landfill is located in the Outer Coastal Plain sub-province, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks. These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary periods. The mineralogy ranges from quartz to glauconite.

As presented in the Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, prepared by Weston (Weston 1995), several natural and anthropogenic factors contribute to the wide range in concentrations of metals found in soils, which further impact the concentration of metals in ground water. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium, and manganese (among others), which are likely to be present at elevated concentrations in the ground water, particularly

when sediments are entrained in the collected ground water samples.

2.2.2 Hydrogeology

The water table aquifer on the Main Post is identified as part of the "Navesink-Hornerstown Confining Units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Wells installed in the Red Bank and Tinton Sands produce approximately 2-25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2-9 feet bgs). Water in the surficial aquifer generally flows east towards the Atlantic Ocean.

Additionally, Brinkerhoff prepared a *MODFLOW Ground Water Modeling Report*, dated June 10, 2010, which is included as Appendix B. In this report, Brinkerhoff developed and refined site-wide ground water models for both the Main Post and the Charles Wood areas of Fort Monmouth (Brinkerhoff 2010).

2.3 Site History and Background Investigations

In 1993, the Army contracted Weston to conduct a background investigation for 45 sites identified by Fort Monmouth and the NJDEP. Weston's findings were detailed in a report entitled: *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In the report, Weston recommended that additional remedial investigation be conducted for the M-12 Landfill. In 1995, Weston conducted additional site investigation activities at 22 sites, including the M-12 Landfill – detailing their findings in a *Site Investigation Report* (December 1995). Initial field investigation activities at the M-12 Landfill included near surface soil sampling, sediment sampling, surface water sampling, installation of monitoring wells, and ground water sampling.

Based on the findings of the Weston's 1995 SIR, the Army implemented of a long-term ground water monitoring program at the M-12 Landfill. Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26) currently comprise the ground water monitoring network at the M-12 Landfill.

In September 2003, Versar prepared a RIR, detailing remedial investigation activities conducted at the M-12 Landfill from 2nd Quarter 1997 – 1st Quarter 2001. Versar also prepared a *Remedial Investigation Report and Sediment Quality Evaluation for the M-14 Landfill* (October 2003) and a *Remedial Investigation Report for Near-Surface Soils* (October 2004), which summarized

sampling activities conducted by the Army to characterize Husky Brook sediments and near-surface landfill soil, respectively.

Copies of the above-referenced reports are provided in Appendix A. The following sections summarize previous remedial investigation activities conducted at the M-12 Landfill.

2.3.1 September 2003 Remedial Investigation Report

Following Weston's December 1995 SIR, the Army continued quarterly ground water sampling at the M-12 Landfill, as detailed in Versar's September 2003 RIR (Appendix A).

Sixteen rounds of ground water samples were collected from June 1997 - February 2001 and analyzed for VOCs, SVOCs, pesticides, PCBs, and TAL metals. Ground water concentrations of VOCs, pesticides, and PCBs were laboratory-determined to be in compliance with NJDEP GWQS. Only SVOC TICs and metals exceeded NJDEP GWQS in M-12 Landfill monitoring wells during the June 1997 – February 2001 reporting period. In addition, one SVOC, bis (2-ethylhexyl) phthalate, was detected at concentrations exceeding NJDEP GWQS in one monitoring well (M-12MW25) during one round of ground water sampling (2nd Quarter 2000).

Also as part of the RI, the Army conducted a soil sampling program in March 2001. Soil boring locations were selected based on ground water quality results from monitoring wells M-12MW16 and M-12MW22, in which concentrations of lead and arsenic exceeded NJDEP GWQS. Soil sampling was conducted in the vicinity of monitoring wells M-12MW16 and M-12MW22 to determine whether arsenic and lead concentrations detected in ground water samples were the result of a localized source within the landfill or were due to naturally soil conditions. The results of the investigation suggested that ground water was not adversely impacted by the presence of these metals in soil proximal to M-12MW16 and M-12MW22 (Versar, 2003a).

Based on the results of soil and ground water sampling conducted from June 1997 - February 2001, Versar concluded that no COCs exist in soil or ground water at the M-12 Landfill. NFA was recommended for both soil and ground water.

2.3.2 October 2003 Sediment Quality Evaluation

Studies conducted at other Main Post landfills (e.g. M-2 Landfill and M-8 Landfill) indicated that disposal of PCB-containing materials (e.g., electrical ballasts) occurred. PCBs were detected in soil and/or ground water samples collected at both the M-2 and M-8 Landfills. Based on these observations, in the second quarter of 2000, the Army conducted a sediment sampling investigation to evaluate potential impacts to stream sediments in creeks and/or brooks adjacent to Main Post and Charles Wood Area landfills.

On April 10, 2000, to determine potential PCB-related impacts to sediments in Husky Brook, the Army collected 25 surface and near-surface sediment samples from Husky Brook. The samples

were collected along the 1,700-foot portion of Husky Brook that bisects the M-12 and M-14 Landfills. Sample depths ranged from surface (0-6 inches) to near-surface (6-12 inches and 18-24 inches). All 25 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations as defined in the NJDEP's *Guidance for Sediment Quality Evaluations* (NJDEP 1998).

With the exception of one anomalous duplicate sample detection of the PCB Arcolor 1254, no PCBs were detected in any of the 25 sediment samples collected from Husky Brook. Based on NJDEP's guidance criteria, PCBs are not impacting sediments in Husky Brook. In addition, no potential exists for long-term, adverse, benthic effects in Husky Brook associated with the M-12 and M-14 Landfills. A NFA determination for Husky Brook sediments was recommended for the M-12/M-14 Landfills.

Additional details regarding the October 2003 sediment quality evaluation is provided in Versar's *Remedial Investigation Report and Sediment Quality Evaluation for the M-12 and M-14 Landfill* (Appendix A).

2.3.3 October 2004 Near-Surface Soil Evaluation

To evaluate if the existing soil cover at the M-12 Landfill complies with the Solid Waste Disposal Act of 1965, the Army characterized near-surface landfill soils via installation and sampling of 147 soil borings. From March 1998 to September 1999, the Army advanced soil borings and collected soil samples using a 2-inch Geoprobe® Macrocore sampler to a maximum depth of two feet below ground surface (bgs). All sampling activities were conducted in accordance with *Fort Monmouth Standard Sampling Operating Procedures* (DPW 1997) and the NJDEP *Field Sampling and Procedures Manual*. A total of 294 soil samples were collected from the 147 borings and analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. The locations of the borings were established in a grid-like pattern within the previously designated boundaries of the M-12 Landfill. The *RIR for Near-Surface Soils* (Versar, October 2004) provides a detailed explanation of the soil sampling activities conducted at the M-12 Landfill (Appendix A).

Near-surface soil concentrations of arsenic, lead, and five semi-volatile organic compounds [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] exceeded NJDEP Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS). Arsenic and lead are not considered M-12 Landfill COCs because they are naturally-occurring within Fort Monmouth soils.

However, given the inactive and undisturbed state of the landfill, the lack of groundwater use at or hydraulically downgradient of the M-12 Landfill, and low COC concentrations in shallow surface soils, NFA is recommended for near-surface soils at the M-12 Landfill.

To address M-12 Landfill near-surface soil samples that do not meet NJDEP soil remediation

standards, the Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12 Landfill.

2.3.4 November 2004 Reduction of Ground Water Analysis

In November 2004, based on results of long-term ground water monitoring data, the Army requested a reduction in ground water analysis for samples collected from M-12 Landfill monitoring wells. No VOCs, SVOCs, pesticides, and PCBs were detected at concentrations exceeding NJDEP GWQS in any M-12 Landfill monitoring well since 2nd Quarter 2003 (only SVOC TICs exceeded NJDEP GWQS in 2nd Quarter 2003). On November 12, 2004, in an email correspondence to the Army, the NJDEP approved the reduction of ground water sample analysis to TAL metals only (Appendix A).

2.3.5 July 2007 NJDEP Correspondence Letter

On July 25, 2007, the NJDEP sent the Army a correspondence letter (Appendix A), which commented on the following M-12 Landfill reports prepared by Versar:

- September 2003 *RIR for M-12 Landfill*
- October 2003 *RIR for Near Surface Soils, M-12 Landfill*
- October 15, 2003 *RIR and Sediment Quality Evaluation, M-12/M-14 Landfills*

The NJDEP's July 25, 2007 comments are summarized in the following sections.

<u>M-12 and M-14 Landfills Recognized as One Site</u>
NJDEP considers the M-12 and M-14 landfills one site, separated by Husky Brook, which bisects the two landfills. NJDEP further stated that the Army has recognized these sites as one site with regards to the sediment quality evaluation and, to a lesser extent, the surface water evaluation. Additionally, NJDEP stated that the soil and ground water sampling results from both landfills are similar, and the respective RIRs have concluded that shallow ground water beneath both landfills flows towards Husky Brook.

<u>Work Plan Submittal</u>
The NJDEP stated that the Army should submit a comprehensive investigation work plan for the NJDEP's review and approval prior to initiating any of the additional sampling requested in the July 25, 2007 NJDEP correspondence letter. A Work Plan was recommended to ensure that the NJDEP and the Army are in agreement on all details prior to commencement of sampling.

<u>Landfill Boundary Delineation</u>
Based on a review of aerial photographs, NJDEP identified potential disposal areas outside the known boundaries of the M-12 and M-14 Landfills. As such, NJDEP requested that the Army review and revisit the delineation of all landfill areas at Fort Monmouth, including the M-12 and

M-14 Landfills. NJDEP further stated that conducting test pits to verify geophysical results of landfill boundaries would be good practice, and verifying landfill boundaries prior to closing and transfer of Fort Monmouth would be in the Army's best interest.

Surface Soils

According to NJDEP, results of surface soil sampling indicated soil in the 0 to 12-inch interval contains SVOCs and metals at concentrations exceeding NJDEP RDCSCC throughout the M-12 Landfill and in two distinct areas of the M-14 Landfill. Therefore, these surface soils have the potential for direct contact, and a remedial action would be required to minimize or eliminate that potential. Depending on the location and extent of the soil contamination exceeding the RDCSCC, targeted soil excavations may be feasible. At a minimum, engineering controls such as additional soil cover, fencing, and warning signs would be required, in conjunction with a deed notice.

NJDEP further stated that in Versar's March 17, 2004 *RIR for Near-Surface Soils*, compliance averaging of soil sample results was done incorrectly in several cases. Also, averaging was applied to arsenic and several polyaromatic hydrocarbons (PAHs), which the NJDEP does not allow because the health-based Soil Cleanup Criteria (SCC) is less than the RDCSCC.

Surface Water and Sediments

NJDEP required a Baseline Ecological Evaluation (BEE) to determine whether receptors, especially within Husky Brook, have been impacted by the M-12 and M-14 Landfills.

NJDEP recommended collection and analysis of sediment samples for TCL+30 and TAL metals. Sampling locations would include one upstream, one downstream, and two locations along the landfills - at least one on each side of the tributary that splits the M-12 Landfill, and one from the tributary that bisects the M-12 Landfill.

NJDEP noted that surface water sample location SS-12, which is in Husky Brook Pond and was used as an upstream sampling point, should be used in the future as an upstream sampling point for both the M-12 and M-14 Landfills.

NJDEP also recommended, based on the presence of measurable VOCs in surface water samples, additional surface water samples should be collected along Husky Brook in conjunction with the recommended sediment sampling. The NJDEP recommended using passive diffusion bags (PDBs) to collect surface water samples for VOC analysis. The PDBs were recommended to be deployed in the sediments to monitor shallow ground water discharging to Husky Brook. In addition, NJDEP requested that the Army evaluate any Army-owned properties upstream of the M-12 and M-14 Landfills that could be the source of the VOC concentrations detected in surface water samples collected from Husky Brook.

Ground Water

Based on the following concerns and deficiencies, NJDEP stated that a NFA could not be issued

for ground water:

- Upgradient monitoring wells must be installed and sampled at each landfill to provide data for remedial decision making. Samples from the upgradient wells should be analyzed for TAL metals only.

- An additional round of ground water samples must be collected from all M-12 and M-14 Landfill monitoring wells to provide data for remedial decision making because the existing wells at both landfills may not have been sampled since 2001.

- Approximately four wells, including an upgradient well, should be installed in the western portion of the M-14 Landfill. Ground water samples collected from these wells should be analyzed for TCL+30 and TAL metals.

- Paper copies of all sampling documentation (e.g. ground water field parameters and low-flow sampling sheets) must be submitted with summary tables in future reports.

2.3.6 August 2008 Landfill Delineation Project

On August 1, 2008, to confirm the boundaries of nine solid waste landfills at Fort Monmouth, including the M-12 Landfill, the Army submitted a proposal to the NJDEP to conduct a landfill delineation study involving advancement of test pits and soil borings. The NJDEP reviewed and approved the Army's proposed study in a letter dated August 19, 2008 (NJDEP 2008) (Appendix A).

Details of the M-12 Landfill delineation project are included in Section 3.1 of this RIRA.

2.3.7 February 2009 Regulatory Approach to Fort Monmouth Landfills

In a February 24, 2009 correspondence from NJDEP (Appendix A), the NJDEP outlined its requirements for Fort Monmouth landfills:

- NJDEP stated that surface soils on all the landfills contain contaminants at concentrations exceeding New Jersey Soil Remediation Standards (SRS), and some of these contaminants appear to be associated with specific waste materials such as PCBs. PCBs have not been detected in M-12 Landfill surface soils.

- NJDEP stated that in locations where SRSs are exceeded, the NJDEP would accept placement of an additional one-foot-thick clean soil cover to eliminate direct contact. Existing areas of exposed waste deposits must either be removed or properly re-graded and covered with 1-2 feet of clean soil cover. The NJDEP also stated that it would verify that the NJDEP Division of Solid and Hazardous Waste (DSHW) would accept one

additional foot of soil cover as a final cover for the landfills.

- NJDEP DSHW requires evaluation of the landfills for methane gas generation and installation of passive or active gas venting systems as necessary. NJDEP stated that Fort Monmouth must perform a methane gas evaluation for each landfill or present existing documentation and data that conclusively show absence of subsurface methane gas at each landfill. In addition, deed notices would be required for all landfills due to the documented presence of waste deposits, even if NFA status was achieved.

2.3.8 2010 Sanitary Landfill Minor Disruption Approval

In September 2010, NJDEP granted approval of a Sanitary Landfill Minor Disruption Permit (Permit No. LCB100002) for conducting remedial investigation activities at the nine Fort Monmouth landfills (Appendix A). The minor disruption activities approved by the NJDEP include soil borings, soil sampling, test pits, installation of piezometers and monitoring wells, injection of chemical and biological oxidation agents to enhance ground water remediation, and methane gas surveys. The approval was granted with a five-year expiration date.

2.3.9 2010 NJDEP Regulatory Requirements for Landfills

In a letter dated November 2010, NJDEP provided Appendix 1 of *NJDEP Regulatory Approach – Fort Monmouth Landfills* (Appendix A). The letter indicates that the NJDEP Solid and Hazardous Waste Program (SHWP) determined that NJDEP SRP will assume the lead regulatory role for Fort Monmouth. Appendix 1 provides a summary and discussion of all NJDEP regulatory requirements for the Fort Monmouth Landfills including surface water, sediment, landfill cover/near-surface soils, methane gas, deed notices, and operation and maintenance.

2.3.10 2010 Aerial Photograph Analysis

In 2010, the Army conducted an analysis of historical aerial photographs for landfills on the Main Post (Appendix A).

<u>May 2, 1957 Aerial Photograph</u>

A 1957 aerial photograph of Fort Monmouth reveals that additional buildings were constructed on the eastern side of the Main Post, as well as an oval running track towards the southern-central portion of the Main Post. An incinerator is depicted in the southeast corner of the Main Post boundary near Main Street. In the photograph, the M-3, M-4, M-5, and M-8 Landfills are visible on the northeastern portion of the Main Post. A small magazine area is noted on the figure, located slightly north of the current M-2 Landfill area on the southwestern section of the Main Post. The surrounding area appears to be more developed, with less open space and additional residential housing.

May 13, 1963 Aerial Photograph

Changes in this aerial photograph are primarily noted for the M-3, M4, M-5, and M-8 Landfills, which consolidate all of the landfills into one area labeled "Site 1." An L-shaped wall appears to divide the M-8 and M-5 Landfills. Possible construction debris and light-toned surface are noted in the northwest portion of the M-5 Landfill. The M-2 Landfill is labeled as "Site 2 Poss Landfill". A small fill area is depicted behind the Gosselin housing area within the vicinity of the current M-14 Landfill.

December 6, 1969 Aerial Photograph

The 1969 photograph of Fort Monmouth shows several new buildings that still remain today: the theater (Building 1215), bowling alley (Building 689), and Buildings 361, 362, and 363. The "Site 1" area that encompasses the M-3, M-4, M-5, and M-8 landfills shows a defined boundary for the M-8 Landfill and is now labeled as a landfill. Three new fill areas have been noted on the figure: (1) an area located within a small section of the current M-18 Landfill; (2) an additional fill area in the western portion of the M-12 Landfill; and (3) a small fill area located south of the 750 area.

March 13, 1974 Aerial Photograph

The 1974 photograph of Fort Monmouth reveals minor changes to the installation. The figure depicts the Main Post from the M-2 and M-3 Landfills to Oceanport Avenue. The M-2, M-3, M-8, M-12, M-14, and M-18 Landfills seem to be undisturbed and vegetated.

3.0 REMEDIAL ACTIVITIES

Based on information requested by NJDEP in their correspondence letters, the findings detailed in Versar's September 2003 RIR, October 2003 *RIR and Sediment Quality Evaluation for the M-12 and M-14 Landfills*, October 2004 *RIR for Near-Surface Soils*, and previous work conducted by Weston in 1995, the Army conducted additional RI activities at the M-12 Landfill, including landfill boundary delineation activities and installation of monitoring wells.

3.1 Landfill Boundary and Near-Surface Soil Delineation Activities

In accordance with the NJDEP's August 19, 2008 approval letter, in January and March 2009, the Army conducted landfill boundary delineation activities to refine the dimensions of the M-18 Landfill. Test pits and trenches were advanced around the known perimeter of the M-18 Landfill boundary at 24 locations (Figure 3-1). Trench logs and photographic documentation logs are provided in Appendix C. The landfill boundary delineation activities resulted in minor expansion of the southern boundary of the M-18 Landfill (Figure 3-1).

3.2 Monitoring Well Installation Activities

In accordance with the NJDEP's July 25, 2007 correspondence letter, during the current reporting period (2nd Quarter 2001 - 3rd Quarter 2010), the Army installed two upgradient monitoring wells along the southern border of the M-12 Landfill. Monitoring wells M-12MW14 and M-12MW15 were installed on July 19-20, 2010. Ground water samples collected from monitoring wells M-12MW14 and M-12MW15 were analyzed for TCL+30 and TAL metals. Ground water sampling results are discussed in Section 5.2. The monitoring well logs, permits, and records are provided in Appendix E.

Thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26) currently comprise the ground water monitoring network at the M-12 Landfill. The locations of all thirteen monitoring wells at M-12 Landfill are presented in Figure 3-2.

4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the Long Term Monitoring (LTM) program implemented at the M-12 Landfill, quarterly ground water monitoring and surface water sampling was conducted from the 2nd Quarter 2001 - 3rd Quarter 2010. Ground water samples were collected from thirteen ground water monitoring wells (M-12MW14, M-12MW15, M-12MW16, M-12MW17, M-12MW18, M-12MW19, M-12MW20, M-12MW21, M-12MW22, M-12MW23, M-12MW24, M-12MW25, and M-12MW26). Static depth-to-water was measured to determine ground water elevations for all thirteen monitoring wells for each ground water monitoring event.

Surface water samples were collected from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28) across Fort Monmouth's Main Post. The nearest upstream sampling point from the M-12 Landfill is SS-19. The nearest downstream sampling point from the M-12 Landfill is SS-9.

Sampling was conducted by the Army in accordance with the established protocols as described in the Fort Monmouth SOPs and the NJDEP's most recent *Field Sampling and Procedures Manual*. Applicable Fort Monmouth SOPs are provided in Appendix D.

In November 2004, based on results of long-term ground water monitoring data, the Army requested a reduction in ground water analysis for samples collected from M-12 Landfill monitoring wells. On November 12, 2004, in an email correspondence to the Army, the NJDEP approved the reduction of ground water sample analysis to TAL metals only (Appendix A).

Refer to Appendix F for ground water details and Appendix G for surface water details. Laboratory analyses of the samples were conducted at the FMETL, a New Jersey-certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During each round of the ground water sampling, depth-to-water measurements were collected at each monitoring well and recorded with an accuracy of 0.01 foot. Depth-to-ground water measurements for the last eight quarters of ground water sampling are presented in Table 4-1. During the current reporting period, no separate phase product was observed in any of the thirteen M-12 Landfill monitoring wells.

Ground water contour maps were generated for the 1st Quarter 2010 through the 3rd Quarter 2010 (Figures 4-1 through 4-3). Ground water was encountered at the M-12 Landfill at depths ranging from 1.98 feet to 10.31 feet bgs, grading towards Husky Brook. Starting in 2010, depth-to-water measurements were collected for the entire Main Post in lieu of site-specific measurements in order to provide a more accurate representation of ground water elevation. Depth-to-water measurements are summarized quarterly in Appendix F. NJDEP Contour Map Reporting Forms are also presented in Appendix F for each quarterly sampling event.

The contour maps indicate that shallow ground water underlying the M-12 Landfill consistently flows towards Husky Brook. Significant variations in ground water flow conditions were not observed during the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling of the seven M-12 Landfill monitoring wells was conducted by the Fort Monmouth DPW.

Sampling equipment was decontaminated before and after each use. Following collection, the ground water samples were placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Appendix F includes all associated ground water data, tables and figures for each sampling event. Appendix F also includes ground water elevation summaries and ground water contour maps. Depth-to-water measurements were collected on a post-wide basis starting with the 1st Quarter 2010. Considering the much larger number of data points, post-wide data are considered to be better representations of ground water conditions. Contour Map Reporting Forms, Isoconcentration Maps, Isoconcentration Summaries, and full laboratory analytical data are also provided in Appendix F. Analytical results are discussed in Section 5.2.

4.3 Surface Water Sampling

During the current reporting period, surface water sampling was conducted by the Fort Monmouth DPW as part of the base-wide surface water sampling program. A total of 105 surface water samples were collected in seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). A Surface Water Sample Location Map is provided as Figure 4-4. The samples were analyzed by the FMETL. The results of these analyses are discussed in Section 5.3.

Sampling equipment was decontaminated before and after each use. Surface water samples were collected and placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

All surface water sampling data along with supporting data are presented in Appendix G, including copies of the chain-of-custody forms, laboratory analytical data, a summary of surface water sampling activities for Surface Water (Rounds 1 through 56) for all sampling points, sampling rounds, sample identifications, stream sampling locations, collection/analysis dates, analytical parameters, and analytical methods.

4.4 Types of Waste Generated and Disposal Methods

The waste types generated by the sampling activities included polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment (PPE). The tubing, bailers, string, PPE, purge water, and decontamination solutions were properly disposed offsite.

5.0 SITE ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the M-12 Landfill based on soil sampling and the seven most recent quarterly rounds of ground water and surface water samples collected and analyzed during the current reporting period.

5.1 Landfill Boundary and Near-Surface Soil Sampling Activities

From March 1998 to September 1999, the Army characterized near-surface landfill soil via advancement of 147 soil borings (B-1 through B-61 and B-63 through B-148) and collection of 294 soil samples. Soil analytical results were compared to the NJDEP's November 4, 2009 Soil Remediation Standards (N.J.A.C. 7:26D), as per Attachment 1 of NJDEP's November 2010 Letter: *Regulatory Approach to Fort Monmouth Landfills*. Soil analytical data tables for the M-12 Landfill are provided in Appendix C.

VOCs

No VOCs exceeded NJDEP NRDCSRS.

SVOCs

The following SVOCs were detected at concentrations exceeding NJDEP NRDCSRS in at least one soil sample: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

Benzo(a)anthracene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in seven soil samples. Concentrations ranged from 2.3 mg/kg in B-104 (3-9 inches bgs) to 17 mg/kg in B-127 (0-6 inches bgs).

Benzo(a)pyrene was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in 50 soil samples. Concentrations ranged from 0.21 mg/kg in B-1 (6-12 inches bgs) and B-120 (6-12 inches bgs) to 17 mg/kg in B-127 (0-6 inches bgs).

Benzo(b)fluoranthene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in nine soil samples. Concentrations ranged from 2.2 mg/kg in B-112 (6-12 inches bgs) to 15 mg/kg in B-127 (0-6 inches bgs).

Dibenz(a,h)anthracene was detected at concentrations exceeding the NJDEP NRDCSRS of 0.2 mg/kg in eight soil samples. Concentrations ranged from 0.32 mg/kg in B-25 (6-12 inches bgs) to 3.2 mg/kg in B-127 (0-6 inches bgs).

Indeno(1,2,3-cd)pyrene was detected at concentrations exceeding the NJDEP NRDCSRS of 2 mg/kg in three soil samples. Concentrations ranged from 2.7 mg/kg in B-122 (0-6 inches bgs) to

7.5 mg/kg in B-127 (0-6 inches bgs).

Pesticides/PCBs

No pesticides or PCBs exceeded NJDEP NRDCSRS.

Metals

Two metals (arsenic and lead) were detected at concentrations exceeding NJDEP NRDCSRS in at least one soil sample. These analytical results are summarized in Tables 5-5 through 5-7 of Appendix C.

Arsenic was detected at concentrations exceeding the NJDEP NRDCSRS of 19 mg/kg in 57 soil samples. Concentrations ranged from 19.1 mg/kg in B-53 (4-10 inches bgs) to 51.3 mg/kg in B-64 (6-12 inches bgs).

Lead was detected at concentrations exceeding the NJDEP NRDCSRS of 800 mg/kg in one soil sample location at a concentration of 1090 mg/kg at B-139 (0-6 inches bgs).

5.1.1 Soil Summary

No VOCs, pesticides, or PCBs were detected at concentrations exceeding NJDEP NRDCSRS. Thus, VOCs, pesticides and PCBs are not considered soil COCs at the M-12 Landfill. Although arsenic and lead concentrations exceeded NJDEP NRDCSRS, these metals are not considered COCs because they are naturally-occurring within Fort Monmouth soils. Refer to the Background Metals Evaluation provided in Section 6.0 of this RIRA for additional details regarding naturally-occurring metals in Fort Monmouth soils.

The five SVOCs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene] are considered soil COCs as they exceed both the NJDEP NRDCSRS and Maximum Background Concentrations (MBC) established for soils at the Main Post.

- ***Benzo(a)anthracene*** is considered a COC because it was detected greater than the MBC of 0.65 mg/kg in all seven soil samples where benzo(*a*)anthracene exceeded NJDEP NRDCSRS.
- ***Benzo(a)*****pyrene** is considered a COC because it was detected greater than the MBC of 0.6 mg/kg in 16 of the 50 soil samples where benzo(a)pyrene exceeded NJDEP NRDCSRS.
- ***Benzo(b)fluoranthene*** is considered a COC because it was detected greater than the MBC of 0.9 mg/kg in all nine soil samples (eight borings) where benzo(b)fluoranthene exceeded NJDEP NRDCSRS.

- ***Dibenz(a,h)anthracene*** is considered a COC because it was detected greater than the MBC of 0.079 mg/kg in all eight soil samples where dibenz(a,h)anthracene exceeded NJDEP NRDCSRS.

  Indeno(1,2,3-cd)pyrene is considered a COC because it was detected at concentrations greater than the MBC of 0.46 mg/kg in three soil samples where indeno(1,2,3-cd)pyrene exceeded NJDEP NRDCSRS.

5.1.2 Quality Assurance/Quality Control - Soil

Quality assurance/quality control (QA/QC) samples including samples duplicates, field blanks and trip blanks, were collected in accordance with the version of the NJDEP *Field Sampling Procedures Manual* in effect at the time sampling was conducted.

5.2 Ground Water Sampling Results

Analytical results from each of the thirteen monitoring wells at the M-12 Landfill for are summarized in Tables 5-1 through 5-13. Ground water summary tables include detected analytical results and are divided by monitoring well numbers and sampling date. The characterization of ground water quality at the M-12 Landfill consists of quarterly ground water sampling events conducted from 2nd Quarter 2001 – 3rd Quarter 2010. Ground water analytical results are compared to NJDEP GWQS and are presented in three different tabs reflecting changes to NJDEP GWQS. The first set of data is compared against the January 7, 1993 criteria; the next is when a criterion change occurred on November 7, 2005, followed by another criterion change on July 27, 2007.

The results in the ground water summary tables include analyte detections including exceedances of NJDEP GWQS, which are bolded and shaded. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m,p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs and SVOCs.
- Duplicate samples are included after the respective primary sample.
- Low flow sampling method results are identified as "LF."
- A "J" value is a concentration exceeding the method detection limit (MDL) but less than the reporting limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results (ER) are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated blank sample.
- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP Case Manager approval.

If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

5.2.1 VOCs

Throughout the current reporting period, no VOCs were detected in ground water samples at concentrations exceeding NJDEP GWQS.

5.2.2 VO TICs

Throughout the current reporting period, no VO TIC concentrations were detected in ground water samples in excess of the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations.

5.2.3 SVOCs

Throughout the current reporting period, no SVOCs were detected in ground water samples at concentrations exceeding NJDEP GWQS.

5.2.4 SVO TICs

Concentrations of SVO TICs exceeded NJDEP GWQS once during the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010) in 2nd Quarter 2003. A total SVO TIC concentration of 611 µg/L exceeded the NJDEP GWQS of 500 µg/L in M-12MW16. Throughout the remainder of the current reporting period, no SVO TIC concentrations were detected in ground water samples in excess of the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations.

5.2.5 Pesticides and PCBs

Throughout the current reporting period, no pesticides or PCBs were detected at concentrations exceeding NJDEP GWQS.

5.2.6 Metals

During the last eight quarterly sampling events conducted from October 2008 to August 2010, six metals were detected in ground water samples at concentrations exceeding NJDEP GWQS:

Antimony was detected at concentrations exceeding the NJDEP GWQS of 6 µg/L in five of the eight rounds of sampling. Concentrations ranged from 6.20 µg/L (sampling round #41) in monitoring well M-12MW21 to 21.0 µg/L (sampling round #40) in monitoring well M-12MW25.

Arsenic was detected at concentrations exceeding the NJDEP GWQS of 3 µg/L in all eight rounds of sampling. Concentrations ranged from 3.67 µg/L (low-flow #4 - sampling round #46) in monitoring well M-12MW23 to 136 µg/L (low-flow #3 – sampling round #45) in monitoring well M-12MW22.

Beryllium was detected at concentrations exceeding the NJDEP GWQS of 1 µg/L in six of the eight rounds of sampling. Concentrations ranged from 1.03 µg/L (sampling round #49) in monitoring well M-12MW16 to 2.05 µg/L (low-flow #4 - sampling round #46) in monitoring well M-12MW23.

Cadmium was detected at concentrations exceeding the NJDEP GWQS of 4 µg/L in one of the eight rounds of sampling. The concentration of cadmium was 4.34 µg/L (sampling round #42) in monitoring well M-12MW22.

Lead was detected at concentrations exceeding the NJDEP GWQS of 5 µg/L in five of the eight rounds of sampling. Concentrations ranged from 5.02 µg/L (sampling round #42) in monitoring well M-12MW22 to 18 µg/L (sampling round #40) in monitoring well M-12MW19.

Thallium was detected at concentrations exceeding the NJDEP GWQS of 2 µg/L in one of the eight rounds of sampling. The concentration of thallium was 2.15 µg/L (sampling round #39) in monitoring well M-12MW25.

5.2.7 Ground Water Summary

Figure 5-1 (Ground Water Contaminants of Concern Distribution Map) depicts all analytes that exceeded NJDEP GWQS for the eight most recent ground water sampling events. Only metals (antimony, arsenic, beryllium, cadmium, lead, selenium, and thallium) were detected at concentrations exceeding NJDEP GWQS.

5.2.8 Ground Water – QA/QC

Quality assurance and quality control (QA/QC) samples were collected in accordance with the current version of the NJDEP's *Field Sampling Procedures Manual* in effect at the time sampling was conducted. All ground water samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method. Ground water QA/QC sample results are provided in the relevant lab packages in Appendix F.

M-12 Ground Water Data Validation

Tetra Tech EM Inc. (Tetra Tech) conducted data validation for the M-12 Landfill. Data was evaluated for the following criteria: data completeness; sample preservation, receipt, and holding times; gas chromatography and mass spectrometry (GC/MS) instrument performance checks; initial and continuing calibration; calibration verification; field, trip, and laboratory blanks; inductively coupled plasma – interference check sample (ICP-ICS); system monitoring

compounds (surrogates); matrix spike/matrix spike duplicates (MS/MSDs); laboratory duplicate sample analysis; ICP serial dilution; field duplicates; laboratory control samples (LCSs); dilution; re-extraction and reanalysis; internal standards; target analyte identification; analyte quantitation; and reported detection limits. Data validation packages are provided in their respective appendices.

- Tetra Tech conducted data validation of the analytical results for eleven groundwater samples, one field duplicate, and one field blank that were collected at the M-12 Landfill on November 18, 2009 as part of the fourth quarter 2009 long-term monitoring project. Tetra Tech concluded the overall quality of this data package was acceptable. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for eleven groundwater samples, three field duplicates, and three field blanks that were collected at the M-12 Landfill on June 2, 3, and 4, 2010 as part of the second quarter 2010 long-term monitoring project. Tetra Tech concluded the overall quality of this data package was acceptable. All data can be used as qualified.

5.3 Surface Water Sampling Results

Quarterly surface water samples were collected at 15 locations during the current sampling period (Surface Water Sampling Rounds 50 through 56). The nearest upstream sampling point from the M-12 Landfill is SS-19. The nearest downstream sampling point from the M-12 Landfill is SS-09. Results for surface water samples from inception of LTM are summarized in Appendix G. Surface water summary tables include detected analytical results for the surface water sample locations and are divided by surface water sample numbers and sampling dates.

From March 2009 through September 2010, seven quarterly surface water sampling events were conducted. Surface water sampling results from the base-wide sampling program were compared to NJDEP Freshwater SWQS. Concentrations of VOCs, metals, and wet chemistry exceeding NJDEP Freshwater SWQS are summarized in Appendix G. Surface water contaminant distributions with time are presented in Appendix G. The results of the current surface water sampling events are discussed below.

The results in the surface water summary tables include analyte detections as well as exceedances of the NJDEP Freshwater SWQS, which are bolded and shaded. VOCs, metals, and wet chemistry parameters are presented as required to summarize results for detected parameters. Detections are presented in the surface water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m,p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs.

- Duplicate samples are included after the respective primary sample.
- A "J" value is a concentration exceeding the MDL but less than the RL for VOCs.
- Estimated Results "ER" are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated field blank sample.
- If a particular sample suite or analyte was not detected in a surface water sample location, the suite/analyte is not presented in the summary table.

5.3.1 VOCs

During one of the eight surface water sampling events conducted during the current reporting period at upstream surface water sampling point SS-19, bromodichloromethane was detected at a concentration of 1.03 µg/L, exceeding the NJDEP SWQS of 0.55 µg/L. Bromodichloromethane concentrations were ND for the other seven surface water sampling events at SS-19.

Appendix G includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.3.2 TICs

During the current reporting period, VO TICs were periodically detected at seven of the 15 surface water sampling locations. For comparison purposes, concentrations were compared to the GWQS as there are no SWQS for VO TICs.

Surface water TICs did not exceed either the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations during this reporting period. Appendix G includes a summary of the analytical results for the surface water TICs during this reporting period.

5.3.3 Metals

Arsenic and lead were detected at concentrations that exceeded their respective NJDEP SWQS at the upstream (SS-19) and downstream (SS-9) surface water sampling points.

5.3.4 Pesticides and PCBs

Pesticides and PCBs were not analyzed in surface water samples collected during the current reporting period.

5.3.5 Surface Water Summary

During one of the eight surface water sampling events conducted during the current reporting

period, only one VOC (bromodichloromethane) was detected at concentrations exceeding NJDEP SWQS at upstream surface water sampling point SS-19. Arsenic and lead were detected at concentrations that exceeded their respective NJDEP SWQS at both the upstream (SS-19) and downstream (SS-9) surface water sampling points.

5.3.6 Surface Water – QA/QC

To verify the reliability of surface water analytical results, Brinkerhoff reviewed the holding times for each sample and the results of the analyses of nine method blanks, seven trip blanks, seven field blanks, and seven field duplicate samples for the surface water samples. The discussion below is based upon QA/QC for the VOC surface water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each set of surface water samples for each surface water sampling event. These method blanks consisted of laboratory-deionized water that is processed identically to the samples and analyzed with the sample batch. A total of nine VOC method blanks were analyzed with the base wide surface water samples.

No COCs were detected in the method blank samples.

Trip Blanks

Seven trip blanks were included as part of the base-wide surface water sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the surface water samples.

Methylene chloride was detected in one of the seven trip blanks at a concentration of 15.28 µg/L, which exceeds the NJDEP Freshwater SWQS of 2.5 µg/L, but is in compliance with the saline SWQS of 310 µg/L. Methylene chloride is a common laboratory contaminant.

Field Blanks

During each day's sampling activities, one field blank sample was collected to document equipment decontamination procedures. A total of seven field blanks were collected during the base-wide surface water sampling program. The field blanks were collected by pouring deionized water supplied by the laboratory over the equipment used for daily sampling activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the surface water samples.

Methylene chloride was detected in one of the seven trip blanks at a concentration of 2.18 µg/L, which is in compliance with the NJDEP Freshwater SWQS of 2.5 µg/L. Methylene chloride is a common laboratory contaminant.

Duplicate Samples

Seven field duplicate samples were also collected during the base-wide surface water sampling events to verify the consistency of the entire sampling and analytical procedures. The results for the duplicate samples were similar to those collected for the original samples. The RPDs for the duplicate sample analyses ranged from 0 to 21.51 percent; however, the average RPD for the seven duplicates was 13.65 percent. Based upon average RPDs, the QA/QC sampling results indicate a high level of precision.

Surface Water Data Validation

Tetra Tech conducted data validation for the Main Post Surface Water Sampling. Data was evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, GC/MS instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, ICP-ICS, system monitoring compounds (surrogates), MS/MSDs, laboratory duplicate sample analysis, ICP serial dilution, field duplicates, LCSs, dilution, reextraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits. Data validation packages are provided in Appendix G.

- Tetra Tech conducted data validation of the analytical results for fifteen surface water samples, one field duplicate, one field blank, and one trip blank that were collected at from stream sampling points (abbreviated to "SS" in the sample designations) on December 7, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified due to minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. Metals results were qualified for calibration verification irregularities, blank contamination, a result greater than the linear range of the instrument, and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one trip blank, and one field blank, that were collected on June 22, 2010 as part of the 2nd Quarter 2010 LTM project. Tetra Tech concluded that the overall quality of the data was acceptable. No analytical results were rejected. All data can be used as qualified.

6.0 BACKGROUND METALS EVALUATION

Historically, ground water samples from monitoring wells throughout Fort Monmouth's Main Post and the Charles Wood Area have periodically displayed concentrations of metals that exceed NJDEP GWQS. Some of the metals have been retained as COCs while characterization has continued. However, it has long been believed that the metal detections represent materials derived from the native soil as a background condition in the local region.

Brinkerhoff Environmental Services (2011) noted the likelihood that metal results reflected the presence of high turbidity in samples (see Appendix H). In addition, the analysis of glauconitic clay (see Appendix H) indicates that the clay contains a metal fingerprint that mirrors that found in turbid ground water samples, suggesting the fines from the native clays are the source of the turbidity and that the metals are derived from acid extraction of the metals on those fines when subjected to the preservatives added to the sample vials.

The Army has conducted additional analysis of available data and concludes that the metals heretofore designated as COCs in ground water are, in fact, native materials associated with clay fines in the samples. The following describes the approach taken and the conclusions drawn from the results of the analyses.

6.1 Evaluation Approach

In the past, each site at Fort Monmouth has been evaluated on its own merits with respect to COCs and risk. However, it has become very clear that the apparent metals issue is ubiquitous and would benefit from a base-wide analysis. Pursuant to that, a review was made of all historical groundwater sampling data to help put metal results in perspective. In the Brinkerhoff background analysis (2011), it was concluded that there were no sources for any of the metals observed in ground water, with the possible exception of lead. Because there were potential sources of lead present at Fort Monmouth (but not specifically associated with any individual site), Brinkerhoff chose not to rule out the possibility that some of the metals found in ground water could be the direct result of a release. At the same time, Brinkerhoff found a direct correlation between arsenic concentrations and lead concentrations, despite there being no potential source of arsenic releases. The obvious implication of that finding is that lead, as well as arsenic, arises from its presence in native soil. As a consequence, the Army has focused its analysis primarily on lead.

The review focused on the following areas:

- Nature of apparent sources
- Relationship of metals levels to turbidity
- Extreme variability in field duplicate results
- History of atypical spikes

6.1.1 Nature of Apparent Sources

A review of monitoring data over the life of the environmental restoration program at Fort Monmouth reveals that virtually every monitoring well at one time or another has had a metal concentration that has exceeded NJDEP GWQS. Given the diverse nature of activities and the location of the monitoring wells, this suggests a common factor across sites other than the activities that might have resulted in releases. Specific to lead contamination, sites with heating oil tanks and lime pits are unlikely sources of a release. Not only is lead not present as an additive in heating oil, but the characteristics of the lime pit should reduce the solubility of lead, not increase it. Lead is mobilized by acidity, not by basic conditions.

When the review is expanded to all metals, there is a consistent pattern of observations despite the nature of the Army's activities as seen in Table 6-1. Moreover, the metals observed (antimony – Sb; arsenic – As; beryllium – Be, cadmium – Cd, chromium – Cr; lead – Pb; and nickel – Ni) are all present in glauconitic clay. Metal observations in ground water are consistent, despite the disparate nature of the Army's activities at the sites being monitored.

Table 6-1
Metal Observations in Ground Water Are Consistent, Despite the Disparate Nature of the Army's Activities At the Sites Being Monitored

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
FTMM-14, M-14 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-03, Landfill M-3	Landfill	Main Base, North Central	VOC	Sb, As, Cd, Pb
Building 750	Heating Oil USTs	Main Base. South Central		Sb, As, Be, Cd, Cr, Pb, Ni
FTMM-18, 54, 55, 62	Landfill, USTs, Fuel area	Main Base, North Central	Benzene	Sb, As, Be, Cd, Pb
FTMM-25, Landfill CW-3A	Landfill	Charles Wood, South		Sb, As, Be, Cd, Cr, Pb
FTMM-28, Pesticide Spill Location	Pesticide Spill, USTs Fuel Area	Charles Wood, Central		As, Pb, Cd, Sb, Sl, Th
FTMM-04, Landfill M-4	Landfill	Main Base, West Central		Sb, As, Be, Cd, Pb, Th
FTMM-12, M-12 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-66, Building	Heating Oil	Main Base,	Methyl	Sb, As, Cd, Pb

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
866	AST	South Central	Napthalene, Benzene, BEHP	
FTMM-58, Building 2567	Active Gas Station	Charles Wood, East Central	Tert Butyl Alcohol	Sb, As, Pb
FTMM-56, Buildings 80-166	Heating Oil UST	Main Base, East	Chlordane, DDD, DDE	Sb, As, Be, Cd, Pb, Th
FTMM-22, Building CW-1	Lime Pit	Charles Wood, West	TCE	Sb, As, Pb
FTMM-57, Building 108	Heating Oil UST	Main Base, East		Sb, AS, Pb

6.1.2 Relationship of Metal Levels to Turbidity

Brinkerhoff Environmental Services' *Report on Background Metals* (2011) notes in Section 4.2 that there has been a historic problem with turbid samples and the subsequent dissolution of metals from native soil by the nitric acid preservative used on samples intended for metals analysis. In a background study of the glauconite-rich soil at Fort Monmouth, researchers noted concentrations of 16 mg/kg lead (March 9, 2011 letter from U.S. Army to Larry Quinn). Turbidity is exacerbated by purge techniques in formations with fine soil particles, but can also be a problem with low-flow sampling as noted in Tetra Tech's January 2010 Data Validation Report in which some field duplicates had RPDs for metals that exceeded QC criteria (e.g., 80MW03 on 2/24/2010).

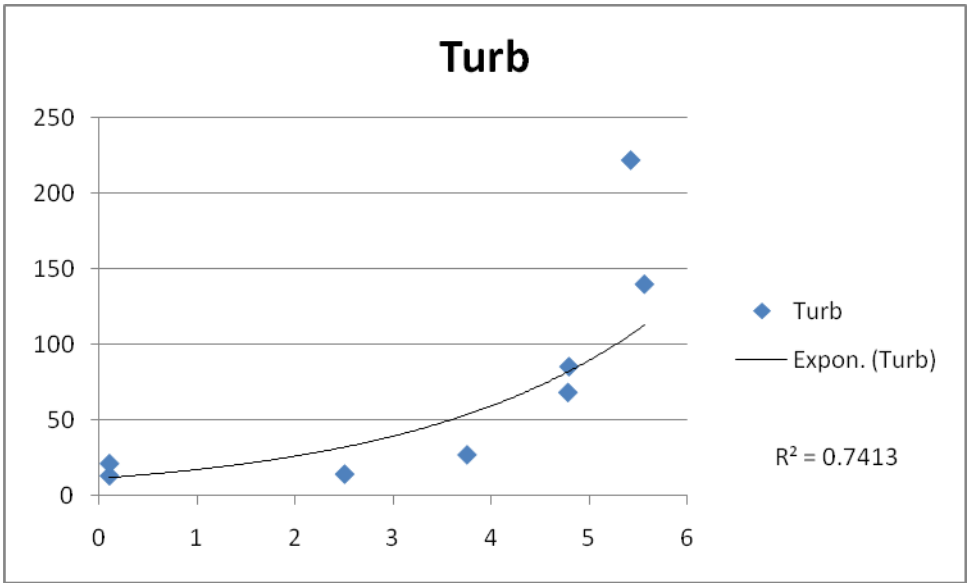
Turbidity data have not been reported for most historic samples. However, turbidity has been measured since implementation of low-flow sampling techniques in 2010. In general, samples should have turbidity < 5 units for a sample to yield results representative of dissolved metals. The data presented in Table 6-2 summarize turbidity levels for samples taken from various sites at Fort Monmouth in 2010. Clearly, turbidity remains a problem, despite the use of low-flow sampling. Occurrence of turbidity in excess of 5 NTU in 2010 samples have continued despite the use of low-flow sampling techniques. Turbidity data for FTMM-28 in the second quarter sampling of 2010 were as follows: MW-01 – 4.48 NTU; MW02 – 38 NTU; MW-03 – 6.14 NTU; and MW-34 – 10.2 NTU. The turbidity data for FTMM-28 for the third quarter of 2010 were as follows: MW-01 – 9.36 NTU; MW02 – 18.3 NTU; MW-03 – 4.12 NTU; and MW-34 – 9.81 NTU.

Table 6-2
Occurrence of Turbidity In Excess of 5 JTU in 2010 Samples Have Continued, Despite Use of Low Flow Sampling Techniques

Site	Turbidity (NTU) **Bold XX** – Value is in excess of 5 NTU										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (Q2)	**9.16**	**10.3**	4.16	**37.4**							
FTMM-03 (Q1)				0.28	**15.6**	4.64	**7.63**	4.83	**12.4**	**10.8**	2.28
FTMM-03 (Q2)				3.61	**11.7**	**10.3**	**6.02**	**11.5**	**7.54**	2.13	1.82
FTMM-18/54/55/62 (Q2)	2.14	**16.8**	1.67	**11.3**		**6.17**	**34.5**	**13.3**			
FTMM-04 (Q1)							3.65	**36.6**	**7.68**	1.43	
FTMM-04 (Q2)							2.81	**24.3**	**6.17**	2.7	
FTMM-66 (Q2, RW wells)	**14.4**	**222**	13.3	**140**	**85.5**	**68.4**	**21.4**	**27.2**			
FTMM-58 (Q1)	**38.1**	**11.5**	**8.67**	**22**	**9.4**	**21.6**	**6.88**				
FTMM-58 (Q2)	0.58	**6.17**	**10.2**	**5.54**	**35.7**	**16.8**	**8.17**				
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12	3.06	**5.65**	1.2	0.75	0.33	4.34	2.05	**5.61**	3.36	**5.22**	**9.72**

When the turbidity is high, there is a direct correlation between turbidity and lead concentrations as is evident from the data from Site FTMM-66 samples collected in May 2010 (Figure 6-1).

Figure 6-1
There is a Direct Correlation Between Turbidity and Lead Concentrations at FTMM-66 Using Low Flow Sampling Techniques



As one would expect, the introduction of low-flow sampling techniques has reduced metal concentrations reported in ground water samples at Fort Monmouth. A comparison of lead concentrations prior to and after implementation of the low-flow techniques is provided in Table 6-3. As is evident, lead concentrations decreased when low flow sampling was implemented. However, as presented in Table 6-2, turbidity issues are still present with low flow sampling and can still cause an apparent elevation in lead levels.

Table 6-3
There Has Been a Clear Reduction in Lead with Use of Low Flow Sampling Techniques, Despite Continued Presence of High Turbidity

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (10/08 to 8/10)	16./6.9	9/4.2	5.4/3.7	8.6/4.7		7.6/6.0					
FTMM-03 (12/08 to 9/10)				ND/1.9	ND/ 4.4	ND/3.7	48/3.3	ND/6.4	ND/3.3	ND/6.2	ND/3.3
Bldg 750 (10/08 to 8/10)	0.9/ND	61/6.5	6.7/ND	1.9/ND							
FTMM-18/54/55/62 283 wells (10/08 to 9/10)					8.1/ND	3.9/ND					
FTMM-18/54/55/62 290 and 296 wells (10/08 to 9/10)	10.7/ND	5.6/1.2	15/3.8*	4.5/4.5	5.7/7.2	5.2/4.5	5/ND	9.2/6			
FTMM-25 (10/08 to 7/10)	5.9/ND	7.2/3.4	8.2/2.4	9/3.5							
FTMM-04							3.5/ND	12/ND	4/ND	6.7/ND	

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
(10/8 to 7/10)											
FTMM-66 (12/8 to 8/10)	5.1/3.7	2.9/1.5	5.2/6.1	ND/ND	28/2.8						
FTMM-58 (11/08 to 9/10)	ND/ND	3.4/ND	1.5/ND	2.2/5.5	30/9.2	1.9/ND					
FTMM-56 (2/09 to 8/10)	3.8/4.7	2.9/ND	5.2/ND	ND/2.8	19/3.6						
FTMM-56 Well 166 (2/09 to 8/10)	7.3/3.4										
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12 (10/8 to 9/10)	10/2.6	4.4/3.2	5.7/5.3	9.8/ND	4.1/4.9	2.9/ND	7.7/6.6	2.9/4.1	4.7/ND	2.1/ND	5.6/2.8
FTMM-12 14MW wells (10/8 to 9/10)				3.7/3.7	1.9/ND	ND/ND	6.2/9.2	1.3/3.6	5.4/ND		

- Average does not include the 1060 value reported in 1/2010 that was an outlier

6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples

In accordance with standard quality control/quality assurance protocol, field duplicate samples were collected throughout the performance of monitoring work at Fort Monmouth. Pursuant to the Quality Assurance Project Plan for Fort Monmouth, whenever samples are found to have a

relative percent difference (RPD) of greater than 25% for metals, the data quality is suspect. An examination of the RPD values for ground water samples at Fort Monmouth reveals that a significant number of the duplicates collected from wells across the installation have RPD values well in excess of 25%.

Table 6-4
A Significant Percentage of the Field Duplicates Collected at Fort Monmouth Yielded RPD for Lead in Excess of the Quality Control/Quality Assurance Threshold Value of 25%

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-57	MW01	11/2000	8.14	15.6	63
		5/2001	4.2	5.33	24
		10/2008	30.8	20.9	38
	MW04	5/2000	ND	67.2	194
		9/2001	2.45	3.65	39
		12/2001	5.03	5.18	2.9
		2/2009	1.71	9.74	140
		6/2009	25.1	22.7	10
		8/2009	5.26	4.04	26
		11/2009	2.98	3.55	17
FTMM-22	MW26	8/1998	ND	149	197
		8/1999	ND	2.89	97
		2/2001	1.47	2.06	33
	MW31	5/2001	10.7	2.65	52
		11/2001	18.3	1.91	32
	MW38	11/2002	6.11	ND	144
	MW281	3/1999	6.22	4.98	22
		5/2000	33.1	ND	188
		11/2001	ND	2.05	69
	MW282	6/1998	5.5	3.9	169
		8/2000	66.6	ND	118
FTMM-03	MW04	6/2010	ND	3.68	85
FTMM-18/54/55/62	290MW01	9/2010	2.48	ND	85
	296MW01	8/2000	3.69	4.43	18
		11/2000	ND	63.3	194
		5/2001	4.07	6.89	51
		3/2009	7.06	5.9	18
		5/2009	ND	9.32	161
	296MW06	8/2001	17	1.34	171
	296MW07	2/2001	3.15	2.76	13

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-25	MW01	8/1999	ND	4.16	122
		11/1999	3.82	3.55	7
		10/4/2000	ND	2.12	72
		10/16/2000	ND	231	198
		5/2002	6.54	1.93	109
		8/2003	3.82	ND	117
	MW02	4/2001	1.89	1.6	17
	MW03	1/1998	16	ND	176
		4/2003	2.65	2.18	19
		10/2005	ND	5.56	139
		7/2009	9.51	ND	162
		1/2010	ND	4.86	132
	MW04	4/2010	3.14	2.82	11
		7/2010	2.53	5.46	73
FTMM-12	MW19	6/2009	6.79	3.97	52
		9/2009	4.72	ND	130
		11/2009	3.11	ND	103
FTMM-66	80MW01	11/2001	19.7	3.08	146
	166MW01	3/2000	4.21	2.93	36
		10/2000	16.4	36.5	76
		4/2001	31	6.44	131
		8/2001	15.9	15.2	5

The presence of turbidity is the most common cause of poor RPD performance when metals are the analyte. Simply put, suspended solids that cause turbidity in water samples are heterogeneous by nature and when the sample is split, there is no way to divide them evenly so that both samples obtain the same amount of solids, let alone an evenly divided sampling of the different solid particle types that may be present. A single particle of mineral origin can have sufficient metal content to dramatically affect the RPD.

6.1.4 Occurrence of Atypical Spikes

Metals generally move slowly in ground water, both because of the slow velocity of the water itself and because of interactions with the soil that retard their movement. As such, time frames are sufficient for dispersion and diffusion to give rise to classic Gaussian plumes that display first order concentration gradients. When samples collected in sequential quarters differ in concentration by more than an order of magnitude, it suggests that at least one of the two values does not represent dissolved metal content and is more likely to be the result of acid extraction from suspended solids in the sample. Atypical spikes noted in historic monitoring results are presented in Table 6-5.

Table 6-5
Historical Data from Fort Monmouth Show Rapid Increases and Decreases in Lead Concentrations That Cannot Be Attributed to Dissolved Metals

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
FTMM-57	MW01	3-9/1999	90	125	11.2
		5-10/2002	6.91	28.3	4.88
		8/2008 – 6/2009	2.45	30.6 and 16.1	2.9
	MW02	7-8/1993		137	ND
		6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW03	6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW04	4-11/1997	24	122	35
		5-11/1998	34.4	99 and 163	7.18
		8-11/2000	13.2	143	1.26
FTMM-22	MW38	11/2000-2/2001		90.8	ND
	MW40	9/2002-2/2003	ND	13.2	ND
Bldg 750	MW01	4/1993-11/1994	ND	23	3.2
		9/1997-3/1998	3.3	12	5
		5-12/1998	ND	14	5.2
		5-11/2000	ND	31.2	ND
		2-8/2004	ND	20.5	ND
	MW02	11/1996-2/1997		23.8	ND
		5-12/1998	ND	69	ND
		12/1998-7/1999	ND	111 and 612	7.84
		5/2000-2/2001	15.7	114 and 68.4	ND
		5-11/2002	5.41	44.8	9.25
		11/2004-4/2005	7	59.2	ND
		8/2008-	ND	232	2.03

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
		3/2009			
	MW03	12/1998-6/1999	ND	17.3	ND
		10/1999-5/2000	ND	19.4	ND
		1-7/2005	ND	22.7	ND
	MW04	11/8-30/1994		201	4.7
		2-8/2001	ND	66.7	2.92
		1-7/2005	ND	33.4	ND
FTMM-18/54/55/62	296MW01	3-8/2000	ND	20.5	4.06
	296MW02	11/1997-5/1998	30	836	16.5
		3-8/2000	6.3	28.3	7.74
		5-12/2002	1.5	177	ND
		2-8/2005	17.3	52	ND
		5-11/2009	ND	36.1	2.73
		11/2009-5/2010	2.73	1060	ND
	296MW04	12/2001-5/2002	5.54	31.4	9.93
	296MW06	5-8/2001	2.18	17	1.34
		11/2003-5/2004	ND	31.8	ND
	296MW07	8/2001-3/2002	5.69	18.2	3.36
		11/2003-5/2004	ND	17.9	ND
		7/2004-2/2005	ND	14.5	ND
	296MW08	5-12/2001	13.1	80.6	16
FTMM-25	MW01	1-3/1998	ND	16	ND
	MW02	10/2001-5/2002	2.37	34.1	1.29
	MW03	8/1999-2/2000	ND	1010	ND
		5-8/2000	2.35	26.5	1.7
	MW04	5-8/2000	ND	104	ND
		10/2000-4/2001	ND	32.4	ND

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
		1-7/2002	1.73	23	7.4
		10/2003-5/2004	6.06	86.6	ND
FTMM-04	MW08	7/2009-1/2010	ND	31.1	ND
FTMM-12	14MW22	10/2008-6/2009	ND	9.96	ND
		6-9/2010	ND	9.23	
FTMM-66	80MW01	6-11/1998	3.3	10.4	2.86
		3-8/2000	3.67	10.4	2.86
		2-8/2005	ND	18.3	6.5
	80MW04	2-8/2005	ND	19.4	ND
	80MW05	1-12/2002	13.4	47.2 and 70.1	4.31
		2-8/2009	ND	28.4	ND
	166MW01	8/1997-2/1998	1.6	15	ND
		6-11/1998	2.3	12.4	4.23
		3-8/2000	2.93	17.3	5.12
		3-9/2003	1.62	10.2	3.43
FTMM-58	MW02	4-1993-3/1994	ND	260	ND
		8/1997-3/1998	ND	20	8
FTMM-56	80MW05	2-8/2009	ND	28.4	ND
	166MW01	6-11/2009	ND	7.25	ND

6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern

The only consistent explanation for lead findings to date (and other metals as well) is that fine particles of glauconitic clay are suspended in many of the samples and yield metals when contacted with the acid preservative used for ground water samples. The applicability of each of these factors to individual sites at Fort Monmouth is summarized in Table 6-6.

Table 6-6
All Sites with Historic Lead Occurrences Have One or More Clear Markers Suggesting Turbidity is the Source of the Lead

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
FTMM-12, M-14 Landfill	ND-9.23 (9/9/2010)			60% (194)	2 (9.96)
FTMM-03, Landfill M-3	ND-8.37 (9/7/2010)	50% (Q1) 62.5% (Q2)	0.59	100% (85)	
Building 750 – Heating Oil UST	ND (8/18/2010)		0.13		18 (612)
FTMM-18, 54, 55, 62 Landfill, USTs, and Fuel Area	ND-8.89 (9/29/2010)	71.4%	0.17 (#283) 0.48 (#290/6)	62.5% (194)	14 (1060)
FTMM-25, Landfill CW-3A	ND-4 (7/26/2010)		0.34	71.4% (198)	7 (110)
FTMM-04, Landfill M-4	ND (7/21/2010)	50% (Q1) 50% (Q2)	0.15	50% (73)	1 (31.1)
FTMM-12, M-12 Landfill	ND-9.23 (9/9/2010)	36.3%	0.56 1 (#14MW)	100% (130)	
FTMM-66, Building 866, Heating Oil AST	ND-7.09 (8/5/2010)	100%	0.36	80% (146)	10 (70.1)
FTMM-58, Building 2567, Gas Station	ND (1/16/2004)	100% (Q1) 87.4% (Q2)	0.47		2 (260)
FTMM-56, Buildings 80-166, Heating	ND-6.43 (8/31/2010)		0.41		2 (28.4)

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
Oil UST					
FTMM-22, Building CW-1, Lime Pit	ND-2.45 (8/24/2010)			91% (197)	2 (90.8)
FTMM-57, Building 108, Heating Oil UST	ND-6.91 (8/19/2010)	75%	0.55	70% (197)	11 (163)

*Based on setting ND samples at 1 ug/kg

**If both duplicates were ND or if one was ND and the other <2 ug/L, the duplicate was not evaluated

Given the weight of evidence, the Army has concluded that metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs. This is further supported by the location of the Wenonah Mount Laurel aquifer, which is approximately 125 feet bgs - too deep to be affected by the presence of these metals near ground surface. In addition, the sensitive receptor survey (Appendix I) indicated no domestic or irrigation wells are close enough to be adversely impacted by COC migration.

7.0 RECEPTOR EVALUATION

7.1 Sensitive Receptor and Well Search

A visual and documentary search of sensitive populations was performed by the Army and their subcontractor to identify potentially sensitive populations within 200 feet of Fort Monmouth's boundaries. The identification of said populations is in accordance with NJDEP statutory requirements. The Receptor Evaluation Report, NJDEP Sensitive Receptor Survey Form, and Sensitive Receptor Survey figure are provided in Appendix I.

Although the identified populations are within 200 feet of Fort Monmouth's boundaries, all of the environmentally-impacted locations are an appreciable distance from the fence line and in all cases exceed the 200-foot buffer established by NJDEP. In addition, site-specific utility maps were reviewed to identify any preferential pathways which could affect site contamination plumes. These maps are provided in Appendix I.

In addition to the sensitive receptors, the Army has included all identified off-site wells within 2,000 feet of Fort Monmouth's perimeter. No production wells were identified within 2,000 feet of Fort Monmouth's boundaries. The majority of off-site wells are monitoring wells associated with various remedial activities. A ground water model has been developed for Fort Monmouth, with the overall ground water flow pattern for the Main Post being easterly with a localized northeasterly component. Fort Monmouth is bounded by surface water bodies to the east and northeast. Domestic and/or irrigation wells to the east or northeast of the Main Post would not be impacted by activities conducted on the Fort Monmouth property.

Surface water bodies interact with ground water at Fort Monmouth. The interaction takes place in three basic ways: streams gain water from inflow of ground water through the streambed, streams lose water to ground water by outflow through the streambed, or both, gaining in some reaches and losing in other reaches. When ground water discharges into a surface water body, the elevation of the ground water table in the vicinity of the surface water body must be higher than the elevation of the stream water surface. Conversely, for surface water to seep to ground water, the elevation of the water table in the vicinity of the stream must be lower than the elevation of the stream water surface. The surface water bodies at Fort Monmouth (Oceanport and Parkers Creeks) may be gaining or losing depending upon the tidal cycle. Throughout the entire tidal cycle however, net results are that ground water inflows into the creeks, albeit at low flow rates. Figures depicting the surface water features, wetland areas, and stream bank stabilization areas in the vicinity of the Site are included in Appendix I.

7.2 Vapor Intrusion (VI) Investigation

The Army evaluated the requirements for a VI investigation in accordance with the NJDEP's Vapor Intrusion (VI) Guidance and *Technical Requirements*. As detailed in the NJDEP VI Guidance, three-stage assessment criteria were utilized to determine the applicability of VI

regulations. Site-specific ground water data from the seven most recent quarterly ground water sampling events were compared to the NJDEP generic VI screening levels.

Concentrations of COCs in ground water do not exceed the generic ground water screening levels (GWSL) presented in the NJDEP VI Guidance within 100 feet (specific to chlorinated solvents) of nearby buildings. According to the decision flow chart for VI, no investigation is required for the M-12 Landfill.

7.3 Baseline Ecological Evaluation (BEE)

Shaw Environmental, Inc. was contracted by the Army to conduct a Baseline Ecological Evaluation (BEE) for Fort Monmouth's Main Post and Charles Wood Areas. Sampling of multiple media was conducted in 2010. The final BEE was submitted in May 2011 and will be updated once comments are resolved with NJDEP.

7.4 Public Notification

In accordance with the Public Notification requirements in the *Technical Requirements* at N.J.A.C. 7:26E-1.4, the Army submitted a request to the NJDEP Site Remediation Program (SRP) dated June 17, 2010 to conduct an *Alternative Public Notification Plan*. This request was approved by the NJDEP in correspondence dated June 24, 2010. Copies of said correspondence are provided in Appendix I.

The *Alternative Public Notification Plan* includes newspaper advertisements being placed in local and county newspapers through the Asbury Park Press and The Link, all public notification documents being sent to the Municipal Clerk for each municipality in which the contaminated site is located, and to the local designated health official. The FTMM also established a local document repository for all reports produced regarding the site remediation areas of concern (AOCs) at Fort Monmouth. The repository is located at the Monmouth County Library in Shrewsbury, New Jersey where all reports are available for public review. All of these reports are also available online at http://www.pica.army.mil/FtMonmouth.

The Fort conducted two Open Houses in January of 2008 and January of 2009, during which times figures and data regarding all of the Fort's site remediation AOCs were on display. Fort environmental personnel were available to answer questions from the public. The Fort will conduct a third Open House should the need arise.

The Fort also operates a Restoration Advisory Board (RAB) which holds quarterly public meetings held by RAB members who are public citizens, not elected officials, selected from the surrounding towns. They review and comment on technical documents and plans relating to ongoing environmental investigations and restoration activities at the Fort. Members serve as liaisons with the community and are available to meet with community members and groups. The meetings are open to the public and notification of all meetings is provided in local

newspapers as well as by mail to all interested parties. All environmental projects subject to the *Technical Requirements* are presented to the RAB via this public forum. Examples of the media release and Affidavit are provided in Appendix I.

8.0 REMEDIAL ACTION PROGRESS

8.1 Costs of Remediation Incurred to Date

The total costs to date for the implementation of the remedial actions performed at the M-12 Landfill are approximately $X,XXX,XXX (Refer to Appendix J). This includes the Preliminary Assessment (PA) phase, SI, Remedial Investigation/Feasibility Study, LTM, and reporting (including RIRs and RIRAs).

8.2 Ground Water Conclusions

During the current reporting period (2nd Quarter 2001 – 3rd Quarter 2010), ground water sampling was conducted quarterly. For the last eight ground water sampling quarters (4th Quarter 2008 – 3rd Quarter 2010), only metals (antimony, arsenic, beryllium, cadmium, lead, and thallium) exceeded NJDEP GWQS. Metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples as discussed in depth in Section 6.0. Therefore, metals are not considered COCs at the M-12 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration. Since no COCs exceed NJDEP GWQS in M-12 Landfill ground water monitoring wells, a Classification Exception Area is not proposed.

8.3 Surface Water Conclusions

During the current reporting period, surface water samples collected at the nearest upstream sampling point (SS-19) from the M-12 Landfill exceeded NJDEP SWQS for arsenic, bromodichloromethane, and lead. Surface water samples collected at the nearest downstream sampling point (SS-09) from the M-12 Landfill exceeded NJDEP SWQS for arsenic and lead. As discussed in depth in Section 6.0, metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in water samples. Thus, metals are not considered COCs at the M-12 Landfill.

Bromodichloromethane was detected during the June 2010 stream sampling event at stream sampling point SS-19. This is considered an isolated detection and is the first time bromodichloromethane has been detected at SS-09 since surface water sampling began at Husky Brook in 3rd Quarter 1996. Thus, bromodichloromethane is not considered a COC.

8.4 Soil Conclusions

SVOCs and metals were detected in M-12 Landfill surface soil samples at concentrations exceeding the NJDEP's NRDCSRS. Metals are naturally-occurring within Fort Monmouth soils, as detailed in Section 6.0 and Appendix H. VOCs, pesticides, and PCBs were detected at concentrations in compliance with the NJDEP NRDCSRS. Given the inactive and undisturbed state of the landfill, the lack of groundwater use at or hydraulically downgradient of the M-12

Landfill, and low COC concentrations in shallow surface soils, No Further Action is recommended for the near-surface soils at the M-12 Landfill.

To address M-12 Landfill near-surface soil samples that do not meet NJDEP soil remediation standards, the Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12 Landfill.

8.5 Sediment Conclusions

With the exception of one anomalous duplicate sample detection of the PCB Arcolor 1254, no PCBs were detected in any of the 25 sediment samples collected from Husky Brook as detailed in Versar's October 2003 *RIR and Sediment Quality Evaluation for the M-14 Landfill*. Based on NJDEP's guidance criteria, PCBs are not impacting sediments in Husky Brook. In addition, no potential exists for long-term, adverse, benthic effects in Husky Brook associated with the M-12 and M-14 Landfills. NFA is warranted for Husky Brook sediments adjacent to the M-12 and M-14 Landfills.

8.6 Recommendations

The following actions are planned:

- Prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-12 Landfill.

- Continue quarterly ground water and surface water sampling until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP.

8.7 RA Schedule

The table/Gant Chart provided in Appendix J is a schedule summary for remedial activities at the M-12 Landfill from the PA phase through the end of the current reporting period and estimated into the future. This table/Gantt chart includes actual costs and schedules to date and estimated/anticipated costs and schedule projected for future activities.

9.0 REFERENCES

Brinkerhoff. 2010. *MODFLOW Ground Water Modeling Report*.

Brinkerhoff. May 2011. Metals Background Evaluation.

Environmental Data Resources, Inc. (EDR). 2010. Off-Site Receptor Report. October 13.

NJDEP. 1999. Technical Requirements for Site Remediation. NJAC 7:26E *et seq*.

NJDEP. 2009. Technical Requirements for Site Remediation. NJAC 7:26E *et seq*.

NJDEP. 2004. Electronic Mail Correspondence – Reduction in Groundwater Monitoring Analyses.

NJDEP. 2007. Division of Remediation Management Response – Comments.

NJDEP. 2009. Letter regarding *Regulatory Approach to Fort Monmouth Landfills*. From Mr. Larry Quinn, Site Manager, NJDEP Bureau of Investigation, Design and Construction. To Mr. Joseph Fallon, FTMM DPW.

NJDEP. November 10, 2010. Letter regarding NJDEP Regulatory Requirements for Fort Monmouth Landfills. From Edward Putnam, Assistant Director, NJDEP. To Mr. Joseph Fallon, Directorate of Public Works, FTMM DPW.

Princeton Hydro. December 5, 2008. Engineering Design Report for U.S. Army – Fort Monmouth Stream Stabilization and Erosion Control Improvements. December 5.

Tetra Tech. December 2010. Offsite Receptor Evaluation Report for the Fort Monmouth Main Post and Charles Wood Areas.

U.S. Army Garrison, Fort Monmouth, DPW. December 1997. Fort Monmouth Standard Sampling Operating Procedure. New Jersey.

U.S. Army Garrison, Fort Monmouth, DPW. March 2011. Glauconitic Investigation Report.

Versar. 2003a. Remedial Investigation Report for the M-12 Landfill.

Versar. 2003b. Remedial Investigation Report and Sediment Quality Evaluation Report for the M-12/M-14 Landfill Site.

Versar. 2003c. Remedial Investigation Report for Near Surface Soils at the M-12 Landfill.

Weston. 1995. Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey.

FIGURES

TABLES

APPENDIX A

Electronic Documents Library

APPENDIX B

MODFLOW Ground Water Modeling Report

Brinkerhoff Environmental Services, Inc.

June 2010

APPENDIX C

Landfill Boundary Delineation and Near-Surface Soil Information

APPENDIX D

Monitoring Well Logs and Records

APPENDIX E

Fort Monmouth Standard Operating Procedures

Item 1:	Decontamination Procedures for Field Equipment, Revised April 14, 2008
Item 2	Field Sampling, Revised March 29, 2010
Item 3:	Geoprobe® Sampling Methods, Revised, March 29, 2010
Item 4:	Monitoring Well Sampling for IRP Sites at Fort Monmouth, Revised April 17, 2008
Item 5:	Low Flow Monitor Well Sampling, Revised October 13, 2010

APPENDIX F

Ground Water Monitoring and Sampling Information

APPENDIX G

Surface Water Monitoring and Sampling Information

APPENDIX H

Background Metals Evaluation

APPENDIX I

Receptor Evaluation and Public Notification

Item 1:	***Offsite Receptor Evaluation Report for Fort Monmouth, Main Post and Charles Wood Area,* Tetra Tech, Inc., November 2, 2010**
Item 2:	**Sensitive Receptor Survey Figure**
Item 3:	**Utility Map**
Item 4:	**Well Search**
Item 5:	**Vapor Intrusion Investigation**
Item 6:	**Public Notification Documents**

APPENDIX J

Costs

Schedule

Gantt Chart

FINAL

Remedial Investigation Report for Near-Surface Soils

M-12 Landfill Site

U. S. Army Installation Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works



October 15, 2003

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, Pennsylvania 19044

Contract No. DACA51-00-D-0004
Delivery Order No. 4

United States Army
Fort Monmouth, New Jersey

Remedial Investigation Report for Near Surface Soils at the M-12 Landfill Site

Fort Monmouth, New Jersey

October 15, 2003

PREPARED BY:



201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044

October 15, 2003

VERSAR PROJECT NO. 104936.4936.104

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
1.1 Objectives 1-1
1.2 Report Organization 1-1
2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING 2-1
2.1 Site Location and Description 2-1
2.2 Site Background 2-1
2.3 Environmental Setting 2-2
2.3.1 Regional and Local Geology 2-2
2.3.2 Hydrogeology 2-4
2.3.3 Soils 2-5
2.3.4 Topography and Surface Drainage 2-5
3.0 SITE ACTIVITIES 3-1
4.0 SOIL ANALYTICAL RESULTS AND COMPLIANCE ANALYSIS 4-1
4.1 Soil Analytical Results 4-1
4.1.1 VOCs 4-1
4.1.2 SVOCs 4-1
4.1.3 Pesticides/PCBs 4-2
4.1.4 Metals 4-2
4.2 Compliance Analysis Method 4-3
4.3 Compliance Analysis 4-5
4.3.1 VOCs 4-5
4.3.2 SVOCs 4-5
4.3.3 Pesticides/PCBs 4-9
4.3.4 Metals 4-9
5.0 CONCLUSIONS AND RECOMMENDATIONS 5-1
6.0 REFERENCES 6-1

TABLE OF CONTENTS (cont.)

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Geologic Map
Figure 2-3 Soil Map of Monmouth County
Figure 3-1 Soil Boring Location Map
Figure 4-1 Compliance Analysis Decision Tree
Figure 4-2 Landfill Contaminant Map – Semi-Volatile Organic Compounds
Figure 4-3 Landfill Contaminant Map – Metals

TABLES

Table 3-1 Soil Sample Collection Summary
Table 4-1 Soil Sampling Results – March 1998 to September 1999
Table 4-2 Borings in Which Detections Exceeded Criteria
Table 4-3 Laboratory Analysis Exceedance Summary
Table 4-4 Compliance Analysis Method Summary
Table 4-5 Compliance Averaging Results
Table 4-6 Compliance Averaging Results Summary

APPENDICES

Appendix A DPW Proposal Letter to NJDEP defining RIR for Near Surface Soils at the M-12 Landfill Site, dated July 7, 1998
Appendix B NJDEP Approval Letter to DPW for RIR for Near Surface Soils at the M-12 Landfill Site, dated August 10, 1998
Appendix C Roy F. Weston, Inc. Site Investigation Report, December 1995; Section 4.2.8 – Landfill 12 (M-12)
Appendix D Soil Boring Samples Laboratory Data Sheets
Appendix E Soil Boring Logs
Appendix F Compliance Average Area Names

EXECUTIVE SUMMARY

To demonstrate compliance equivalence of the existing soil cover over the M-12 Landfill Site with respect to the Solid Waste Disposal Act of 1965, DPW characterized the near-surface soils using 147 borings installed at strategic locations over the site. DPW performed soil borings and obtained soil samples between March 1998 and September 1999. All soil samples were analyzed for Target Compound List (TCL) Organics + 30 parameters and Target Analyte List (TAL) metals. The data that exceeded the laboratory method detection limit (MDL) and/or the New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Cleanup Criteria (RDCSCC) are summarized in table form in this RIR. Where applicable and appropriate, the data were evaluated utilizing the "compliance averaging" approach to determine compliance with NJDEP RDCSCC.

Concentrations of SVOCs and metals were detected exceeding the NJDEP RDCSCC. In all cases, further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions. In most cases, either the calculated compliance average was below the respective RDCSCC or the exceedance was considered marginal. However, to address the exceedances of analytes that did not meet cleanup criteria in the near surface soils, the DPW will incorporate a document equivalent to a Declaration of Environmental Restriction (DER) into the Fort Monmouth Master Plan for soils at the site. The Army is requesting a ***No Further Action*** determination for these parameters. The DER equivalent may be developed for the entire M-12 Landfill Site or be restricted to specific areas of the site and specific analytes, as identified in this document.

Given the inactive and undisturbed status of the landfill, the continued performance of long-term surface water and groundwater monitoring proximate to the M-12 Landfill Site, the minimal potential for environmental and/or human health impacts, the lack of groundwater uses at or downgradient of the site, and the distribution, occurrence, and relatively low concentrations of contaminants of concern (COCs), ***No Further Action*** is recommended for the near-surface soils at the M-12 Landfill Site.

1.0 INTRODUCTION

Versar, Inc. (VERSAR) has been contracted by the United States (U.S.) Army Fort Monmouth, Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare a Remedial Investigation (RI) Report (RIR) for the M-12 Landfill Site. The M-12 Landfill Site is located on the south side of Husky Brook, west of Murphy Drive on the Main Post of Fort Monmouth. This RIR presents a compilation of the results of remedial investigation conducted at the M-12 Landfill Site for near-surface soils, and has been prepared in partial fulfillment of Contract No. DACA 51-00-D-004, Delivery Order No. 0004.

1.1 Objectives

The objective of this RIR is to define shallow soil conditions at the M-12 Landfill Site as proposed in DPW's letter, dated July 7, 1998 and approved by the NJDEP in correspondence dated August 10, 1998 (**Appendix A** and **Appendix B**). The remedial investigation was conducted in accordance with New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (July 1999), NJAC 7:26E, et seq.

The remedial investigation and subsequent preparation of the RIR encompassed the following:

- Characterization of shallow subsurface soils through soil sampling and laboratory analysis.
- Comparison of the soil sample analytical results with the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC).
- Evaluation of each of the analytes found to exceed the RDCSCC using the compliance averaging approach and discussion of site-specific conditions.

1.2 Report Organization

This report is organized to minimize repetition. The findings of the Roy F. Weston, Inc. (Weston) report entitled, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report (December 1995)*, were used as the basis for this remedial investigation program. **Section 2.0** provides background information and a general description of the M-12 Landfill Site located at Fort Monmouth. **Section 3.0** describes and summarizes the soil sampling activities conducted at the M-12 Landfill Site. **Section 4.0** presents the soil sample analytical results and compliance analysis**.** The sample collection information, sample results and analyses presented in this RIR were incorporated into a proprietary relational database designed to manage sample data and eliminate errors in cross-referencing information between data tables in this section. Recommendations are presented in **Section 5.0**. References used to prepare this report are listed in **Section 6.0**.

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING

The following sections describe the site background and environmental setting of the area surrounding Fort Monmouth and the M-12 Landfill Site. Included is a description of the site location, history, current conditions and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Creek, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

The M-12 Landfill was a former historic fill site located on the central portion of the Main Post, south and adjacent to Husky Brook, and west of Murphy Drive. The historic fill, used to raise the elevation of the ground surface in the vicinity of Husky Brook, reportedly contained domestic and industrial wastes and may have been used for the disposal of automobile wastes. The M-12 Landfill consists of two areas, a northeast area and a southwest area. The approximate size of the northeast area is 60,100 feet^2 (1.4 acres). The approximate size of the southwest area is 29,200 feet^2 (0.7 acre). Based on historical research, the period of operation of the fill site was approximately 1950 to 1966.

2.2 Site Background

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Roy F. Weston, Inc. (Weston) to perform a field investigation at Fort Monmouth, New Jersey. This investigation was conducted at two separate areas of Fort Monmouth, the Main Post and the Charles Wood areas. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). A background investigation was conducted by Weston of the 37 sites and eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled, *Investigation of Suspected Hazardous*

Waste Sites at Fort Monmouth, New Jersey (1993). In this background report, additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas, including the M-12 Landfill Site. NJDEP approved the recommendations on April 20, 1995. Additional investigations were also recommended at the Evans Area, and such investigations are being completed under the Base Realignment and Closure (BRAC) program.

The 1995 Weston SI report presents the results of field investigation activities that were performed at 13 sites at the Main Post Area and eight sites at the Charles Wood Area. The results of the investigation of the M-12 Landfill Site are included in the Weston SI report. Initial field investigation activities were performed between November 1994 and March 1995. The field investigation activities included surface geophysical investigations, sediment and surface water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitoring well installation and sampling and tidal monitoring. The Weston SI report was used as the basis for the supplemental remedial investigations described in the following sections of this report.

Weston concluded the following:

- The geophysical surveys (GPR and magnetometer) indicated that the extent of the identified fill and waste material was within the suspected boundaries of the landfill.
- Lithologic data collected from the soil borings indicated that the overburden material consisted of a thin soil cover, approximately 0.3 feet, overlaying fill material consisting of organic debris and coal fragments intermixed with a moderately to poorly sorted olive-green-brown, silty, medium- to fine-grained, sand with clay lenses.

2.3 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding the M-12 Landfill Site. Included is a description of the regional geology of the area surrounding Fort Monmouth, as well as descriptions of the local geology and hydrogeology of the Main Post Area.

2.3.1 Regional and Local Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-12 Landfill Site is located in what is referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 2-2**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and are deposited on

Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. The individual thicknesses for these units varies greatly (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line (e.g., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous-age Red Bank Sand and Tinton Sand, and the Tertiary-age Hornerstown Sand crop out at the Main Post Area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite. The Navesink Formation, which crops out approximately four miles northwest of the Main Post is a dark grayish-black clayey glauconitic sand that conformably overlies the Mount Laurel Sand.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium- to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton Sand is often highly oxidized and iron oxide encrusted (Minard, 1969).

The Hornerstown Sand unconformably overlies the Red Bank Sand and dips to the southeast at 50 to 60 feet per mile. The Hornerstown Sand consists of a dark green clayey glauconitic sand.

The Tertiary-age Kirkwood and Vincentown Formations crop out approximately two miles south of the Main Post. The Vincentown Formation contains a lower member, which is a greenish-gray glauconitic sand, and an upper member, which ranges from sand to clayey limestone. The Kirkwood Formation consists of alternating layers of sand and clay. The Vincentown and Kirkwood Formations dip to the southeast at approximately 20 and 27 feet per mile, respectively (Jablonski, 1968).

As presented in the Weston SI report (relevant portions presented in **Appendix C**), the lithologic logs from monitoring well installations indicate that the lithology at the M-12 Landfill Site consists of a thin soil cover (0.3 feet) underlain by fill material. The

components of the fill materials observed in the borings consist of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay. Groundwater saturation was observed at approximately two feet below ground surface (bgs) across the site. Water-level elevation data collected during the Weston SI indicates that local groundwater flow is consistently to the northwest toward Husky Brook.

2.3.2 Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer in the Main Post Area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2 to 9 feet bgs). Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

Shallow groundwater may be locally influenced within the Main Post Area by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries)
- Topography
- Nature of the fill material within the Main Post Area
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (e.g., streams, lakes)

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis.

2.3.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey, the majority of the Main Post is covered by urban land (**Figure 2-3**). The soil survey described urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post Area:

- DoB Downer sandy loam (with 2 to 5 percent slopes);
- FrB Freehold sandy loam (with 2 to 5 percent slopes);
- FUB Freehold sandy loam/urban land complex (with 0 to 10 percent slopes);
- HV Humaquepts, frequently flooded;
- KvA Kresson loam (with 0 to 5 percent slopes);
- UA Udorthents, smoothed; and
- UD Udorthents – urban land complex (with 0 to 3 percent slopes).

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are one to 10 percent glauconite and are found on uplands. The Humaquepts soils are somewhat poorly- to very poorly-drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and glass. The soils in the vicinity of the M-12 Landfill Site are classified as UA – Udorthents, smoothed, which may also include old sand and gravel pits that have been smoothed or filled in (Weston, 1995).

2.3.4 Topography and Surface Drainage

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities conducted by the military. The land surface at the Main Post is relatively flat and ranges in elevation from approximately 4 feet above mean sea level (amsl) in the east at Oceanport Creek to 32 feet amsl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 feet amsl in elevation.

Surface water runoff from the western part of the Main Post flows into the Lafetra Creek to the north or into Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Husky Brook flows eastward in the southern part of the Main Post from Husky Brook Lake and into Oceanport Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Husky Brook, Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers Creek and Oceanport Creek are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

The M-12 Landfill Site is located on the south side and adjacent to Husky Brook, which flows eastward into Oceanport Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 feet amsl. Surface water runoff from the M-12 Landfill Site is likely to flow northward into Husky Brook.

3.0 SITE ACTIVITIES

The DPW conducted this remedial investigation in accordance that the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 26:E) to characterize near surface soils and assess potential risks to human health or the environment. The remedial investigation activities consisted of the collection of near-surface soil samples at the M-12 Landfill Site. Remedial investigation activities were performed from March 1998 and continued through September 1999. These activities were managed by the Fort Monmouth DPW and performed by TECOM-Vinnell Services (TVS). The details of remedial investigation activities that occurred at the M-12 Landfill Site are described below.

The DPW characterized the near-surface soils at the M-12 Landfill Site by completing 147 borings (B1-B61 and B63-B148) at the site. Samples were collected using a 2-inch Geoprobe® Macrocore sampler. Sampling activities were performed in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (December 1997). A total of 294 soil samples were collected from the 147 borings and were analyzed for the presence of VOCs, SVOCs, pesticides, PCBs and metals. The soil boring locations were located in and around the M-12 Landfill Site as identified in the Weston SI (1995). The locations of the borings were established in a grid-like pattern with approximately 30 feet between borings, both within the previously designated boundaries of the M-12 Landfill Site, as well as in an area extending west along Husky Brook, just beyond the southwest portion of the site.

Each of the soil samples, except those prepared for VOC analysis, were collected between approximately 0 and 12 inches bgs. VOC samples were taken at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time.

Laboratory analyses of the samples collected at the M-12 Landfill Site were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory (Certification No. 13461). The locations of these 147 borings are shown in **Figure 3-1**. A summary of the soil sample collection information and analyses performed is provided in **Table 3-1**. Soil Sample laboratory data sheets are provided in **Appendix D**. Soil boring logs are presented in **Appendix E**. Soil analytical results are discussed in **Section 4.0**.

4.0 SOIL SAMPLING RESULTS AND COMPLIANCE ANALYSIS

A summary of the laboratory analytical results for near-surface soils at the M-12 Landfill Site is discussed below. The results were compared with the Cleanup Standards for Contaminated Sites (N.J.A.C. 7:26D), which was revised with Soil Cleanup Criteria dated May 12, 1999. The soil analytical results are presented by analyte (VOCs, SVOCs, pesticides, PCBs and metals) and compare the analytical data with the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC). Exceedances of the RDCSCC were subjected to further evaluation involving compliance averaging and site-specific considerations. All of the soil sample results in this report are expressed in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).

4.1 Soil Analytical Results

The analytical results from the 294 soil samples collected from 147 borings (B1-B61 and B63-B148) at the M-12 Landfill Site are discussed below, and are included in **Table 4-1**. The soil analytical data is provided in **Appendix D**. The data presented in **Table 4-1** are compared to the RDCSCC. Soil samples from the 147 borings at the M-12 Landfill Site were analyzed for VOCs, SVOCs, pesticides, PCBs and metals. The results that exceeded the respective RDCSCC are shaded and bold in **Table 4-1**.

4.1.1 VOCs

The VOC samples were collected from the M-12 Landfill Site soils at a depth of 24 inches bgs. **Table 4-1** presents the results of laboratory analysis of these analyses. There were no exceedances of the NJDEP RDCSCC for any VOCs at any of the 147 soil borings.

4.1.2 SVOCs

SVOC analyses were conducted on soil samples collected from the 147 soil borings at the M-12 Landfill Site (see **Figure 4-1**). Each of these soil samples was collected at approximately the same depth range, 6 - 12 inches bgs.

Soil cleanup criteria for SVOCs were exceeded in 17 of the 147 soil boring locations. The borings that presented exceedances of SVOCs are listed in **Table 4-2**. Seven SVOCs were detected in site soils at concentrations above the RDCSCC. The seven SVOCs that exceeded the RDCSCC are, with number of exceedances in parentheses, Benzo(a)anthracene (11), Benzo(a)pyrene (51), Benzo(b)fluoranthene (11), Benzo(k)fluoranthene (39), Chrysene (2), Dibenz(a,h)anthracene (5), and Indeno(1,2,3-cd)pyrene (16). **Table 4-3** presents a summary of the results, identifying the maximum, minimum and average exceedances for each of these parameters. A discussion of these exceedances is presented below.

- Benzo(a)anthracene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedance concentrations ranged from a minimum of 1.2 mg/kg (B129) to a maximum of 13 mg/kg (B127). The average exceedance concentration for Benzo(a)anthracene is 4.76 mg/kg.

- Benzo(a)pyrene was detected in 17 site soil samples above the RDCSCC of 0.66 mg/kg. The exceedance concentrations ranged from a minimum of 0.74 mg/kg (B9) to a maximum of 12 mg/kg (B127). The average exceedance concentration for Benzo(a)pyrene is 3.45 mg/kg.

- Benzo(b)fluoranthene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedance concentrations ranged from a minimum of 1.1 mg/kg (B25) to a maximum of 11 mg/kg (B127). The average exceedance concentration for Benzo(b)fluoranthene exceedances is 4.27 mg/kg.

- Benzo(k)fluoranthene was detected in 13 of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedance concentrations ranged from a minimum of 0.99 mg/kg (B42) to a maximum of 9.1 mg/kg (B127). The average exceedance concentration for Benzo(k)fluoranthene is 3.54 mg/kg.

- Chrysene was detected in two site soil samples, B127 (11 mg/kg) and B122 (14 mg/kg), above the RDCSCC of 9.0 mg/kg. The average of these two exceedances is 12.5 mg/kg.

- Dibenz(a,h)anthracene was detected in five of the site soil samples above the RDCSCC of 0.66 mg/kg. The exceedance concentrations ranged from a minimum of 0.68 mg/kg (B114) to a maximum of 2.0 mg/kg (B127). The average of the Dibenz(a,h)anthracene exceedances is 1.02 mg/kg.

- Indeno(1,2,3-cd)pyrene was detected in eight of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedance concentrations ranged from a minimum of 0.96 mg/kg (B110) to a maximum of 4.4 mg/kg (B127). The average exceedance concentration for Indeno(1,2,3-cd)pyrene is 2.21 mg/kg.

4.1.3 Pesticides and PCBs

Pesticide and PCB analyses were conducted on soil samples collected from the 147 borings at the M-12 Landfill Site at depths of approximately 6-12 inches bgs. Each of the 147 borings was analyzed for 19 pesticides and seven PCB compounds. There were no exceedances of the NJDEP RDCSCC for soils for pesticides or PCBs.

4.1.4 Metals

The soil samples from the 147 borings (see **Figure 4-3**) were analyzed for 24 TAL metals. The samples were collected from depths of 6-12 inches. A total of six metals

were detected at concentrations above their respective RDCSCC. The borings that contained exceedances of metals are listed in **Table 4-2**. The six metals that exceeded the RDCSCC in some of the borings are, with the number of exceedances in parentheses, Antimony (1), Arsenic (50), Beryllium (22), Lead (3), Mercury (1) and Zinc (1). **Table 4-3** presents a summary of the results, presenting the maximum, minimum and average exceedances for each of these parameters. A discussion of these exceedances is presented below.

- Antimony was detected above the RDCSCC of 14 mg/kg at one boring, B127 at a concentration of 16.7 mg/kg.

- Arsenic was detected in 50 of the site soil samples above the RDCSCC of 20 mg/kg. The exceedance concentrations ranged from a minimum of 20.1 mg/kg (B95) to a maximum of 51.3 mg/kg (B64). The average exceedance concentration for Arsenic is 27.13 mg/kg.

- Beryllium was detected above the RDCSCC of 2.0 mg/kg in 22 site soil samples. The exceedance concentrations ranged from a minimum of 2.01 mg/kg (B133) to a maximum of 2.81 mg/kg (B107). The average exceedance concentration for Beryllium is 2.30 mg/kg.

- Lead was detected above the RDCSCC of 400 mg/kg in three site soil samples, at borings B21 (404.4 mg/kg), B135 (442 mg/kg), and B139 (1090 mg/kg). The average exceedance concentration for lead is 645.47 mg/kg.

- Mercury was detected above the RDCSCC of 14 mg/kg at one boring, B1 at a concentration of 29.909 mg/kg.

- Zinc was detected above the RDCSCC of 1500 mg/kg at one boring, B139 at a concentration of 6530 mg/kg.

4.2 Compliance Analysis Method

The first step in determining compliance with the NJDEP Technical Requirements for Site Remediation (7:26E) at the M-12 landfill site was to complete the soil sample analysis. The analytical results from the 294 soil samples collected from 147 borings at the M-12 Landfill Site are discussed above, and are included in **Table 4-1**. The method used to determine regulatory compliance is portrayed as a decision tree in **Figure 4-1** and described below.

Figures 4-2 and **4-3** present the analytical results for SVOCs and metals, respectively, by soil boring, for those analytes that exceeded the RDCSCC at one or more locations. There were no exceedances of the RDCSCC for VOCs, Pesticides and PCBs. Therefore, no figures were generated for VOCs, Pesticides and PCBs. The results for each analyte presented are uniquely colored at each boring location, and results that exceed the

respective RDCSCC have been "boxed" in "red." These results are discussed in greater detail in **Section 4.2**. The borings that contained exceedances of the RDCSCC are shown in **Table 4-2**.

For many of the analytical results that exceeded the RDCSCC, the "compliance averaging" approach was then used to determine compliance with NJDEP technical requirements. Compliance averaging uses the average contaminant concentration in an area of concern rather than the contaminant concentration of individual samples for comparison to applicable soil cleanup criteria. The NJDEP policy for compliance averaging is presented in an article entitled, *Compliance Averaging*, from the NJDEP Spring 1995 (Volume 7, No. 2 – Article 08) issue of *Site Remediation News*.

There are several analyte-specific conditions that determine whether compliance averaging can be applied to an exceedance of NJDEP soil cleanup criteria, including maximum analytical results ("ceilings") for individual samples based on the particular NJDEP criterion, as well as specific requirements for arsenic, thallium, beryllium, Benzo(a)pyrene and Dibenz(a,h)anthracene. The compliance analysis method used for the M-12 Landfill Site for each detected analyte that exceeded the respective RDCSCC is summarized in the last column in **Table 4-3**.

Compliance averaging was performed for analytes that met the requirements as summarized in **Figure 4-1**. Compliance average areas were identified within the M-12 Landfill Site based on analyte category (such as VOCs, SVOCs, etc.). The boundaries for these areas of concern were based on areas within that M-12 Landfill Site that presented exceedances of the RDCSCC. Soil borings outside of the areas of concern (referred to as "clean areas" in NJDEP, 1995) presented contaminant concentrations below the RDCSCC and were not included in calculating compliance averages. The boundaries of the compliance average areas are shown in **Figures 4-2** (SVOCs) and **4-3** (metals). The compliance average area names are shown in **Appendix F**. The compliance average area names are defined according to the analyte category, such as "AREA SVOC-1." When calculating average results, the following rules applied:

1) One-half the method detection limit (MDL) was used for non-detect ("ND") results.
2) If a sample was diluted, "ND" results were not used in computing the average.
3) For estimated results (results with "J" qualifiers), the estimated result was used for computing the averages.
4) Compliance averages were calculated as the mean of the results incorporating the "ND" and estimated results described above.

The compliance averages are presented in **Appendix F** and summarized in **Table 4-4**. Compliance averages that were below the NJDEP criteria for a particular analyte justify a recommendation for No Further Action. No Further Action was also justified if a compliance average meets the following conditions for *de minimus* exceedance:

1) Compliance averages met the same analyte-specific conditions that are used for determining whether compliance averaging can be applied,
2) Contaminant concentrations were found within a limited area (for the M-12 Landfill Site, a 15-foot radius, or one-half the grid-spacing, was used for the *de minimus* area determination),
3) Evaluation of contaminant mass, persistence, and location indicated limited potential for significant human health or environmental impacts, and
4) There can only be one *de minimus* exemption per area of concern.

Finally, if an analyte did not meet the *de minimus* conditions, or did not meet the analyte-specific conditions required to perform compliance averaging, additional site-specific parameters were considered as conditions for a No Further Action proposal. If further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions, then the exceedence was considered marginal, or an isolated location and no further action is warranted for the near surface soils. However, to further address the exceedances in the near surface soils, the DPW will incorporate a document equivalent to a Declaration of Environmental Restriction (DER) into the Fort Monmouth Master Plan for soils at the M-12 Landfill Site presenting the exceedance.

4.3 Compliance Analysis

The Compliance analysis method used to evaluate exceedances of the RDCSCC is presented in **Table 4-4,** and the discussion below is presented for VOCs, SVOCs, pesticides and PCBs and metals and compares the analytical data with the RDCSCC. **Table 4-5** summarizes the compliance averaging results. A summary of the compliance analysis for analytes that exceeded the RDCSCC is provided in **Table 4-6**.

4.3.1 VOCs

There were no exceedances of the NJDEP RDCSCC for soils for any VOCs at any of the 147 soil borings. This finding supports a No Further Action determination relative to VOCs in near-surface soils at the M-12 Landfill Site.

4.3.2 SVOCs

Seven SVOCs were detected in site soils at concentrations above their respective RDCSCC: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene and Indeno(1,2,3-cd)pyrene. For the purposes of compliance analysis, the sample locations with exceedances of the RDCSCC for SVOCs have been grouped into three areas, AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3. The borings contained within these compliance average areas are labeled in **Figure 4-2** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

Benzo(a)anthracene (AREA SVOC-1 and AREA SVOC-3)

Benzo(a)anthracene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 1.2 mg/kg to 13 mg/kg (average exceedance concentration of 4.76 mg/kg). Because the maximum concentration of Benzo(a)anthracene was greater than the 10X ceiling limit of 9 mg/kg in AREA SVOC-1, compliance averaging was not appropriate for Benzo(a)anthracene for this area of the M-12 Landfill Site.

Compliance averaging conducted for Benzo(a)anthracene in AREA SVOC-3 yielded the compliance average concentration of 0.864 mg/kg. Therefore, the compliance average for Benzo(a)anthracene in AREA SVOC-3 is below the RDCSCC of 0.9 mg/kg and is not of concern.

Due to the limited presence of Benzo(a)anthracene in the area of the site identified as AREA SVOC-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Benzo(a)anthracene at the M-12 Landfill Site (AREA SVOC-1) and will be protective of human health and the environment. The DER equivalent and compliance averaging approach support a No Further Action determination for Benzo(a)anthracene in near-surface soils at the M-12 Landfill Site.

Benzo(a)pyrene (AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3)

Benzo(a)pyrene was detected in 17 site soil samples above the RDCSCC of 0.66 mg/kg at concentrations ranging from 0.74 mg/kg to 12 mg/kg (average exceedance concentration of 3.45 mg/kg). Compliance averaging was not undertaken for Benzo(a)pyrene because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), NJDEP's guidance regarding the use of multiplication factors (initially applied to RDCSCCs to limit the maximum allowable concentration for individual samples) had changed. NJDEP's current guidance is to apply the multiplication factors to health based criteria, not RDCSCC. The health-based criteria for Benzo(a)pyrene in soil is 0.09 mg/kg. Applying the 10X factor to 0.09 mg/kg means that no individual sample may exceed 0.9 mg/kg for the purposes of compliance averaging. Therefore, compliance averaging was not appropriate for the M-12 Landfill Site with respect to Benzo(a)pyrene.

Due to the limited presence of Benzo(a)pyrene in the areas of the M-12 Landfill Site identified as AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Benzo(a)pyrene at the M-12 Landfill Site (AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3) and will be protective of human health and the environment. The DER equivalent supports a No

Further Action determination for Benzo(a)pyrene in near-surface soils at the M-12 Landfill Site.

Benzo(b)fluoranthene (AREA SVOC-1 and AREA SVOC-3)

Benzo(b)fluoranthene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 1.1 mg/kg to 11 mg/kg (average exceedance concentration of 4.27 mg/kg). Because the maximum concentration of Benzo(b)fluoranthene was greater than the 10X ceiling limit of 9 mg/kg in AREA SVOC-1, compliance averaging was not appropriate for Benzo(b)fluoranthene for this area of the M-12 Landfill Site.

Compliance averaging was conducted for Benzo(b)fluoranthene in AREA SVOC-3 and found to be 0.586 mg/kg. Therefore, the compliance average for Benzo(b)fluoranthene in AREA SVOC-3 is below the RDCSCC of 0.9 mg/kg and is not of concern.

Due to the limited presence of Benzo(b)fluoranthene in the area of the site identified as AREA SVOC-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Benzo(b)fluoranthene at the M-12 Landfill Site (AREA SVOC-1) and will be protective of human health and the environment. The DER equivalent and compliance averaging approach support a No Further Action determination for Benzo(b)fluoranthene in near-surface soils at the M-12 Landfill Site.

Benzo(k)fluoranthene (AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3)

Benzo(k)fluoranthene was detected in 13 of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 0.99 mg/kg to 9.1 mg/kg (average exceedance concentration of 3.54 mg/kg). Based on the soil analytical results, compliance averaging was undertaken for AREA SVOC-1, AREA SVOC-2, and AREA SVOC-3 with the following results:

- Compliance averaging conducted for Benzo(k)fluoranthene in AREA SVOC-1 yielded the compliance average concentration of 1.283 mg/kg. A *de minimus* area could not be determined for Benzo(k)fluoranthene in AREA SVOC-1 due to the number of exceedances and their distribution within this compliance average area.
- Compliance averaging conducted for Benzo(k)fluoranthene in AREA SVOC-2 yielded the compliance average concentration of 0.567 mg/kg. Therefore, the compliance average for Benzo(k)fluoranthene in AREA SVOC-2 is below the RDCSCC of 0.9 mg/kg and is not of concern.
- Compliance averaging conducted for Benzo(k)fluoranthene in AREA SVOC-3 yielded the compliance average concentration of 0.844 mg/kg. Therefore, compliance average for Benzo(k)fluoranthene in AREA SVOC-3 is below the RDCSCC of 0.9 mg/kg and is not of concern.

Due to the limited presence of Benzo(k)fluoranthene in the area of the site identified as AREA SVOC-1 and the compliance averaging results discussed above, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Benzo(k)fluoranthene at the M-12 Landfill Site (AREA SVOC-1) and will be protective of human health and the environment. The DER equivalent and compliance averaging approach support a No Further Action determination for Benzo(k)fluoranthene in near-surface soils at the M-12 Landfill Site.

Chrysene (AREA SVOC-1)

Chrysene was detected in two site soil samples above the RDCSCC of 9.0 mg/kg at concentrations of 11 mg/kg and 14 mg/kg (average exceedance concentration of 12.5 mg/kg). Compliance averaging conducted for Chrysene in AREA SVOC-1 yielded the compliance average concentration of 1.642 mg/kg. Therefore, the compliance average for Chrysene in AREA SVOC-1 is below the RDCSCC of 9 mg/kg and is not of concern. These findings support a No Further Action determination for Chrysene in near-surface soils at the M-12 Landfill Site.

Dibenz(a,h)anthracene (AREA SVOC-1)

Dibenz(a,h)anthracene was detected in five of the site soil samples above the RDCSCC of 0.66 mg/kg at concentrations ranging from 0.68 mg/kg to 2.0 mg/kg (average exceedance concentration of 1.02 mg/kg). Compliance averaging conducted for Dibenz(a,h)anthracene in AREA SVOC-1 yielded the compliance average concentration of 0.720 mg/kg. The compliance average concentration for Dibenz(a,h)anthracene in AREA SVOC-1 is only marginally above the RDCSCC of 0.66 mg/kg and is therefore not of concern. These findings support a No Further Action determination for Dibenz(a,h) anthracene in near-surface soils at the M-12 Landfill Site.

Indeno(1,2,3-cd)pyrene (AREA SVOC-1 and AREA SVOC-3)

Indeno(1,2,3-cd)pyrene was detected in eight of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 0.96 mg/kg to 4.4 mg/kg (average exceedance concentration of 2.21 mg/kg). Based on soil analytical results, compliance averaging was conducted for Indeno(1,2,3-cd)pyrene with the following results:

- Compliance averaging conducted for Indeno(1,2,3-cd)pyrene in AREA SVOC-1 yielded the compliance average concentration of 0.770 mg/kg. Therefore, the compliance average for Indeno(1,2,3-cd)pyrene in AREA SVOC-1 is below the RDCSCC of 0.9 mg/kg and is not of concern.
- Compliance averaging for Indeno(1,2,3-cd)pyrene in AREA SVOC-1 yielded the compliance average concentration of 0.458 mg/kg. Therefore, the compliance average for Indeno(1,2,3-cd)pyrene in AREA SVOC-3 is below the RDCSCC of 0.9 mg/kg and is not of concern.

These findings support a No Further Action determination for Indeno(1,2,3-cd)pyrene in near-surface soils at the M-12 Landfill Site.

4.3.3 Pesticides and PCBs

There were no exceedances of the NJDEP RDCSCC for soils for pesticides and PCBs. This finding supports a No Further Action determination relative to pesticide and PCB soil contamination.

4.3.4 Metals

Six metals were detected at concentrations above their respective RDCSCC: Antimony, Arsenic, Beryllium, Lead, Mercury and Zinc. For the purpose of compliance analysis, the sample locations with exceedances of the RDCSCC for metals have been grouped into two areas, AREA METALS-1 and AREA METALS-2. The borings contained within these compliance average areas are labeled in **Figure 4-3** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

Antimony (AREA METALS-1)

Antimony was detected above the RDCSCC of 14 mg/kg at one boring at a concentration of 16.7 mg/kg. Compliance averaging conducted for Antimony in AREA METALS-1 yielded the compliance average concentration of 0.488 mg/kg. Therefore, the compliance average for Antimony is below the RDCSCC of 14 mg/kg and is not of concern. These findings support a No Further Action determination for Antimony in near-surface soils at the M-12 Landfill Site.

Arsenic (AREA METALS-1 and AREA METALS-2)

Arsenic was detected in 50 of the site soil samples above the RDCSCC of 20 mg/kg at concentrations ranging from 20.1 mg/kg to 51.3 mg/kg (average exceedance concentration of 27.13 mg/kg). Compliance averaging was not undertaken for Arsenic because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), the 20 mg/kg RDCSCC for arsenic is already 50 times higher than the health based number for arsenic (0.4 mg/kg). Many of these samples also exceeded the site-specific maximum background concentration for Arsenic in soils (Weston, 1995) of 22.9 mg/kg.

Due to the distribution of Arsenic in the areas of the M-12 Landfill Site identified as AREA METALS-1 and AREA METALS-2 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Arsenic at the M-12 Landfill Site (AREA METALS-1 and AREA METALS-2) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Arsenic in near-surface soils at the M-12 Landfill Site.

Beryllium (AREA METALS-1)

Beryllium was detected above the RDCSCC of 2.0 mg/kg in 22 site soil samples at concentrations ranging from 2.01 mg/kg to 2.81 mg/kg (average exceedance concentration of 2.30 mg/kg). Compliance averaging was not undertaken for Beryllium because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), compliance averaging is not appropriate for soil samples that present Beryllium concentrations that exceed 2 mg/kg.

Due to the limited presence of Beryllium in the areas of the M-12 Landfill Site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Beryllium at the M-12 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Beryllium in near-surface soils at the M-12 Landfill Site.

Lead (AREA METALS-1 and AREA METALS-2)

Lead was detected above the RDCSCC of 400 mg/kg in three site soil samples at concentrations ranging from 404.4 mg/kg to 1090 mg/kg (average exceedance concentration of 645.47 mg/kg). Because the maximum concentration of Lead was greater than the 2X ceiling limit of 800 mg/kg in AREA METALS-1, compliance averaging was not appropriate for Lead for this area of the M-12 Landfill Site.

Compliance averaging conducted for Lead in AREA METALS-2 yielded the compliance average concentration of 76.784 mg/kg. Therefore, the compliance average for Lead in AREA METALS-2 is below the RDCSCC of 400 mg/kg and is not of concern.

Due to the limited presence of Lead in the area of the site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Lead at the M-12 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent and compliance averaging approach support a No Further Action determination for Lead in near-surface soils at the M-12 Landfill Site.

Mercury (AREA METALS-2)

Mercury was detected above the RDCSCC of 14 mg/kg at one boring at a concentration of 29.909 mg/kg. Compliance averaging conducted for Mercury in AREA METALS-2 yielded the compliance average concentration of 2.005 mg/kg. Therefore, the compliance average for Mercury in AREA METALS-2 is below the RDCSCC of 14 mg/kg and is not

of concern. These findings support a No Further Action determination relative to mercury in near-surface soils at the M-12 Landfill Site.

Zinc (AREA METALS-1)

Zinc was detected above the RDCSCC of 1,500 mg/kg at one boring at a concentration of 6530 mg/kg. Because the maximum concentration of Zinc was greater than the 2X ceiling limit of 3000 mg/kg in AREA METALS-1, compliance averaging was not appropriate for Zinc for this area of the M-12 Landfill Site.

Due to the limited presence of Zinc in the area of the site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedances of Zinc at the M-12 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Zinc in near-surface soils at the M-12 Landfill Site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

To demonstrate compliance equivalence of the existing soil cover over the M-12 Landfill Site with respect to the Solid Waste Disposal Act of 1965, DPW characterized the near-surface soils using 147 borings from strategic locations over the site. DPW installed soil borings and obtained soil samples between March 1998 and September 1999. All soil samples were analyzed for Target Compound List (TCL) Organics + 30 parameters and Target Analyte List (TAL) metals. The data that exceeded the laboratory method detection limit (MDL) and/or the New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Cleanup Criteria (RDCSCC) are summarized in table form in this RIR. Where applicable and appropriate, the data were evaluated utilizing the "compliance averaging" approach to determine compliance with NJDEP RDCSCC. The conclusions and recommendations of the evaluation of analytical results from the near-surface soils site characterization are provided below.

As discussed in **Section 4.1**, concentrations of SVOCs and metals were detected exceeding the NJDEP RDCSCC. **Table 4-6** provides a summary of the compliance analysis discussed in this RIR. In all cases, further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions. In most cases, either the calculated compliance average was below the respective RDCSCC or the exceedance was considered marginal (e.g., within 1 to 2 mg/kg of the RDCSCC). However, to address the exceedances of analytes that did not meet cleanup requirements in the near surface soils, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan for soils containing these exceedances. The Army is therefore requesting a ***No Further Action*** for these parameters. The DER equivalent may be developed for the entire M-12 Landfill Site or be restricted to the following areas and analytes (see **Figures 4-2** and **4-3** for the boundaries of these areas):

- AREA SVOC-1: Benzo(a)anthracene, Benzo(a)pyrene, and Benzo(b)fluoranthene
- AREA SVOC-2: Benzo(a)pyrene
- AREA SVOC-3: Benzo(a)pyrene
- AREA METALS-1: Arsenic, Beryllium, Lead, and Zinc
- AREA METALS-2: Arsenic

Given the inactive and undisturbed status of the landfill, the performance of long-term surface water and groundwater monitoring proximate to the M-12 Landfill Site, the negligible impacts reported to-date, the lack of groundwater use at or downgradient of the M-12 Landfill Site and the relatively low levels of COCs in the shallow surface soils across the site, No Further Action is recommended for the near-surface soils at the M-12 Landfill Site.

6.0 REFERENCES

Brown, G.A. and O.S. Zapecza. 1990. *Results of Test Drilling in Howell Township, Monmouth County, New Jersey.* USGS, West Trenton, NJ.

Cosulich. 1981. *Engineering Design to Accompany Registration Statement, Fort Monmouth, Solid Waste Landfill*. W.F. Cosulich Associates. May 1981.

Jablonski, L.A. 1968, *Groundwater Resources of Monmouth County, New Jersey.* USGS Special Report 23. USGS, Washington, DC.

Minard, J.P. 1969. *Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey*. U.S. Government Printing Office, Washington, DC.

New Jersey Geological Survey Map, 1994

NJDEP (New Jersey Department of Environmental Protection). *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq.

NJDEP, *Site Remediation News*, (Spring 1995),Vol. 7, No. 2.

Soil Survey of Monmouth County, New Jersey, USDA Soil Conservation Service, 1989.

USATHAMA (U.S. Army Toxic and Hazardous Materials Agency), 1980. *Installation Assessment of Fort Monmouth*. Report 171. May 1980.

USEPA (U.S. Environmental Protection Agency) Code of Federal Regulations. *Solid Waste Disposal Act of 1965* (Pub. L. 89-272) as amended by the *Resource Recovery Act of 1970* (Pub. L. 91-512)

USGS (U.S. Geological Survey). Long Branch Quadrangle Map, 1981

WESTON (Roy F. Weston, Inc.) 1993. *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*.

WESTON (Roy F. Weston, Inc.) *Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*. December 1995.

Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

TABLES

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B01	B01 (6-12")	3420.01	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B01	B01 (24")	3420.02	24"	3/19/1998	Soil	VOCs	Method 8260
B02	B02 (6-12")	3420.03	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B02	B02 (24")	3420.04	24"	3/19/1998	Soil	VOCs	Method 8260
B03	B03 (6-12")	3420.05	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B03	B03 (24")	3420.06	24"	3/19/1998	Soil	VOCs	Method 8260
B04	B04 (6-12")	3420.07	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B04	B04 (24")	3420.08	24"	3/19/1998	Soil	VOCs	Method 8260
B05	B05 (6-12")	3420.09	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B05	B05 (24")	3420.10	24"	3/19/1998	Soil	VOCs	Method 8260
B06	B06 (4-10")	3420.11	4-10"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B06	B06 (24")	3420.12	24"	3/19/1998	Soil	VOCs	Method 8260
B07	B07 (6-12")	3420.13	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B07	B07 (24")	3420.14	24"	3/19/1998	Soil	VOCs	Method 8260
B08	B08 (6-12")	3420.15	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B08	B08 (24")	3420.16	24"	3/19/1998	Soil	VOCs	Method 8260
B09	B09 (6-12")	3420.17	6-12"	3/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B09	B09 (24")	3420.18	24"	3/19/1998	Soil	VOCs	Method 8260
B10	B10 (6-12")	3424.02	6-12"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B10	B10 (24")	3424.03	24"	3/20/1998	Soil	VOCs	Method 8260
B11	B11 (5-11")	3424.04	5-11"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B11	B11 (24")	3424.05	24"	3/20/1998	Soil	VOCs	Method 8260
B12	B12 (6-12")	3424.06	6-12"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B12	B12 (24")	3424.07	24"	3/20/1998	Soil	VOCs	Method 8260
B13	B13 (6-12")	3424.08	6-12"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B13	B13 (24")	3424.09	24"	3/20/1998	Soil	VOCs	Method 8260
B14	B14 (3-9")	3424.10	3-9"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B14	B14 (24")	3424.11	24"	3/20/1998	Soil	VOCs	Method 8260
B15	B15 (2-8")	3424.12	2-8"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B15	B15 (24")	3424.13	24"	3/20/1998	Soil	VOCs	Method 8260
B16	B16 (2-8")	3424.14	2-8"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B16	B16 (24")	3424.15	24"	3/20/1998	Soil	VOCs	Method 8260
B17	B17 (6-12")	3424.16	6-12"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B17	B17 (24")	3424.17	24"	3/20/1998	Soil	VOCs	Method 8260
B18	B18 (3-9")	3424.18	3-9"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B18	B18 (24")	3424.19	24"	3/20/1998	Soil	VOCs	Method 8260
B19	B19 (2-8")	3424.20	2-8"	3/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B19	B19 (24")	3424.21	24"	3/20/1998	Soil	VOCs	Method 8260
B20	B20 (6-12")	3425.02	6-12"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B20	B20 (24")	3425.03	24"	3/23/1998	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B21	B21 (3-9")	3425.04	3-9"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B21	B21 (24")	3425.05	24"	3/23/1998	Soil	VOCs	Method 8260
B22	B22 (3-9")	3425.06	3-9"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B22	B22 (24")	3425.07	24"	3/23/1998	Soil	VOCs	Method 8260
B23	B23 (3-9")	3425.08	3-9"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B23	B23 (24")	3425.09	24"	3/23/1998	Soil	VOCs	Method 8260
B24	B24 (3-9")	3425.10	3-9"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B24	B24 (24")	3425.11	24"	3/23/1998	Soil	VOCs	Method 8260
B25	B25 (6-12")	3425.12	6-12"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B25	B25 (24")	3425.13	24"	3/23/1998	Soil	VOCs	Method 8260
B26	B26 (2-8")	3425.14	2-8"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B26	B26 (24")	3425.15	24"	3/23/1998	Soil	VOCs	Method 8260
B27	B27 (4-10")	3425.16	4-10"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B27	B27 (24")	3425.17	24"	3/23/1998	Soil	VOCs	Method 8260
B28	B28 (4-10")	3425.18	4-10"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B28	B28 (24")	3425.19	24"	3/23/1998	Soil	VOCs	Method 8260
B29	B29 (6-12")	3425.20	6-12"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B29	B29 (24")	3425.21	24"	3/23/1998	Soil	VOCs	Method 8260
B30	B30 (2-8")	3425.22	2-8"	3/23/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B30	B30 (24")	3425.23	24"	3/23/1998	Soil	VOCs	Method 8260
B31	B31 (2-8")	3428.02	2-8"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B31	B31 (24")	3428.03	24"	3/24/1998	Soil	VOCs	Method 8260
B32	B32 (3-9")	3428.04	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B32	B32 (24")	3428.05	24"	3/24/1998	Soil	VOCs	Method 8260
B33	B33 (3-9")	3428.06	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B33	B33 (24")	3428.07	24"	3/24/1998	Soil	VOCs	Method 8260
B34	B34 (4-10")	3428.08	4-10"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B34	B34 (24")	3428.09	24"	3/24/1998	Soil	VOCs	Method 8260
B35	B35 (3-9")	3428.10	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B35	B35 (24")	3428.11	24"	3/24/1998	Soil	VOCs	Method 8260
B36	B36 (3-9")	3428.12	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B36	B36 (24")	3428.13	24"	3/24/1998	Soil	VOCs	Method 8260
B37	B37 (3-9")	3428.14	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B37	B37 (24")	3428.15	24"	3/24/1998	Soil	VOCs	Method 8260
B38	B38 (3-9")	3428.16	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B38	B38 (24")	3428.17	24"	3/24/1998	Soil	VOCs	Method 8260
B39	B39 (3-9")	3428.18	3-9"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B39	B39 (24")	3428.19	24"	3/24/1998	Soil	VOCs	Method 8260
B40	B40 (6-12")	3428.20	6-12"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B40	B40 (24")	3428.21	24"	3/24/1998	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B41	B41 (6-12")	3428.22	6-12"	3/24/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B41	B41 (24")	3428.23	24"	3/24/1998	Soil	VOCs	Method 8260
B42	B42 (6-12")	3432.02	6-12"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B42	B42 (24")	3432.03	24"	3/25/1998	Soil	VOCs	Method 8260
B43	B43 (6-12")	3432.04	6-12"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B43	B43 (24")	3432.05	24"	3/25/1998	Soil	VOCs	Method 8260
B44	B44 (2-8")	3432.06	2-8"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B44	B44 (24")	3432.07	24"	3/25/1998	Soil	VOCs	Method 8260
B45	B45 (3-9")	3432.08	3-9"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B45	B45 (24")	3432.09	24"	3/25/1998	Soil	VOCs	Method 8260
B46	B46 (6-12")	3432.10	6-12"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B46	B46 (24")	3432.11	24"	3/25/1998	Soil	VOCs	Method 8260
B47	B47 (5-11")	3432.12	5-11"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B47	B47 (24")	3432.13	24"	3/25/1998	Soil	VOCs	Method 8260
B48	B48 (6-12")	3432.14	6-12"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B48	B48 (24")	3432.15	24"	3/25/1998	Soil	VOCs	Method 8260
B49	B49 (3-9")	3432.16	3-9"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B49	B49 (24")	3432.17	24"	3/25/1998	Soil	VOCs	Method 8260
B50	B50 (4-10")	3432.18	4-10"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B50	B50 (24")	3432.19	24"	3/25/1998	Soil	VOCs	Method 8260
B51	B51 (3-9")	3432.20	3-9"	3/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B51	B51 (24")	3432.21	24"	3/25/1998	Soil	VOCs	Method 8260
B52	B52 (6-12")	4748.02	6-12"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B52	B52 (24")	4748.03	24"	8/26/1999	Soil	VOCs	Method 8260
B53	B53 (4-10")	4748.04	4-10"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B53	B53 (24")	4748.05	24"	8/26/1999	Soil	VOCs	Method 8260
B54	B54 (2-8")	4748.06	2-8"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B54	B54 (24")	4748.07	24"	8/26/1999	Soil	VOCs	Method 8260
B55	B55 (6-12")	4748.08	6-12"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B55	B55 (24")	4748.09	24"	8/26/1999	Soil	VOCs	Method 8260
B56	B56 (6-12")	4748.10	6-12"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B56	B56 (24")	4748.11	24"	8/26/1999	Soil	VOCs	Method 8260
B57	B57 (6-12")	4748.12	6-12"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B57	B57 (24")	4748.13	24"	8/26/1999	Soil	VOCs	Method 8260
B58	B58 (4-11")	4748.14	4-11"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B58	B58 (24")	4748.15	24"	8/26/1999	Soil	VOCs	Method 8260
B59	B59 (3-9")	4748.16	3-9"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B59	B59 (24")	4748.17	24"	8/26/1999	Soil	VOCs	Method 8260
B60	B60 (6-12")	4748.18	6-12"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B60	B60 (24")	4748.19	24"	8/26/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B61	B61 (4-10")	4748.20	4-10"	8/26/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B61	B61 (24")	4748.21	24"	8/26/1999	Soil	VOCs	Method 8260
B63	B63 (5-11")	4754.02	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B63	B63 (24")	4754.03	24"	8/27/1999	Soil	VOCs	Method 8260
B64	B64 (6-12")	4754.04	6-12"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B64	B64 (24")	4754.05	24"	8/27/1999	Soil	VOCs	Method 8260
B65	B65 (5-11")	4754.06	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B65	B65 (24")	4754.07	24"	8/27/1999	Soil	VOCs	Method 8260
B66	B66 (5-11")	4754.08	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B66	B66 (24")	4754.09	24"	8/27/1999	Soil	VOCs	Method 8260
B67	B67 (6-12")	4754.10	6-12"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B67	B67 (24")	4754.11	24"	8/27/1999	Soil	VOCs	Method 8260
B68	B68 (5-11")	4754.12	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B68	B68 (24")	4754.13	24"	8/27/1999	Soil	VOCs	Method 8260
B69	B69 (5-11")	4754.14	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B69	B69 (24")	4754.15	24"	8/27/1999	Soil	VOCs	Method 8260
B70	B70 (0-6")	4754.16	0-6"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B70	B70 (24")	4754.17	24"	8/27/1999	Soil	VOCs	Method 8260
B71	B71 (5-11")	4754.18	5-11"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B71	B71 (24")	4754.19	24"	8/27/1999	Soil	VOCs	Method 8260
B72	B72 (7-13")	4754.20	7-13"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B72	B72 (24")	4754.21	24"	8/27/1999	Soil	VOCs	Method 8260
B73	B73 (6-12")	4754.22	6-12"	8/27/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B73	B73 (24")	4754.23	24"	8/27/1999	Soil	VOCs	Method 8260
B74	B74 (6-12")	4760.02	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B74	B74 (24")	4760.03	24"	8/30/1999	Soil	VOCs	Method 8260
B75	B75 (6-12")	4760.04	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B75	B75 (24")	4760.05	24"	8/30/1999	Soil	VOCs	Method 8260
B76	B76 (3-9")	4760.06	3-9"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B76	B76 (24")	4760.07	24"	8/30/1999	Soil	VOCs	Method 8260
B77	B77 (6-12")	4760.08	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B77	B77 (24")	4760.09	24"	8/30/1999	Soil	VOCs	Method 8260
B78	B78 (6-12")	4760.10	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B78	B78 (24")	4760.11	24"	8/30/1999	Soil	VOCs	Method 8260
B79	B79 (3-9")	4760.12	3-9"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B79	B79 (24")	4760.13	24"	8/30/1999	Soil	VOCs	Method 8260
B80	B80 (6-12")	4760.14	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B80	B80 (24")	4760.15	24"	8/30/1999	Soil	VOCs	Method 8260
B81	B81 (6-12")	4760.16	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B81	B81 (24")	4760.17	24"	8/30/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B82	B82 (6-12")	4760.18	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B82	B82 (24")	4760.19	24"	8/30/1999	Soil	VOCs	Method 8260
B83	B83 (6-12")	4760.20	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B83	B83 (24")	4760.21	24"	8/30/1999	Soil	VOCs	Method 8260
B84	B84 (6-12")	4760.22	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B84	B84 (24")	4760.23	24"	8/30/1999	Soil	VOCs	Method 8260
B85	B85 (4-10")	4760.24	4-10"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B85	B85 (24")	4760.25	24"	8/30/1999	Soil	VOCs	Method 8260
B86	B86 (6-12")	4760.26	6-12"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B86	B86 (24")	4760.27	24"	8/30/1999	Soil	VOCs	Method 8260
B87	B87 (5-11")	4760.28	5-11"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B87	B87 (24")	4760.29	24"	8/30/1999	Soil	VOCs	Method 8260
B88	B88 (5-11")	4760.30	5-11"	8/30/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B88	B88 (24")	4760.31	24"	8/30/1999	Soil	VOCs	Method 8260
B89	B89 (3-9")	4762.02	3-9"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B89	B89 (24")	4762.03	24"	8/31/1999	Soil	VOCs	Method 8260
B90	B90 (6-12")	4762.04	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B90	B90 (24")	4762.05	24"	8/31/1999	Soil	VOCs	Method 8260
B91	B91 (4-10")	4762.06	4-10"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B91	B91 (24")	4762.07	24"	8/31/1999	Soil	VOCs	Method 8260
B92	B92 (6-12")	4762.08	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B92	B92 (24")	4762.09	24"	8/31/1999	Soil	VOCs	Method 8260
B93	B93 (2-8")	4762.10	2-8"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B93	B93 (24")	4762.11	24"	8/31/1999	Soil	VOCs	Method 8260
B94	B94 (4-10")	4762.12	4-10"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B94	B94 (24")	4762.13	24"	8/31/1999	Soil	VOCs	Method 8260
B95	B95 (6-12")	4762.14	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B95	B95 (24")	4762.15	24"	8/31/1999	Soil	VOCs	Method 8260
B96	B96 (6-12")	4762.16	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B96	B96 (24")	4762.17	24"	8/31/1999	Soil	VOCs	Method 8260
B97	B97 (6-12")	4762.18	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B97	B97 (24")	4762.19	24"	8/31/1999	Soil	VOCs	Method 8260
B98	B98 (3-9")	4762.20	3-9"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B98	B98 (24")	4762.21	24"	8/31/1999	Soil	VOCs	Method 8260
B99	B99 (4-10")	4762.22	4-10"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B99	B99 (24")	4762.23	24"	8/31/1999	Soil	VOCs	Method 8260
B100	B100 (6-12")	4762.24	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B100	B100 (24")	4762.25	24"	8/31/1999	Soil	VOCs	Method 8260
B101	B101 (6-12")	4762.26	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B101	B101 (24")	4762.27	24"	8/31/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B102	B102 (6-12")	4762.28	6-12"	8/31/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B102	B102 (24")	4762.29	24"	8/31/1999	Soil	VOCs	Method 8260
B103	B103 (6-12")	4774.02	6-12"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B103	B103 (24")	4774.03	24"	9/7/1999	Soil	VOCs	Method 8260
B104	B104 (3-9")	4774.04	3-9"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B104	B104 (24")	4774.05	24"	9/7/1999	Soil	VOCs	Method 8260
B105	B105 (0-6")	4774.06	0-6"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B105	B105 (24")	4774.07	24"	9/7/1999	Soil	VOCs	Method 8260
B106	B106 (0-6")	4774.08	0-6"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B106	B106 (24")	4774.09	24"	9/7/1999	Soil	VOCs	Method 8260
B107	B107 (4-10")	4774.10	4-10"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B107	B107 (24")	4774.11	24"	9/7/1999	Soil	VOCs	Method 8260
B108	B108 (5-11")	4774.12	5-11"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B108	B108 (24")	4774.13	24"	9/7/1999	Soil	VOCs	Method 8260
B109	B109 (6-12")	4774.14	6-12"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B109	B109 (24")	4774.15	24"	9/7/1999	Soil	VOCs	Method 8260
B110	B110 (9-15")	4774.16	9-15"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B110	B110 (24")	4774.17	24"	9/7/1999	Soil	VOCs	Method 8260
B111	B111 (3-9")	4774.18	3-9"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B111	B111 (24")	4774.19	24"	9/7/1999	Soil	VOCs	Method 8260
B112	B112 (6-12")	4774.20	6-12"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B112	B112 (24")	4774.21	24"	9/7/1999	Soil	VOCs	Method 8260
B113	B113 (6-12")	4774.22	6-12"	9/7/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B113	B113 (24")	4774.23	24"	9/7/1999	Soil	VOCs	Method 8260
B114	B114 (4-10")	4777.02	4-10"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B114	B114 (24")	4777.03	24"	9/8/1999	Soil	VOCs	Method 8260
B115	B115 (6-12")	4777.04	6-12"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B115	B115 (24")	4777.05	24"	9/8/1999	Soil	VOCs	Method 8260
B116	B116 (0-6")	4777.06	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B116	B116 (24")	4777.07	24"	9/8/1999	Soil	VOCs	Method 8260
B117	B117 (4-10")	4777.08	4-10"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B117	B117 (24")	4777.09	24"	9/8/1999	Soil	VOCs	Method 8260
B118	B118 (4-10")	4777.10	4-10"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B118	B118 (24")	4777.11	24"	9/8/1999	Soil	VOCs	Method 8260
B119	B119 (0-6")	4777.12	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B119	B119 (24")	4777.13	24"	9/8/1999	Soil	VOCs	Method 8260
B120	B120 (6-12")	4777.14	6-12"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B120	B120 (24")	4777.15	24"	9/8/1999	Soil	VOCs	Method 8260
B121	B121 (0-6")	4777.16	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B121	B121 (24")	4777.17	24"	9/8/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B122	B122 (0-6")	4777.18	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B122	B122 (24")	4777.19	24"	9/8/1999	Soil	VOCs	Method 8260
B123	B123 (0-6")	4777.20	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B123	B123 (24")	4777.21	24"	9/8/1999	Soil	VOCs	Method 8260
B124	B124 (0-6")	4777.22	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B124	B124 (24")	4777.23	24"	9/8/1999	Soil	VOCs	Method 8260
B125	B125 (0-6")	4777.24	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B125	B125 (24")	4777.25	24"	9/8/1999	Soil	VOCs	Method 8260
B126	B126 (0-6")	4777.26	0-6"	9/8/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B126	B126 (24")	4777.27	24"	9/8/1999	Soil	VOCs	Method 8260
B127	B127 (0-6")	4790.02	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B127	B127 (24")	4790.03	24"	9/15/1999	Soil	VOCs	Method 8260
B128	B128 (0-6")	4790.04	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B128	B128 (24")	4790.05	24"	9/15/1999	Soil	VOCs	Method 8260
B129	B129 (0-6")	4790.06	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B129	B129 (24")	4790.07	24"	9/15/1999	Soil	VOCs	Method 8260
B130	B130 (0-6")	4790.08	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B130	B130 (24")	4790.09	24"	9/15/1999	Soil	VOCs	Method 8260
B131	B131 (0-6")	4790.10	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B131	B131 (24")	4790.11	24"	9/15/1999	Soil	VOCs	Method 8260
B132	B132 (0-6")	4790.12	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B132	B132 (24")	4790.13	24"	9/15/1999	Soil	VOCs	Method 8260
B133	B133 (0-6")	4790.14	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B133	B133 (24")	4790.15	24"	9/15/1999	Soil	VOCs	Method 8260
B134	B134 (0-6")	4790.16	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B134	B134 (24")	4790.17	24"	9/15/1999	Soil	VOCs	Method 8260
B135	B135 (0-6")	4790.18	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B135	B135 (24")	4790.19	24"	9/15/1999	Soil	VOCs	Method 8260
B136	B136 (0-6")	4790.20	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B136	B136 (24")	4790.21	24"	9/15/1999	Soil	VOCs	Method 8260
B137	B137 (0-6")	4790.22	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B137	B137 (24")	4790.23	24"	9/15/1999	Soil	VOCs	Method 8260
B138	B138 (0-6")	4790.24	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B138	B138 (24")	4790.25	24"	9/15/1999	Soil	VOCs	Method 8260
B139	B139 (0-6")	4790.26	0-6"	9/15/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B139	B139 (24")	4790.27	24"	9/15/1999	Soil	VOCs	Method 8260
B140	B140 (0-6")	4793.02	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B140	B140 (24")	4793.03	24"	9/20/1999	Soil	VOCs	Method 8260
B141	B141 (0-6")	4793.04	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B141	B141 (24")	4793.05	24"	9/20/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B142	B142 (0-6")	4793.06	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B142	B142 (24")	4793.07	24"	9/20/1999	Soil	VOCs	Method 8260
B143	B143 (0-6")	4793.08	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B143	B143 (24")	4793.09	24"	9/20/1999	Soil	VOCs	Method 8260
B144	B144 (0-6")	4793.10	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B144	B144 (24")	4793.11	24"	9/20/1999	Soil	VOCs	Method 8260
B145	B145 (0-6")	4793.12	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B145	B145 (24")	4793.13	24"	9/20/1999	Soil	VOCs	Method 8260
B146	B146 (0-6")	4793.14	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B146	B146 (24")	4793.15	24"	9/20/1999	Soil	VOCs	Method 8260
B147	B147 (0-6")	4793.16	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B147	B147 (24")	4793.17	24"	9/20/1999	Soil	VOCs	Method 8260
B148	B148 (0-6")	4793.18	0-6"	9/20/1999	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B148	B148 (24")	4793.19	24"	9/20/1999	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	3420.01		3420.02		3420.03		3420.04		3420.05		3420.06		3420.07		3420.08		3420.09		3420.10		3420.11		3420.12		3420.13		3420.14		3420.15		3420.16		3420.17		3420.18	
Field Sample Location	Cleanup Criteria	B01 (6-12")		B01 (24")		B02 (6-12")		B02 (24")		B03 (6-12")		B03 (24")		B04 (6-12")		B04 (24")		B05 (6-12")		B05 (24")		B06 (4-10")		B06 (24")		B07 (6-12")		B07 (24")		B08 (6-12")		B08 (24")		B09 (6-12")		B09 (24")	
Sample Date	(mg/kg)	3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998		3/19/1998	
Volatiles (mg/kg)																																			
Acetone	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND			
cis-1,2-Dichloroethene	79			ND				ND				ND				ND				ND				ND				ND				ND			
Ethylbenzene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
m+p-Xylenes	410			ND				ND				ND				ND				ND				ND				ND				ND			
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND			
o-Xylene	410			ND				ND				ND				ND				ND				ND				ND				ND			
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Vinyl Chloride	2			ND				ND				ND				ND				ND				ND				ND				ND			
Semi-Volatiles (mg/kg)																																			
2-Methylnaphthalene	NLE	ND				0.083J				ND				ND				ND				ND				0.077J				1.1D				0.074J			
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				0.61D				0.093J			
Acenaphthylene	NLE	ND				0.087J				0.11J				ND				ND				ND				210				0.32D				0.081J			
Anthracene	10,000	ND				ND				0.094J				ND				ND				ND				0.12J				1.2D				190			
Benzo[a]anthracene	0.9	190				270				390				ND				0.11J				0.21JD				470				3.D				640			
Benzo[a]pyrene	0.66	210				290				0.46				ND				120				0.23JD				560				2.6D				740			
Benzo[b]fluoranthene	0.9	0.1J				170				320				ND				0.066J				0.18JD				450				1.5D				610			
Benzo[g,h,I]perylene	NLE	0.095J				190				250				ND				0.078J				0.13JD				290				1.3D				340			
Benzo[k]fluoranthene	0.9	200				280				290				ND				140				0.21JD				380				2.8D				650			
bis(2-Ethylhexyl)phthalate	49	0.17B				0.2B				0.088JB				ND				0.13JB				0.14JBD				0.088JB				0.14JBD				0.15JB			
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Chrysene	9	280				500				800				ND				180				0.34D				1100				4.3D				1100			
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				0.56D				ND			
Diethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Di-n-butylphthalate	5700	4.3B				6.5B				2.3B				7.3BD				3.4B				11.BD				3.B				1.9BD				0.5JB			
Fluoranthene	2300	420				460				730				ND				210				0.32D				990				6.4D				1600			
Fluorene	2300	ND				ND				0.072J				ND				ND				ND				0.096J				1.8D				0.098J			
Indeno[1,2,3-cd]pyrene	0.9	120				190				0.25				ND				ND				0.13JD				310				1.2D				370			
Naphthalene	230	ND				ND				ND				ND				ND				ND				0.14J				1.2D				0.11J			
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Phenanthrene	NLE	200				460				650				ND				140				0.19JD				850				9.D				1100			
Pyrene	1700	300				500				750				ND				170				0.29D				1000				5.9D				1100			
Pesticides/PCBs (mg/kg)																																			
4,4'-DDD	3	0.004				0.09				0.115				0.008				0.055				0.088				0.311				0.736				0.364			
4,4'-DDE	2	0.009				0.069				0.074				0.014				0.028				0.07				0.075				0.541				0.307			
4,4'-DDT	2	0.035				0.223				0.202				0.081				0.084				0.306				0.113				0.5				0.271			
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND			
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Metals (mg/kg)																																			
Aluminum	NLE	5642				6919				12820				9691				5612				6598				8075				5616				12110			
Antimony	14	0.71				1.051				2.367				1.731				1.483				1.046				1.001				1.034				3.401			
Arsenic	20	5.558				10.87				12.76				10.61				11.11				9.919				17.43				6.688				38.02			
Barium	700	26.94				35.36				49.88				60.55				85.09				44.48				74.22				289.3				60.36			
Beryllium	2	0.535				0.461				1.18				0.555				0.664				0.4763				0.5101				0.6405				1.304			
Cadmium	39	1.307				ND				ND				ND				ND				ND				ND				ND				ND			
Calcium	NLE	172.2				251.3				320.3				383.6				488.9				338.2				223.3				453				594.4			
Chromium	NLE	39.64				64.16				135.6				80.22				75.81				61.98				83.75				42.5				133.9			
Cobalt	NLE	1.599				1.463				1.435				1.243				1.208				1.372				1.415				1.515				1.896			
Copper	600	6.895				40.21				18.34				45.3				50.19				46.45				45.52				197.1				141.7			
Iron	NLE	14940				18570				37620				45290				23110				19700				27560				13090				41770			
Lead	400	52.03				53.54				65.37				33.97				32.95				67.67				77.75				84.35				123.5			
Magnesium	NLE	1257				1477				4207				2117				2073				1905				1914				1314				3514			
Manganese	NLE	51.87				17.21				21.31				25.55				16.93				22.75				22.02				35.4				32.09			
Mercury	14	29.909				0.39				0.21				0.051				0.05				0.118				0.234				0.012				1.461			
Nickel	250	4.266				5.328				6.129				5.36				4.669				5.057				5.464				4.738				8.985			
Potassium	NLE	3509				3656				8666				5885				6901				5405				5755				4024				7195			
Selenium	63	ND				0.885				ND				0.429				1.159				0.709				1.033				0.394				1.374			
Silver	110	ND				1.571				1.699				ND				ND				ND				0.581				1.013				1.493			
Sodium	NLE	24.61				207.6				91.26				574.1				411.4				376.3				646.7				229.5				139			
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Vanadium	370	22.45				32.82				65.1				58.32				29.18				31.03				40.81				30.22				54.67			
Zinc	1500	48.29				29.07				51.51				42.63				24.21				36.88				36.02				49.93				112.4			

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil
Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3424.02	3424.03	3424.04	3424.05	3424.06	3424.07	3424.08	3424.09	3424.10	3424.11	3424.12	3424.13	3424.14	3424.15	3424.16	3424.17	3424.18	3424.19
Field Sample Location		B10 (6-12")	B10 (24")	B11 (5-11")	B11 (24")	B12 (6-12")	B12 (24")	B13 (6-12")	B13 (24")	B14 (3-9")	B14 (24")	B15 (2-8")	B15 (24")	B16 (2-8")	B16 (24")	B17 (6-12")	B17 (24")	B18 (3-9")	B18 (24")
Sample Date	(mg/kg)	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998	3/20/1998
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		210		ND		ND		ND		0.060J		ND		ND		ND	
Acenaphthene	3400	ND		ND		0.073J		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		0.018J		ND		ND		ND	
Anthracene	10,000	ND		ND		0.11J		ND		ND		0.017J		ND		ND		ND	
Benzo[a]anthracene	0.9	130		ND		220		ND		ND		0.063J		ND		ND		ND	
Benzo[a]pyrene	0.66	230		ND		250		ND		ND		0.072J		ND		ND		ND	
Benzo[b]fluoranthene	0.9	160		ND		190		ND		ND		160		ND		ND		ND	
Benzo[g,h,I]perylene	NLE	180		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[k]fluoranthene	0.9	300		ND		190		ND		0.065J		180		ND		0.062J		ND	
bis(2-Ethylhexyl)phthalate	49	0.098JB		0.067JB		0.090JB		0.085JB		0.073JB		0.23B		0.26B		0.35B		0.22B	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		0.065J		ND	
Chrysene	9	260		0.095J		380		ND		0.096J		160		ND		0.074J		0.069J	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		0.021J		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		0.018J		ND		ND		ND	
Di-n-butylphthalate	5700	0.17JB		0.34JB		0.39JB		0.37JB		0.32JB		0.61B		0.45JB		0.51JB		0.56B	
Fluoranthene	2300	160		0.096J		700		ND		110		140		0.084J		ND		ND	
Fluorene	2300	ND		ND		0.058J		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	160		ND		ND		ND		ND		ND		ND		ND		ND	
Naphthalene	230	ND		280		ND		ND		ND		0.051J		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		0.056J		ND		ND		ND	
Phenanthrene	NLE	150		120		540		ND		0.057J		120		ND		ND		ND	
Pyrene	1700	160		0.079J		430		ND		0.080J		140		0.073J		ND		0.085J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.255		0.028		0.052		0.397		0.024		0.139		0.012		0.003		0.044	
4,4'-DDE	2	0.265		0.042		0.065		0.35		0.044		0.559		0.039		0.002		0.033	
4,4'-DDT	2	0.203		0.078		0.154		0.504		0.067		0.481		0.035		0.006		0.011	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	4508		10700		5997		7942		2469		2620		4328		5798		1336	
Antimony	14	0.58		2.641		1.738		2.273		0.467		0.345		1.02		1.526		0.319	
Arsenic	20	7.287		12.19		7.383		13.66		1.655		2.987		3.42		7.245		1.479	
Barium	700	54.95		42.85		50.36		65.44		10.62		28.31		72.64		138.7		59.2	
Beryllium	2	0.7108		1.462		0.7754		0.9925		0.2271		0.2784		0.8532		0.512		0.1552	
Cadmium	39	ND		ND		ND		ND		0.0659		ND		0.6784		0.1049		0.1673	
Calcium	NLE	376.9		333.2		205.5		360		81.68		650.6		2110		3422		1379	
Chromium	NLE	37.92		168.8		90.86		124.6		24.03		7.636		31.38		7.333		2.01	
Cobalt	NLE	5.776		0.7841		0.5523		0.8438		0.3294		1.586		3.902		2.603		1.813	
Copper	600	112		12.21		13.34		6.003		4.121		81.92		31.96		22.16		12.58	
Iron	NLE	13640		31460		16200		21030		4887		4008		6384		13410		1710	
Lead	400	95.11		11.72		16.93		3.55		4.462		21.63		75.93		83.68		4.709	
Magnesium	NLE	745.9		4609		2133		2946		456.8		286.1		326.9		311.6		165.3	
Manganese	NLE	24.13		10.6		9.861		7.919		5.807		13.92		29.19		36.44		10.51	
Mercury	14	0.501		0.061		0.085		0.015		0.021		0.045		0.258		0.021		0.017	
Nickel	250	13.03		4.273		2.672		3.231		1.82		4.973		11.59		10.22		5.396	
Potassium	NLE	1989		10140		4544		6153		1171		530.5		595		464.3		176.6	
Selenium	63	0.589		0.505		ND		ND		ND		0.383		0.528		0.453		0.521	
Silver	110	0.548		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	196.5		124.1		71.27		72.53		30.94		136.2		228.9		249.3		170.6	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	21.2		48		16.35		13.61		12.98		12.17		14.33		16.03		7.215	
Zinc	1500	416.3		48.45		34.98		54.28		12.55		15.35		55.18		70.97		59.54	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	3424.20	3424.21	3425.02	3425.03	3425.04	3425.05	3425.06	3425.07	3425.08	3425.09	3425.10	3425.11	3425.12	3425.13	3425.14	3425.15	3425.16	3425.17
Field Sample Location	Cleanup Criteria	B19 (2-8")	B19 (24")	B20 (6-12")	B20 (24")	B21 (3-9")	B21 (24")	B22 (3-9")	B22 (24")	B23 (3-9")	B23 (24")	B24 (3-9")	B24 (24")	B25 (6-12")	B25 (24")	B26 (2-8")	B26 (24")	B27 (4-10")	B27 (24")
Sample Date	(mg/kg)	3/20/1998	3/20/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		0.097J		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		480		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		120		ND		540		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		ND		0.088J		540		0.065J		1900		ND		ND	
Benzo[a]pyrene	0.66	ND		ND		0.79J		0.080J		550		0.060J		1900		ND		ND	
Benzo[b]fluoranthene	0.9	ND		ND		ND		0.060J		490		0.068J		1100		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		0.063J		340		ND		1000		ND		ND	
Benzo[k]fluoranthene	0.9	ND		0.057J		ND		0.1J		420		0.081J		1900		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.31B		0.39B		0.77JB		0.11JB		0.19B		0.2B		0.055JB		0.089JB		0.093JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		0.068J		0.74J		160		950		0.15J		3200		0.099J		0.066J	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		620		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	0.33JB		0.34JB		1.1JB		0.3JB		0.14JB		0.13JB		0.099JB		0.12JB		0.14JB	
Fluoranthene	2300	ND		0.072J		ND		170		1200		120		3700		0.067J		0.064J	
Fluorene	2300	ND		ND		ND		ND		0.068J		ND		250		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		ND		330		ND		890		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		0.082J		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		ND		120		850		0.080J		2100		0.070J		ND	
Pyrene	1700	0.064J		0.080J		0.75J		200		1200		150		3800		0.096J		0.068J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.015		0.072		0.207		0.158		0.113		0.063		0.037		0.066		0.113	
4,4'-DDE	2	0.048		0.098		0.232		0.317		0.109		0.066		0.041		0.171		0.044	
4,4'-DDT	2	0.036		0.194		0.116		0.326		0.304		0.045		0.043		0.309		0.057	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	3624		4607		3855		5241		8348		3407		4485		2628		8444	
Antimony	14	1.34		0.947		1.281		0.458		0.653		0.458		0.787		0.371		2.104	
Arsenic	20	6.735		5.143		4.345		4.688		5.923		2.446		6.348		1.722		21.54	
Barium	700	71.49		13.94		29.9		15.92		42.62		18.26		31.35		7.015		14.1	
Beryllium	2	1.148		0.492		0.3599		0.4215		0.8002		0.2194		0.3329		0.1691		0.9307	
Cadmium	39	0.7389		ND		0.9103		1.677		0.549		0.2835		1.219		ND		ND	
Calcium	NLE	1033		494.4		320.3		3112		556		445.1		530.7		273.4		1138	
Chromium	NLE	32.18		60.39		59.63		12.92		41.83		19.37		31.53		17.93		125.1	
Cobalt	NLE	6.331		0.368		1.067		2.251		4.349		0.5124		0.9139		0.6978		0.7505	
Copper	600	182		7.432		502.4		35.26		80.43		7.057		13.97		5.848		21.01	
Iron	NLE	11100		11940		12300		6758		11120		4743		8822		4258		20310	
Lead	400	149.2		9.944		404.4		22.43		149		13.96		33.86		6.379		18.9	
Magnesium	NLE	832.9		1600		654		322.6		1102		555.1		689.6		440.2		2896	
Manganese	NLE	37.97		5.166		36.35		126.3		64.37		14.35		9.481		10.97		20.8	
Mercury	14	0.138		0.058		0.493		0.683		0.092		0.031		0.16		0.02		0.013	
Nickel	250	17.57		2.437		11.76		5.666		16.19		2.344		4.075		1.512		3.944	
Potassium	NLE	1968		2931		1611		621.1		3165		1315		1472		711.2		5945	
Selenium	63	0.818		ND		ND		ND		0.952		ND		0.341		ND		ND	
Silver	110	ND		ND		1.18		ND		ND		ND		ND		ND		ND	
Sodium	NLE	141		36.77		54.23		110.2		25.22		61.06		50.03		24.8		86.46	
Thallium	2	ND		0.502		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	18.92		22.07		16.46		11.38		29.96		13.33		22.48		11.77		16.77	
Zinc	1500	619.7		35.67		753.8		910.2		195.6		38.34		120.4		26.73		45.95	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	3425.18	3425.19	3425.20	3425.21	3425.22	3425.23	3428.02	3428.03	3428.04	3428.05	3428.06	3428.07	3428.08	3428.09	3428.10	3428.11	3428.12	3428.13
Field Sample Location	Cleanup Criteria	B28 (4-10")	B28 (24")	B29 (6-12")	B29 (24")	B30 (2-8")	B30 (24")	B31 (2-8")	B31 (24")	B32 (3-9")	B32 (24")	B33 (3-9")	B33 (24")	B34 (4-10")	B34 (24")	B35 (3-9")	B35 (24")	B36 (3-9")	B36 (24")
Sample Date	(mg/kg)	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/23/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		320		280		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		0.17J		0.16J		0.19J		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		0.097J		ND		690		700		450		0.2J		ND	
Benzo[a]pyrene	0.66	ND		ND		0.11J		ND		830		840		510		250		ND	
Benzo[b]fluoranthene	0.9	ND		ND		0.091J		ND		470		380		340		0.15J		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		0.085J		ND		550		600		350		ND		ND	
Benzo[k]fluoranthene	0.9	ND		ND		160		0.18J		580		750		590		250		ND	
bis(2-Ethylhexyl)phthalate	49	0.11JB		0.15JB		0.11JB		0.26JB		0.63B		0.36B		0.3JB		0.51B		0.26JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		ND		330		0.23J		1300		1400		910		450		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		0.12J		ND		ND		ND		ND	
Di-n-butylphthalate	5700	0.13JB		0.14JB		1.6B		1.4B		4.3B		0.79JB		1.2B		1.6B		0.59JB	
Fluoranthene	2300	ND		ND		210		0.17J		720		800		1100		320		ND	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		0.075J		ND		390		470		320		0.16J		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		150		0.12J		700		580		800		0.17J		ND	
Pyrene	1700	ND		ND		240		0.22J		1300		1500		1100		440		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	ND		ND		0.051		0.039		0.019		0.03		0.026		0.076		0.005	
4,4'-DDE	2	ND		ND		0.273		0.136		0.107		0.141		0.066		0.166		0.059	
4,4'-DDT	2	ND		ND		0.231		0.208		0.188		0.146		0.122		0.299		0.063	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	8185		7810		5413		4364		5564		11890		8151		6575		1855	
Antimony	14	1.951		1.98		1.448		1.06		0.687		2.65		2.078		1.272		0.426	
Arsenic	20	19.35		24.33		14.68		11.32		8.863		14.73		11.1		11.02		1.315	
Barium	700	13.03		9.416		70.55		61.24		46.39		45.66		48.79		40.17		5.639	
Beryllium	2	0.9068		0.9298		0.6609		0.5325		0.5311		1.329		0.8959		0.7196		0.127	
Cadmium	39	ND		ND		0.1488		0.1458		0.2347		0.1126		0.1174		0.3434		ND	
Calcium	NLE	2421		832.5		1231		1396		1394		1671		2981		960.9		996.7	
Chromium	NLE	131.8		123.9		67.89		54.13		43.96		142.8		127.6		72.95		23.75	
Cobalt	NLE	0.6415		0.8132		1.317		1.087		1.799		1.703		1.563		1.172		0.2485	
Copper	600	5.498		5.66		47.89		20.64		35.33		25.16		89.97		23.25		24.37	
Iron	NLE	21280		18960		16300		13620		12970		31800		20940		18550		3564	
Lead	400	4.03		4.268		56.31		32.83		45.47		45.28		37.17		33.38		3.324	
Magnesium	NLE	3065		3019		1883		1631		1474		4675		2802		2070		314.8	
Manganese	NLE	17.65		14.72		46.26		37.65		64.16		55.22		34.04		25.04		5.719	
Mercury	14	0.013		ND		0.108		0.076		0.073		0.102		0.077		0.082		0.031	
Nickel	250	3.926		3.968		4.6		3.909		7.046		7.272		5.997		5.129		1.095	
Potassium	NLE	6312		6000		5250		4738		3611		9811		5084		6139		424.6	
Selenium	63	ND		ND		ND		0.45		0.683		ND		ND		0.49		ND	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	65.74		65.74		135		81.76		174		158.7		147.4		153.7		88.89	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	19.77		16.38		18.24		16.48		21.78		47.65		33.17		24.74		11.45	
Zinc	1500	27.66		28.3		65.28		54.9		57.21		79.91		59.09		58.7		9.468	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	3428.14	3428.15	3428.16	3428.17	3428.18	3428.19	3428.20	3428.21	3428.22	3428.23	3432.02	3432.03	3432.04	3432.05	3432.06	3432.07	3432.08	3432.09
Field Sample Location	Cleanup Criteria	B37 (3-9")	B37 (24")	B38 (3-9")	B38 (24")	B39 (3-9")	B39 (24")	B40 (6-12")	B40 (24")	B41 (6-12")	B41 (24")	B42 (6-12")	B42 (24")	B43 (6-12")	B43 (24")	B44 (2-8")	B44 (24")	B45 (3-9")	B45 (24")
Sample Date	(mg/kg)	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/24/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		0.12J		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		ND		220		0.13J		690		330		240		ND	
Benzo[a]pyrene	0.66	ND		ND		ND		300		0.13J		1000		350		300		ND	
Benzo[b]fluoranthene	0.9	ND		ND		ND		0.21J		0.11J		840		470		0.16J		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		ND		ND		550		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		0.17J		ND		330		210		990		670		350		0.16J	
bis(2-Ethylhexyl)phthalate	49	0.32JB		0.41B		0.66B		0.34B		0.35B		0.26JB		0.42B		0.14JB		0.17JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		0.23J		0.11J		530		380		1800		820		530		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		390		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	0.72JB		2.2B		0.66JB		1.5B		0.67JB		0.56JB		1.4B		1.2B		1.2B	
Fluoranthene	2300	ND		0.16J		ND		390		230		1600		290		580		0.18J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		0.19J		ND		560		ND		0.19J		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		0.13J		ND		220		220		720		ND		320		0.2J	
Pyrene	1700	ND		0.18J		ND		470		300		1500		290		530		0.26J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	ND		0.069		0.009		0.142		0.133		0.05		0.059		0.022		0.041	
4,4'-DDE	2	0.014		0.164		0.044		0.211		0.456		0.111		0.098		0.186		0.275	
4,4'-DDT	2	0.008		0.25		0.117		0.112		0.176		0.176		0.312		0.225		0.467	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	3235		3410		3162		5132		6090		5180		10420		8551		1757	
Antimony	14	0.474		0.801		1.016		1.075		1.38		0.69		2.23		0.696		5.67	
Arsenic	20	3.544		12.05		9.484		11.61		9.922		11.23		16.21		10		4.379	
Barium	700	45.59		128.7		17.24		71.02		84.03		49.63		54.09		49.56		28.44	
Beryllium	2	0.8634		0.4662		0.3693		0.6631		0.6972		1.5599		1.267		0.5654		0.18	
Cadmium	39	0.5593		0.2638		0.4148		0.1471		0.8425		0.1605		ND		0.2881		0.1212	
Calcium	NLE	1143		1109		931.5		1317		1478		1111		1687		1054		475.2	
Chromium	NLE	5.249		29.69		27.07		63.37		56.51		46.02		134		37.94		10.56	
Cobalt	NLE	4.283		2.585		3.301		1.679		1.863		1.767		1.629		2.152		0.9717	
Copper	600	26.39		44.16		37.37		23.91		58.75		61.41		25.73		39.89		9.757	
Iron	NLE	1569		13290		16380		15810		16560		16950		29340		14440		3999	
Lead	400	18.56		129.4		40.67		35.42		82.95		49.1		37.93		54.89		28.98	
Magnesium	NLE	96.27		820.2		460.3		1663		1584		1388		4127		1113		286.6	
Manganese	NLE	38.8		66.82		46.57		34.75		50.74		49.29		41.07		60.75		17.01	
Mercury	14	0.084		0.212		0.054		0.1		0.136		0.113		0.078		0.095		0.113	
Nickel	250	11.74		6.638		10.18		5.603		10.42		6.326		6.554		6.718		4.667	
Potassium	NLE	265.2		2133		997.4		5385		4839		3470		9093		2890		307.1	
Selenium	63	ND		1.126		1.046		1.198		ND		ND		ND		0.334		ND	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	115.3		130.1		50.75		319.1		105.6		61.41		162.2		94.87		52.82	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	10.93		13.96		19.15		16.68		25.89		19.26		43.12		16.99		8.171	
Zinc	1500	181.7		84.81		157.7		58.14		129.7		68.39		78.77		87.89		35.31	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3432.10	3432.11	3432.12	3432.13	3432.14	3432.15	3432.16	3432.17	3432.18	3432.19	3432.20	3432.21	4748.02	4748.03	4748.04	4748.05	4748.06	4748.07
Field Sample Location		B46 (6-12")	B46 (24")	B47 (5-11")	B47 (24")	B48 (6-12")	B48 (24")	B49 (3-9")	B49 (24")	B50 (4-10")	B50 (24")	B51 (3-9")	B51 (24")	B52 (6-12")	B52 (24")	B53 (4-10")	B53 (24")	B54 (2-8")	B54 (24")
Sample Date	(mg/kg)	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	3/25/1998	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		ND		ND		ND		ND		0.12J		ND		0.39J	
Benzo[a]pyrene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		0.32J	
Benzo[b]fluoranthene	0.9	ND		0.12J		ND		ND		ND		ND		ND		ND		0.5J	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		0.22J	
Benzo[k]fluoranthene	0.9	ND		0.14J		ND		ND		ND		ND		ND		ND		0.38J	
bis(2-Ethylhexyl)phthalate	49	0.22JB		0.15JB		0.17JB		ND		0.19JB		0.44B		0.21JB		0.19JB		0.22JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		ND		0.15J		ND		0.18J		0.12J		0.13J		ND		0.59J	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		0.14J		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.1B		2.1B		2.0B		0.4JB		0.96JB		0.36JB		0.49JB		1.1JB		1.1JB	
Fluoranthene	2300	ND		0.21J		0.14J		ND		0.16J		ND		0.28J		0.12J		0.92J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		ND		ND		ND		ND		ND		0.22J	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		0.17J		ND		ND		ND		ND		0.15J		ND		0.33J	
Pyrene	1700	ND		0.23J		0.14J		ND		0.16J		ND		0.23J		ND		0.79J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.035		0.033		0.035		0.073		0.089		0.008		ND		0.05		0.781	
4,4'-DDE	2	0.09		0.128		0.086		0.14		0.234		0.044		0.005		0.037		0.264	
4,4'-DDT	2	0.18		0.138		0.27		0.461		0.485		0.055		0.011		0.112		0.28	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	4696		3458		8286		3854		5679		6382		20800		15300		19000	
Antimony	14	0.979		0.451		0.969		0.565		0.618		0.707		ND		ND		1.12	
Arsenic	20	8.333		4.976		8.409		8.337		7.217		9.589		27.2		19.1		46.9	
Barium	700	82.1		34.5		26.35		35.95		21.4		29.13		26.9		35.2		27.6	
Beryllium	2	0.6231		0.3267		0.7705		0.4051		0.5608		0.6929		2.65		2.14		2.35	
Cadmium	39	0.1333		0.2149		ND		0.0833		ND		ND		2.43		1.96		2.7	
Calcium	NLE	810.8		529.5		753.4		1062		640.5		1341		1130		2270		1020	
Chromium	NLE	43.98		18.74		61.33		37.89		35.65		48.86		333		237		293	
Cobalt	NLE	2.176		1.182		1.755		0.9757		2.081		1.857		1.17		1.08		1.2	
Copper	600	41.31		19.19		12.98		8.154		10.21		30.46		23.3		20.5		24.2	
Iron	NLE	12530		7228		18920		11470		14250		17640		68500		53200		67000	
Lead	400	28.24		56.02		36.42		18.73		27.98		28.4		38.8		16		61.5	
Magnesium	NLE	1346		619.9		2045		1166		1031		1523		10800		7670		9040	
Manganese	NLE	27.42		26.87		37.7		21.86		49.01		45.29		35.1		28.6		28	
Mercury	14	0.102		0.14		0.166		0.087		0.057		0.102		0.077		0.132		0.051	
Nickel	250	6.517		3.272		5.857		3.606		4.805		5.213		7.81		7.18		9.4	
Potassium	NLE	3777		1120		6228		3119		2451		4066		24100		18400		21100	
Selenium	63	0.777		ND		ND		ND		ND		ND		1.42		1.74		2.23	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	123.6		67.61		124.6		43.61		32.32		37.33		165		325		154	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	18.76		11.81		33.25		12.98		21.22		23.79		125		83.5		120	
Zinc	1500	40.08		44.42		50.77		42.09		45.21		69.75		87.7		82.3		114	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4748.08	4748.09	4748.10	4748.11	4748.12	4748.13	4748.14	4748.15	4748.16	4748.17	4748.18	4748.19	4748.20	4748.21	4754.02	4754.03	4754.04	4754.05
Field Sample Location	Cleanup Criteria	B55 (6-12")	B55 (24")	B56 (6-12")	B56 (24")	B57 (6-12")	B57 (24")	B58 (4-11")	B58 (24")	B59 (3-9")	B59 (24")	B60 (6-12")	B60 (24")	B61 (4-10")	B61 (24")	B63 (5-11")	B63 (24")	B64 (6-12")	B64 (24")
Sample Date	(mg/kg)	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/26/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		0.2J		ND		ND		0.15J		ND		ND		0.15J		0.58J	
Benzo[a]pyrene	0.66	ND		0.25J		ND		ND		0.13J		ND		ND		0.13J		0.49J	
Benzo[b]fluoranthene	0.9	ND		0.35J		ND		ND		0.2J		ND		ND		0.13J		0.51J	
Benzo[g,h,I]perylene	NLE	ND		0.17J		ND		ND		ND		ND		ND		ND		0.24J	
Benzo[k]fluoranthene	0.9	ND		0.25J		ND		ND		0.15J		ND		ND		0.12J		0.39J	
bis(2-Ethylhexyl)phthalate	49	0.23JB		0.13JB		0.19JB		0.19JB		0.25JB		0.19JB		0.26JB		0.4JB		0.14JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	0.12J		0.3J		ND		ND		0.23J		ND		ND		0.16J		0.78J	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.1JB		0.32JB		1.1JB		1.6B		0.51JB		0.8JB		1.8B		2.2B		0.97JB	
Fluoranthene	2300	0.18J		0.33J		ND		ND		0.26J		ND		ND		0.31J		0.72J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		0.15J		ND		ND		ND		ND		ND		ND		0.21J	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		0.14J		ND		ND		0.12J		ND		ND		ND		ND	
Pyrene	1700	0.16J		0.32J		ND		ND		0.24J		ND		ND		0.26J		1.J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.026		0.714		ND		0.003		0.028		ND		0.001		0.024		ND	
4,4'-DDE	2	0.05		0.56		0.002		0.006		0.252		0.004		0.002		0.048		ND	
4,4'-DDT	2	0.046		0.097		0.004		0.023		0.499		0.003		ND		0.015		0.003	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	11500		7960		11600		13500		8210		14000		4480		13600		18700	
Antimony	14	ND		3.53		ND		ND		ND		ND		ND		ND		ND	
Arsenic	20	19.5		7.64		20.5		22.6		12.7		5.53		4.05		12.6		51.3	
Barium	700	39.4		38.6		7.42		5.25		40.9		21.8		6.32		74		25.3	
Beryllium	2	0.753		0.623		1.55		1.76		0.513		0.379		0.33		1.95		2.14	
Cadmium	39	0.868		0.94		1.19		1.22		0.816		0.242		0.564		1.36		0.339	
Calcium	NLE	598		1200		260		931		364		190		88.7		5780		555	
Chromium	NLE	84.3		60.4		187		200		48.5		21.9		39.1		215		251	
Cobalt	NLE	1.53		2.23		0.641		0.493		3.32		2.5		1.27		2.03		1.3	
Copper	600	33.6		13.6		4.81		5.68		7.01		1.39		ND		15.9		24.4	
Iron	NLE	26000		20200		37500		37700		24100		14300		12400		48800		50900	
Lead	400	41.7		34.6		6.53		5.24		23.1		7.33		2.97		7.58		16.1	
Magnesium	NLE	2510		1330		4420		5510		703		855		785		6900		7490	
Manganese	NLE	26.4		24.5		21.4		15		55.3		38.6		28.6		52.5		37.6	
Mercury	14	0.151		0.226		ND		ND		0.117		0.023		0.021		ND		0.084	
Nickel	250	7.84		7.38		6.28		4.51		9.49		7.05		2.71		17.6		6.65	
Potassium	NLE	4420		2980		10200		12600		1480		618		1520		16200		16700	
Selenium	63	1.77		ND		2.46		1.33		1.9		ND		ND		1.53		0.886	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	187		97.1		76.3		180		83.2		94.3		56		279		228	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	55.1		55.2		72.5		81.6		65.5		29.2		36.3		71.6		118	
Zinc	1500	48.7		103		43.5		38.5		41.6		33.1		16.8		77.3		59.8	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4754.06	4754.07	4754.08	4754.09	4754.10	4754.11	4754.12	4754.13	4754.14	4754.15	4754.16	4754.17	4754.18	4754.19	4754.20	4754.21	4754.22	4754.23
Field Sample Location	Cleanup Criteria	B65 (5-11")	B65 (24")	B66 (5-11")	B66 (24")	B67 (6-12")	B67 (24")	B68 (5-11")	B68 (24")	B69 (5-11")	B69 (24")	B70 (0-6")	B70 (24")	B71 (5-11")	B71 (24")	B72 (7-13")	B72 (24")	B73 (6-12")	B73 (24")
Sample Date	(mg/kg)	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999	8/27/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		0.52J		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		ND		ND		ND		ND		1400		ND		ND	
Benzo[a]pyrene	0.66	ND		ND		ND		ND		ND		ND		1300		ND		ND	
Benzo[b]fluoranthene	0.9	ND		ND		ND		ND		ND		ND		1200		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		ND		ND		ND		0.61J		ND		ND	
Benzo[k]fluoranthene	0.9	ND		ND		ND		ND		ND		ND		1100		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.24JB		0.12JB		0.15JB		0.2JB		0.12JB		0.19JB		0.29JB		0.16JB		0.11JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		ND		ND		0.12J		ND		ND		1400		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		0.18J		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		0.2J		0.14J		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.1JB		0.28JB		0.29JB		0.72JB		0.84JB		1.3B		0.46JB		0.94JB		0.67JB	
Fluoranthene	2300	ND		ND		ND		0.13J		ND		ND		3400		ND		0.12J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		ND		ND		ND		0.62J		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		ND		ND		ND		ND		1800		ND		ND	
Pyrene	1700	ND		ND		ND		0.14J		ND		ND		2500		ND		0.12J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.003		0.009		0.961		ND		ND		0.025		ND		ND		1.766	
4,4'-DDE	2	0.013		0.009		0.21		ND		0.003		0.064		0.005		ND		0.166	
4,4'-DDT	2	0.174		0.011		0.08		ND		0.002		0.33		0.008		ND		0.2	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	15700		19100		11700		11700		4900		17400		20200		20100		10400	
Antimony	14	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Arsenic	20	29.4		24.4		14.1		6.95		4.79		22.3		24.2		43.3		10	
Barium	700	6.35		15		38.2		17.7		9.32		29.3		22.9		11.3		66.1	
Beryllium	2	2.18		2.19		0.962		1.23		0.361		2.13		1.91		2.71		0.738	
Cadmium	39	0.385		0.42		0.36		0.308		0.281		0.557		0.257		0.612		0.272	
Calcium	NLE	290		447		2590		840		105		997		694		481		439	
Chromium	NLE	256		266		91.4		114		40.4		258		239		314		55.6	
Cobalt	NLE	0.874		1.36		2.38		1.87		1.32		1.4		1.14		1.17		3.33	
Copper	600	12.2		12		14.9		4.94		4.48		12.8		14.7		5.72		22	
Iron	NLE	49900		54000		28600		38200		14200		58200		48000		67600		24900	
Lead	400	4.73		7.94		7.56		4.98		2.86		17.5		45.5		13.2		34.3	
Magnesium	NLE	7580		8040		3340		4400		839		8190		7280		9930		1490	
Manganese	NLE	19.6		36.7		55.7		41.7		27.2		27.6		41.3		24		22.8	
Mercury	14	ND		ND		0.028		ND		ND		0.026		ND		0.037		0.286	
Nickel	250	6.47		5.95		6.75		5.61		2.58		7.59		5.77		7.06		10.4	
Potassium	NLE	17300		18000		6420		10600		1900		18800		16100		23200		3900	
Selenium	63	ND		0.848		0.882		ND		ND		0.766		ND		ND		1.43	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	191		367		151		150		174		171		166		156		199	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	112		123		57.2		64.2		37.3		106		112		125		42.3	
Zinc	1500	48.9		83.4		49.3		35		16.4		77		69.5		61.4		61.7	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil
Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4760.02	4760.03	4760.04	4760.05	4760.06	4760.07	4760.08	4760.09	4760.10	4760.11	4760.12	4760.13	4760.14	4760.15	4760.16	4760.17	4760.18	4760.19
Field Sample Location	Cleanup Criteria	B74 (6-12")	B74 (24")	B75 (6-12")	B75 (24")	B76 (3-9")	B76 (24")	B77 (6-12")	B77 (24")	B78 (6-12")	B78 (24")	B79 (3-9")	B79 (24")	B80 (6-12")	B80 (24")	B81 (6-12")	B81 (24")	B82 (6-12")	B82 (24")
Sample Date	(mg/kg)	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		1300		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		1100		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		880		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		0.74J		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		0.51J		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		680		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		0.4J		0.23J		ND		ND		0.14J		ND		ND		ND	
Benzo[a]pyrene	0.66	ND		0.39J		0.3J		ND		ND		0.14J		ND		ND		ND	
Benzo[b]fluoranthene	0.9	ND		0.42J		0.32J		ND		ND		0.14J		ND		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		0.23J		0.17J		ND		ND		ND		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		0.43J		0.32J		ND		ND		0.13J		ND		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.23JB		0.26JB		0.22JB		0.18JB		0.23JB		0.23JB		0.19JB		0.22JB		0.2JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		0.5J		0.3J		ND		ND		0.21J		ND		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		0.12J		ND		0.14J		ND		0.15J		ND	
Di-n-butylphthalate	5700	0.34JB		1.3B		0.24JB		0.23JB		1.JB		0.26JB		0.44JB		1.JB		0.86JB	
Fluoranthene	2300	ND		0.82J		0.23J		ND		ND		0.31J		ND		ND		0.13J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		0.23J		0.17J		ND		ND		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		0.45J		ND		ND		ND		0.21J		ND		ND		ND	
Pyrene	1700	ND		0.71J		0.26J		ND		ND		0.3J		ND		ND		0.13J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.012		0.689		0.115		ND		ND		0.23		ND		0.414		0.28	
4,4'-DDE	2	0.039		0.491		0.137		ND		0.001		0.097		ND		0.751		0.181	
4,4'-DDT	2	0.085		0.156		0.246		0.003		0.003		0.054		ND		1.98		0.124	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		0.063		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		0.11		ND	
Metals (mg/kg)																			
Aluminum	NLE	15100		16400		11600		21600		13700		14300		9650		11700		9940	
Antimony	14	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Arsenic	20	16		21.8		9.59		28.6		27.1		13.4		16.4		16.8		13.1	
Barium	700	29.1		32		47.4		18.2		17.1		41.7		17.7		16.7		84.2	
Beryllium	2	1.42		1.85		1.15		2.63		1.86		1.47		0.64		1.41		1.38	
Cadmium	39	0.336		0.42		0.33		0.831		0.458		0.385		0.257		0.612		0.483	
Calcium	NLE	752		599		750		702		482		629		941		635		1690	
Chromium	NLE	171		221		134		330		208		143		74.8		149		152	
Cobalt	NLE	1.61		1.3		1.47		1.25		0.697		2.33		1.55		1.4		1.1	
Copper	600	4.34		14.9		12.4		24.5		15.1		1.92		21.8		30.9		8.95	
Iron	NLE	36800		52000		35300		71100		44200		42000		17800		35100		37600	
Lead	400	16		25		15.1		32.3		15		7.38		33.8		41.3		14.7	
Magnesium	NLE	5110		6960		3980		9920		5670		4990		2270		4300		4260	
Manganese	NLE	39.8		27.7		25.1		28		23.7		28.1		30.1		29.3		22.9	
Mercury	14	ND		ND		0.036		ND		ND		ND		ND		ND		0.034	
Nickel	250	5.19		6.37		5.19		7.82		5.54		6.01		7.09		6.91		5.03	
Potassium	NLE	10800		16000		9700		23400		13500		11500		3820		9980		10500	
Selenium	63	ND		ND		ND		ND		ND		ND		ND		ND		1	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	471		126		127		662		86.3		218		109		116		130	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	84		98		64.5		125		69.8		77.5		34		59.2		66.7	
Zinc	1500	49.9		54.4		42.3		84.1		51.3		43.6		76		85.2		52.5	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4760.20	4760.21	4760.22	4760.23	4760.24	4760.25	4760.26	4760.27	4760.28	4760.29	4760.30	4760.31	4762.02	4762.03	4762.04	4762.05	4762.06	4762.07
Field Sample Location	Cleanup Criteria	B83 (6-12")	B83 (24")	B84 (6-12")	B84 (24")	B85 (4-10")	B85 (24")	B86 (6-12")	B86 (24")	B87 (5-11")	B87 (24")	B88 (5-11")	B88 (24")	B89 (3-9")	B89 (24")	B90 (6-12")	B90 (24")	B91 (4-10")	B91 (24")
Sample Date	(mg/kg)	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/30/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		13000		12000		11000
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		ND		ND		ND		0.12J		ND		ND		ND	
Benzo[a]pyrene	0.66	ND		ND		ND		ND		ND		0.13J		ND		ND		ND	
Benzo[b]fluoranthene	0.9	ND		ND		ND		ND		ND		0.16J		ND		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		ND		ND		ND		ND		0.13J		ND		ND		ND	
bis(2-Ethylhexyl)phthalate	49	3.1B		0.26JB		0.2JB		0.19JB		0.25JB		0.15JB		0.24JB		0.59JB		0.21JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		ND		ND		ND		ND		0.19J		ND		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		0.24J		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.2B		2.2B		1.3B		1.6B		0.31JB		0.68JB		0.35JB		0.25JB		0.36JB	
Fluoranthene	2300	ND		ND		ND		ND		ND		0.28J		ND		ND		ND	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		ND		ND		ND		0.2J		ND		ND		ND	
Pyrene	1700	ND		ND		ND		ND		ND		0.27J		ND		ND		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	ND		0.005		0.1		ND		ND		0.659		0.111		0.022		0.048	
4,4'-DDE	2	0.003		0.017		0.061		ND		ND		0.28		0.103		0.004		0.016	
4,4'-DDT	2	0.01		0.076		0.043		ND		ND		0.077		0.125		0.003		0.015	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	17900		18600		12500		17800		17000		15100		14100		8780		12400	
Antimony	14	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Arsenic	20	40.4		21.7		8.21		21.2		40.7		18.8		25.3		7.51		9.26	
Barium	700	10.5		15		57.3		15.1		83		32.5		53		22.8		47.9	
Beryllium	2	2.36		2.15		1.19		2.02		2.05		1.74		1.06		0.632		0.931	
Cadmium	39	0.646		0.667		0.242		0.378		0.527		0.52		0.608		0.538		0.192	
Calcium	NLE	624		735		655		484		1050		1180		2050		612		349	
Chromium	NLE	274		259		66.6		240		242		191		94.8		69.7		95.8	
Cobalt	NLE	1.02		1.14		7.25		1.09		1.89		1.34		2.66		2.25		1.83	
Copper	600	16.3		24.5		35.2		13.1		24.5		15.3		16.1		8.91		21.4	
Iron	NLE	57700		53900		19100		46200		52700		44600		32100		21200		26400	
Lead	400	8.58		18.6		58.8		6.57		35.7		32.1		56.9		35.7		37.6	
Magnesium	NLE	8130		7620		1610		6920		6780		5790		2850		1730		2920	
Manganese	NLE	21.5		30.4		39.4		31		49.2		71.6		40.9		38.8		24.4	
Mercury	14	ND		0.051		0.09		ND		0.059		0.084		0.261		0.062		0.05	
Nickel	250	6.26		7.73		21.3		5.26		7.88		6.31		8.46		5.58		5.75	
Potassium	NLE	19100		17800		3980		15800		15300		13400		6530		3840		6750	
Selenium	63	ND		ND		1.17		ND		ND		ND		ND		ND		ND	
Silver	110	ND		ND		ND		ND		ND		1.09		ND		ND		ND	
Sodium	NLE	96.5		145		242		142		185		117		167		126		215	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	115		113		44.3		113		105		80.5		57.5		44.4		50.7	
Zinc	1500	56.4		76.7		47		49		120		115		37.1		82.6		47.9	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4762.08	4762.09	4762.10	4762.11	4762.12	4762.13	4762.14	4762.15	4762.16	4762.17	4762.18	4762.19	4762.20	4762.21	4762.22	4762.23	4762.24	4762.25
Field Sample Location	Cleanup Criteria	B92 (6-12")	B92 (24")	B93 (2-8")	B93 (24")	B94 (4-10")	B94 (24")	B95 (6-12")	B95 (24")	B96 (6-12")	B96 (24")	B97 (6-12")	B97 (24")	B98 (3-9")	B98 (24")	B99 (4-10")	B99 (24")	B100 (6-12")	B100 (24")
Sample Date	(mg/kg)	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999	8/31/1999
Volatiles (mg/kg)																			
Acetone	1000		12000		11000		13000		13000		14000		13000		13000		14000		14000
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		630		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		0.67J		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		0.24J		ND		ND		ND		0.29J	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		0.36J		ND		ND		0.62J		0.21J		ND		0.11J		ND	
Benzo[a]pyrene	0.66	ND		0.38J		ND		ND		0.37J		0.26J		ND		0.12J		ND	
Benzo[b]fluoranthene	0.9	ND		0.34J		ND		ND		0.64J		0.31J		ND		0.25J		0.15J	
Benzo[g,h,I]perylene	NLE	ND		0.2J		ND		ND		0.16J		0.19J		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		0.29J		ND		ND		0.66J		0.23J		ND		0.16J		ND	
bis(2-Ethylhexyl)phthalate	49	0.27JB		0.22JB		0.2JB		0.2JB		0.28JB		0.26JB		0.19JB		0.25JB		0.23JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		0.47J		ND		ND		1.1J		0.27J		0.13J		0.23J		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		0.13J		ND		0.32J		0.4J		0.23J		0.14J		0.23J		0.14J	
Di-n-butylphthalate	5700	0.84JB		0.29JB		0.28JB		0.87JB		0.8JB		1.1JB		0.79JB		1.5B		0.26JB	
Fluoranthene	2300	ND		0.34J		ND		ND		1300		0.29J		0.12J		0.17J		ND	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		0.16J		ND		ND		0.17J		0.19J		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		0.17J		ND		ND		ND		0.23J	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		ND		ND		0.35J		ND		ND		ND		0.14J	
Pyrene	1700	ND		0.5J		ND		ND		1.1J		0.32J		0.19J		0.18J		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.002		ND		0.01		0.124		1.165		ND		0.069		0.006		0.011	
4,4'-DDE	2	0.003		ND		0.008		0.087		0.492		0.003		0.045		0.021		0.012	
4,4'-DDT	2	0.006		ND		0.002		0.157		0.699		0.014		0.148		0.006		0.007	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		0.002		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	17400		19100		19700		15900		12900		15100		12900		14900		16800	
Antimony	14	ND		ND		ND		ND		1.88		ND		ND		ND		ND	
Arsenic	20	31.0		26.5		21.5		20.1		14.5		15.5		9.72		11.3		20.6	
Barium	700	17.6		15.2		81.5		40.1		53.1		25.5		27.8		42.5		29.7	
Beryllium	2	1.47		2.32		1.91		1.49		0.907		1.1		1.03		1.51		1.8	
Cadmium	39	0.244		0.784		0.693		0.965		0.648		0.281		0.295		0.336		0.522	
Calcium	NLE	525		1140		1590		1430		1120		647		583		762		842	
Chromium	NLE	187		273		221		170		101		124		129		84.7		206	
Cobalt	NLE	1.45		1.06		1.76		2.2		2.91		2.41		1.92		2.56		2.35	
Copper	600	17.7		17.7		138		88.6		181		4.44		4.51		3.31		14.2	
Iron	NLE	38500		54700		46200		39600		25600		39400		29000		35600		45500	
Lead	400	17.3		10.8		209		50.4		79.5		11.3		18.3		11.6		22.9	
Magnesium	NLE	5100		8130		6580		5150		2950		2880		3060		3530		5950	
Manganese	NLE	47.2		22.8		80		53.5		123		31.9		31.7		80		25.5	
Mercury	14	0.051		0.063		0.064		0.099		0.162		0.094		0.243		0.084		0.131	
Nickel	250	5.2		7.67		7.65		8.68		10.4		9.02		6.54		8.89		9.27	
Potassium	NLE	10600		18700		14800		11400		6190		5850		6300		6720		13600	
Selenium	63	ND		ND		ND		ND		0.698		0.706		ND		ND		ND	
Silver	110	ND		ND		ND		ND		0.719		ND		ND		ND		ND	
Sodium	NLE	120		132		234		130		146		174		120		169		142	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	88.7		116		101		82		59.7		95.5		75.9		50.6		96.8	
Zinc	1500	57.4		82.8		316		94.5		402		47.2		62		92.3		50	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil
Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4762.26	4762.27	4762.28	4762.29	4774.02	4774.03	4774.04	4774.05	4774.06	4774.07	4774.08	4774.09	4774.10	4774.11	4774.12	4774.13	4774.14	4774.15
Field Sample Location	Cleanup Criteria	B101 (6-12")	B101 (24")	B102 (6-12")	B102 (24")	B103 (6-12")	B103 (24")	B104 (3-9")	B104 (24")	B105 (0-6")	B105 (24")	B106 (0-6")	B106 (24")	B107 (4-10")	B107 (24")	B108 (5-11")	B108 (24")	B109 (6-12")	B109 (24")
Sample Date	(mg/kg)	8/31/1999	8/31/1999	8/31/1999	8/31/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999
Volatiles (mg/kg)																			
Acetone	1000		16000		13000		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		0.18J		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		0.88J		0.15J		0.14J		ND		ND		ND	
Anthracene	10,000	ND		ND		ND		0.4J		0.17J		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		ND		0.2J		2300		0.50J		0.24J		ND		ND		ND	
Benzo[a]pyrene	0.66	ND		ND		0.19J		3600		0.52J		0.32J		ND		ND		ND	
Benzo[b]fluoranthene	0.9	ND		ND		0.21J		3500		0.51J		0.37J		ND		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		ND		0.13J		1800		0.25J		ND		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		ND		0.21J		3000		0.45J		0.27J		ND		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.23JB		0.2JB		0.24JB		0.22JB		0.26JB		0.26JB		0.31JB		0.27JB		0.3JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		ND		0.26J		2600		0.66J		0.35J		ND		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		0.73J		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	0.12J		ND		ND		ND		ND		ND		ND		0.18J		ND	
Di-n-butylphthalate	5700	1.1JB		1.1JB		1.3B		1.5B		0.56JB		1.4B		0.66JB		1.7B		1.5B	
Fluoranthene	2300	ND		ND		0.43J		2700		0.85J		0.35J		ND		ND		ND	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		0.12J		1900		0.24J		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		0.29J		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		ND		0.25J		0.59J		0.47J		0.16J		ND		ND		ND	
Pyrene	1700	ND		ND		0.4J		3100		0.92J		0.43J		ND		ND		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	ND		0.007		0.381		ND		0.081		0.05		0.003		ND		1.031	
4,4'-DDE	2	ND		0.01		0.316		0.01		0.06		0.076		0.007		ND		0.81	
4,4'-DDT	2	ND		ND		0.38		0.051		0.231		0.085		0.007		ND		0.03	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		0.002	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	21800		24700		18200		12800		15700		17900		22700		17800		18900	
Antimony	14	0.455		ND		0.461		ND		ND		ND		ND		ND		ND	
Arsenic	20	21.7		32.1		23.6		8.63		13.5		13.9		26		28.9		30.3	
Barium	700	31.4		17.3		75.7		35.3		41.1		42.2		13.1		10.9		41.6	
Beryllium	2	1.73		2.71		1.95		0.797		1.12		1.32		2.81		1.4		1.76	
Cadmium	39	0.331		0.924		1.43		0.411		0.44		0.443		0.84		0.269		0.835	
Calcium	NLE	736		964		1340		528		854		984		808		429		1230	
Chromium	NLE	210		338		211		68.6		96.8		132		333		178		213	
Cobalt	NLE	1.58		1.32		2.03		4.18		3.27		4.12		1.22		1.22		2.03	
Copper	600	16.4		20.9		34		3.68		16.1		9.78		2.95		23.1		33.4	
Iron	NLE	39000		74100		45500		31800		33600		39500		66600		33800		43500	
Lead	400	28.3		10.3		60.1		13.4		28.3		39.9		11.2		4.84		83.1	
Magnesium	NLE	5690		10500		6060		1210		3260		4200		9940		4880		6050	
Manganese	NLE	55.6		42.7		44.1		89.5		64.6		123		33.7		31.7		63.5	
Mercury	14	0.047		ND		0.378		0.047		0.141		0.051		0.046		ND		0.068	
Nickel	250	6.15		7.82		10.6		10.5		9.53		8.91		6.94		4.99		8.06	
Potassium	NLE	12000		24100		13500		2580		6920		9120		23200		9910		13500	
Selenium	63	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Silver	110	ND		ND		0.856		ND		ND		ND		ND		ND		ND	
Sodium	NLE	136		181		117		131		243		143		138		100		93.3	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	101		134		98.7		75		63.2		71.9		140		85.3		104	
Zinc	1500	65		69.7		102		49		61.3		71.3		62.8		43		129	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil
Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4774.16	4774.17	4774.18	4774.19	4774.20	4774.21	4774.22	4774.23	4777.02	4777.03	4777.04	4777.05	4777.06	4777.07	4777.08	4777.09	4777.10	4777.11
Field Sample Location	Cleanup Criteria	B110 (9-15")	B110 (24")	B111 (3-9")	B111 (24")	B112 (6-12")	B112 (24")	B113 (6-12")	B113 (24")	B114 (4-10")	B114 (24")	B115 (6-12")	B115 (24")	B116 (0-6")	B116 (24")	B117 (4-10")	B117 (24")	B118 (4-10")	B118 (24")
Sample Date	(mg/kg)	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/7/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		1600		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	0.12J		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		0.53J		ND		ND		ND		ND	
Acenaphthylene	NLE	0.65J		0.15J		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10,000	0.35J		ND		0.15J		ND		2200		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	1600		0.37J		0.75J		ND		4100		0.28J		0.31J		0.30J		ND	
Benzo[a]pyrene	0.66	2600		0.39J		0.83J		ND		3300		0.3J		0.33J		0.3J		ND	
Benzo[b]fluoranthene	0.9	2500		0.39J		2200		ND		3100		0.27J		0.42J		0.31J		ND	
Benzo[g,h,I]perylene	NLE	0.92J		0.22J		0.42J		ND		1700		0.17J		ND		0.12J		ND	
Benzo[k]fluoranthene	0.9	2200		0.32J		1300		ND		2800		0.29J		0.32J		0.27J		ND	
bis(2-Ethylhexyl)phthalate	49	0.23JB		0.2JB		0.18JB		0.24JB		0.3JB		0.19JB		0.31JB		0.3JB		0.15JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	1900		0.5J		1800		ND		3900		0.4J		0.41J		0.37J		ND	
Dibenz[a,h]anthracene	0.66	0.35J		ND		ND		ND		0.68J		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		0.33J		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.2B		0.52JB		1.5B		2.3B		0.73JB		0.64JB		1.4B		0.45JB		0.6JB	
Fluoranthene	2300	2100		0.63J		0.45J		ND		9300		0.58J		0.6J		0.59J		ND	
Fluorene	2300	ND		ND		ND		ND		0.8J		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	0.96J		0.2J		0.45J		ND		1700		0.16J		ND		0.13J		ND	
Naphthalene	230	0.2J		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	0.76J		0.42J		ND		ND		8300		0.35J		0.34J		0.28J		ND	
Pyrene	1700	2400		0.74J		1.J		ND		7100		0.72J		0.64J		0.59J		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.084		0.062		0.057		0.138		0.008		0.085		0.019		0.183		0.024	
4,4'-DDE	2	0.064		0.095		0.022		0.069		0.062		0.012		0.013		0.131		0.015	
4,4'-DDT	2	0.061		0.065		0.013		0.06		0.016		0.019		0.029		0.027		0.013	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		0.004		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		0.005		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	10200		14900		17400		12000		13600		11000		12500		10800		17200	
Antimony	14	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Arsenic	20	7.6		11.5		17.6		16.8		24.9		12.2		16.2		11.8		24.7	
Barium	700	29.2		34.1		114		10.4		28.6		30.5		63.7		27.6		19.3	
Beryllium	2	0.709		0.994		1.54		1.21		1.67		1.08		1.34		1.27		1.15	
Cadmium	39	0.348		0.299		0.563		0.324		0.516		0.195		0.493		2.26		ND	
Calcium	NLE	574		722		1330		592		850		1390		14200		1530		773	
Chromium	NLE	61.7		92		133		149		186		92.4		189		124		159	
Cobalt	NLE	3.21		2.46		6.36		1.22		1.11		2.27		3.09		5.14		1.08	
Copper	600	3.68		4.95		19.5		2.18		53.6		18.2		30.6		38.6		15.2	
Iron	NLE	28800		29400		35100		30500		41800		30800		41200		33600		31100	
Lead	400	15.7		19		30.2		14.8		66.7		16.4		38.3		47		15.9	
Magnesium	NLE	1260		3070		3670		3900		5730		3450		5480		3820		4600	
Manganese	NLE	71.1		59.7		51.9		29.6		50.6		62.1		785		89.8		34.2	
Mercury	14	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Nickel	250	8.78		6.89		15.3		3.9		6.55		7.13		10.2		14.1		4.83	
Potassium	NLE	2630		6430		7940		8640		12300		7030		9190		7840		8370	
Selenium	63	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	75.9		107		223		48.2		93.9		191		346		190		188	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	67.6		54.5		70.2		67.7		73		50.9		70.3		57.7		77.5	
Zinc	1500	54.6		42.2		99.6		35.8		99.8		73		126		226		77.4	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4777.12	4777.13	4777.14	4777.15	4777.16	4777.17	4777.18	4777.19	4777.20	4777.21	4777.22	4777.23	4777.24	4777.25	4777.26	4777.27	4790.02	4790.03
Field Sample Location	Cleanup Criteria	B119 (0-6")	B119 (24")	B120 (6-12")	B120 (24")	B121 (0-6")	B121 (24")	B122 (0-6")	B122 (24")	B123 (0-6")	B123 (24")	B124 (0-6")	B124 (24")	B125 (0-6")	B125 (24")	B126 (0-6")	B126 (24")	B127 (0-6")	B127 (24")
Sample Date	(mg/kg)	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/8/1999	9/15/1999	9/15/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		0.29J		0.36J		0.35J		2500		1200		710		5700		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		0.18J		0.24J		ND		ND		ND		ND		ND		0.39J	
Acenaphthene	3400	ND		ND		0.19J		ND		ND		ND		ND		ND		0.84J	
Acenaphthylene	NLE	ND		ND		ND		7.2JD		ND		ND		ND		3.2JD		1600	
Anthracene	10,000	ND		ND		ND		3.5JD		ND		ND		ND		1.6JD		3400	
Benzo[a]anthracene	0.9	ND		0.22J		ND		11JD		ND		0.12J		0.18J		5.4JD		13000	
Benzo[a]pyrene	0.66	ND		0.21J		ND		11JD		ND		0.14J		0.19J		5.5JD		12000	
Benzo[b]fluoranthene	0.9	ND		0.17J		ND		7.7JD		ND		0.13J		0.21J		3.7JD		11000	
Benzo[g,h,I]perylene	NLE	ND		ND		ND		3.1JD		ND		ND		ND		2.JD		3700	
Benzo[k]fluoranthene	0.9	ND		0.18J		ND		8.5JD		ND		0.1J		0.2J		3.3JD		9100	
bis(2-Ethylhexyl)phthalate	49	1.5JBD		0.15JB		0.34JB		ND		0.14JB		0.18JB		0.23JB		ND		0.19JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		0.31J		ND		14.D		0.14J		0.18J		0.24J		7.2D		11000	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		0.78JD		2000	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		0.46J	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	0.51JBD		0.55JB		1.4B		1.4JBD		1.9B		1.6B		1.8B		1.8JBD		0.55JB	
Fluoranthene	2300	ND		0.32J		ND		13.D		0.22J		0.19J		0.43J		6.3D		32.D	
Fluorene	2300	ND		ND		0.26J		1.7JD		ND		ND		ND		1.JD		1.J	
Indeno[1,2,3-cd]pyrene	0.9	ND		ND		ND		2.7JD		ND		ND		ND		1.8JD		4400	
Naphthalene	230	ND		ND		ND		ND		0.12J		ND		ND		ND		0.67J	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		0.25J		0.54J		15.D		0.47J		0.17J		0.22J		6.4D		9800	
Pyrene	1700	0.73JD		0.44J		ND		28.D		0.21J		0.25J		0.38J		12.D		29.D	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.023		0.007		0.068		0.057		0.018		ND		0.005		0.036		0.013	
4,4'-DDE	2	0.052		ND		0.041		0.059		0.015		ND		0.005		ND		0.019	
4,4'-DDT	2	0.103		0.006		0.02		0.057		0.003		ND		0.005		0.064		0.021	
alpha-Chlordane	NLE	0.003		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	0.002		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	0.005		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	7840		11100		10200		19500		12000		10500		15100		7010		10500	
Antimony	14	0.571		ND		ND		ND		ND		ND		ND		ND		16.7	
Arsenic	20	5.11		9.25		9.15		38.8		24		9.92		22.1		9.23		20.7	
Barium	700	50.1		26.2		23.2		35.5		28.3		24.3		24.5		24.8		122	
Beryllium	2	0.397		1.03		1.08		2.31		1.69		1.02		2.03		0.691		1.62	
Cadmium	39	0.229		0.181		0.255		0.705		0.39		0.201		0.485		0.283		0.523	
Calcium	NLE	6010		957		936		1800		1820		1610		2460		2690		13900	
Chromium	NLE	41		81.7		84.7		276		176		92.4		215		51.1		140	
Cobalt	NLE	9.12		2.5		2.45		1.45		2.32		2.16		1.47		2.5		27.4	
Copper	600	60		14.3		16.4		41.9		43.5		14.1		14.4		20		277	
Iron	NLE	17900		30800		32500		63500		46100		30200		55200		22200		34000	
Lead	400	57.1		18.7		14.2		38.8		22		11.6		23.6		32		181	
Magnesium	NLE	4750		3240		3270		8570		5590		3180		7120		2290		4760	
Manganese	NLE	162		68.5		63.6		48.6		67.6		135		70.1		86.6		1110	
Mercury	14	ND		ND		ND		ND		ND		0.033		ND		0.029		0.047	
Nickel	250	18.3		7.84		7.94		9.67		6.8		6.8		7.39		6.93		29.9	
Potassium	NLE	1400		6470		6600		18400		12900		6250		15900		3920		4990	
Selenium	63	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	433		154		90.8		160		416		367		104		126		268	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	39.6		51.3		50.1		116		44.6		50.5		65.1		39.5		52.3	
Zinc	1500	144		53.5		46		106		83.7		42.9		68.8		54.7		725	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4790.04	4790.05	4790.06	4790.07	4790.08	4790.09	4790.10	4790.11	4790.12	4790.13	4790.14	4790.15	4790.16	4790.17	4790.18	4790.19	4790.20	4790.21
Field Sample Location	Cleanup Criteria	B128 (0-6")	B128 (24")	B129 (0-6")	B129 (24")	B130 (0-6")	B130 (24")	B131 (0-6")	B131 (24")	B132 (0-6")	B132 (24")	B133 (0-6")	B133 (24")	B134 (0-6")	B134 (24")	B135 (0-6")	B135 (24")	B136 (0-6")	B136 (24")
Sample Date	(mg/kg)	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		0.66JD		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		0.34J		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10000	ND		0.31J		ND		1.7JD		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	ND		1.2J		ND		7.5D		ND		ND		0.12J		ND		ND	
Benzo[a]pyrene	0.66	ND		1.2J		ND		8.6D		0.12J		ND		0.15J		ND		ND	
Benzo[b]fluoranthene	0.9	ND		0.9J		ND		9.5D		ND		ND		0.14J		ND		ND	
Benzo[g,h,I]perylene	NLE	ND		0.65J		ND		2.8JD		ND		ND		ND		ND		ND	
Benzo[k]fluoranthene	0.9	ND		1.0J		ND		8.D		ND		ND		0.12J		ND		ND	
bis(2-Ethylhexyl)phthalate	49	ND		0.3JB		0.16JB		2.JBD		0.15JB		ND		0.14JB		0.26JB		0.2JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	ND		1.4J		ND		8.5D		0.14J		ND		0.18J		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		0.16J		ND		0.92JD		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10000	ND		ND		ND		ND		0.18J		ND		ND		ND		ND	
Di-n-butylphthalate	5700	0.85JBD		0.75JB		1.4B		1.3JBD		1.4B		2.7JBD		1.3B		1.7B		0.74JB	
Fluoranthene	2300	ND		2100		ND		16.D		0.18J		ND		0.18J		ND		0.12J	
Fluorene	2300	ND		0.17J		ND		0.57JD		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	ND		0.58J		ND		3.JD		ND		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	ND		1.4J		ND		7.8D		ND		ND		ND		ND		ND	
Pyrene	1700	ND		2200		ND		14.D		0.19J		ND		0.23J		ND		0.12J	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.004		0.022		ND		0.067		0.007		0.009		0.014		ND		0.013	
4,4'-DDE	2	0.007		0.01		ND		0.064		0.008		0.011		0.017		ND		0.03	
4,4'-DDT	2	0.008		0.013		ND		0.313		0.004		0.021		0.012		ND		0.008	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	13300		16000		16500		5600		17800		17400		15300		13100		13600	
Antimony	14	ND		ND		ND		0.793		ND		ND		ND		ND		ND	
Arsenic	20	25.4		16.1		24.1		6.7		28		26.9		20.6		21.1		17	
Barium	700	22.8		47.9		32.4		45.9		33.8		92.3		40.2		31.4		35.6	
Beryllium	2	1.17		1.59		1.85		0.574		2.07		2.01		1.59		1.05		1.47	
Cadmium	39	0.394		0.426		0.288		0.745		0.34		0.837		0.626		0.558		0.46	
Calcium	NLE	1480		6480		1190		2500		1640		1880		1760		1250		1260	
Chromium	NLE	189		193		221		40.6		241		222		177		134		151	
Cobalt	NLE	0.802		3.38		1.03		4.55		1.37		1.66		2.13		2.87		2.86	
Copper	600	21.3		17.2		21.6		60.6		20.5		49.5		45.6		97.6		316	
Iron	NLE	44100		48600		46300		15100		52200		47600		41400		33700		36900	
Lead	400	18.1		26.6		38.6		126		26.5		77.2		93.2		442		59.8	
Magnesium	NLE	5710		5420		6440		1440		7370		6790		5810		3410		4550	
Manganese	NLE	38		583		38.9		136		67.4		149		97.6		175		54.8	
Mercury	14	0.032		ND		ND		0.094		ND		0.156		0.031		ND		0.047	
Nickel	250	5.64		10.1		5.28		9.94		6.64		7.49		8.27		10.4		8.54	
Potassium	NLE	12900		10700		13800		1950		16000		15000		11500		6710		9740	
Selenium	63	1.05		ND		ND		ND		0.918		ND		ND		1.23		ND	
Silver	110	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Sodium	NLE	251		155		121		120		123		153		138		88.7		181	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	69.4		83.4		102		32.3		106		106		84.4		65.1		78	
Zinc	1500	66.3		129		58		149		78.6		250		125		283		74.5	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	4790.22	4790.23	4790.24	4790.25	4790.26	4790.27	4793.02	4793.03	4793.04	4793.05	4793.06	4793.07	4793.08	4793.09	4793.10	4793.11	4793.12	4793.13
Field Sample Location	Cleanup Criteria	B137 (0-6")	B137 (24")	B138 (0-6")	B138 (24")	B139 (0-6")	B139 (24")	B140 (0-6")	B140 (24")	B141 (0-6")	B141 (24")	B142 (0-6")	B142 (24")	B143 (0-6")	B143 (24")	B144 (0-6")	B144 (24")	B145 (0-6")	B145 (24")
Sample Date	(mg/kg)	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/15/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999
Volatiles (mg/kg)																			
Acetone	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND		ND		ND		ND		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		1500		810		580		0.5J		0.41J		ND
o-Xylene	410		ND		ND		ND		ND		ND		ND		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Anthracene	10000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzo[a]anthracene	0.9	0.28J		ND		0.41J		0.2J		0.18J		0.17J		ND		ND		ND	
Benzo[a]pyrene	0.66	0.31J		ND		0.43J		0.19J		0.15J		0.19J		ND		ND		ND	
Benzo[b]fluoranthene	0.9	0.27J		ND		0.39J		0.2J		0.15J		0.19J		ND		ND		ND	
Benzo[g,h,I]perylene	NLE	0.18J		ND		0.22J		ND		ND		0.13J		ND		ND		ND	
Benzo[k]fluoranthene	0.9	0.24J		ND		0.41J		0.16J		0.13J		0.19J		ND		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.24JB		0.25JB		0.23JB		0.21JB		0.15JB		0.26JB		0.15JB		0.2JB		0.18JB	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	0.33J		ND		0.47J		0.24J		0.2J		0.23J		ND		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10000	ND		0.27J		ND		ND		ND		ND		ND		ND		ND	
Di-n-butylphthalate	5700	1.6B		2.7B		0.73JB		1.5B		0.52JB		1.5B		0.52JB		2.4B		2.2B	
Fluoranthene	2300	0.55J		ND		0.71J		0.41J		0.43J		0.4J		ND		ND		ND	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	0.16J		ND		0.21J		ND		ND		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	0.31J		ND		0.23J		0.28J		0.27J		0.25J		ND		ND		ND	
Pyrene	1700	0.51J		ND		0.71J		0.38J		0.38J		0.37J		ND		ND		ND	
Pesticides/PCBs (mg/kg)																			
4,4'-DDD	3	0.009		0.013		0.069		0.009		0.003		0.03		0.006		ND		ND	
4,4'-DDE	2	0.011		0.01		0.111		0.01		0.003		0.029		0.032		ND		ND	
4,4'-DDT	2	0.012		0.005		0.03		0.016		0.003		0.023		0.036		0.002		0.002	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dieldrin	0.042	ND		ND		ND		ND		ND		0.007		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	18100		12300		12400		12300		14100		13900		13600		13200		16600	
Antimony	14	ND		ND		1.68		ND		ND		ND		ND		ND		ND	
Arsenic	20	22.2		15.4		38.6		17.7		22.3		20.3		20		16.2		24	
Barium	700	34.6		38		133		29		24.8		32.5		11.3		21.8		9.04	
Beryllium	2	2.19		1.26		1.09		1.47		1.96		1.85		1.11		1.19		2.44	
Cadmium	39	0.453		0.627		25.2		0.379		0.54		0.555		0.233		0.282		0.514	
Calcium	NLE	1420		2120		1530		998		1830		1260		651		1570		515	
Chromium	NLE	204		122		215		162		207		193		148		134		269	
Cobalt	NLE	1.6		3.43		4.2		1.6		1.29		1.31		0.77		1.2		0.664	
Copper	600	21.4		27.2		243		23		10.2		28		12.4		13.6		6.31	
Iron	NLE	52500		35000		132000		36200		48500		42900		29900		29400		55000	
Lead	400	48.4		46		1090		28.6		30		17.9		5.72		17.1		9.35	
Magnesium	NLE	7510		4410		4110		4960		6480		5480		3660		3830		7780	
Manganese	NLE	50		79.4		332		35.6		43.7		47.3		31.2		52.3		19.3	
Mercury	14	0.083		0.06		0.078		0.061		ND		ND		ND		ND		ND	
Nickel	250	6.92		9.93		13.1		6.22		6.64		5.77		3.74		4.62		5.7	
Potassium	NLE	17500		8520		8990		10700		14700		12500		7330		7650		18800	
Selenium	63	ND		ND		1.27		ND		ND		ND		ND		ND		ND	
Silver	110	ND		ND		1.33		ND		ND		ND		ND		ND		ND	
Sodium	NLE	134		166		348		264		122		103		130		67.4		102	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	110		74.1		90.6		76		80		82.7		73		63.9		111	
Zinc	1500	79.6		94.8		6530		50.6		80.3		98.3		42.2		59.5		57.5	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-1
Soil Sampling Results (March 1998 to September 1999)
M-12 Landfill
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria (mg/kg)	4793.14	4793.15	4793.16	4793.17	4793.18	4793.19
Field Sample Location		B146 (0-6")	B146 (24")	B147 (0-6")	B147 (24")	B148 (0-6")	B148 (24")
Sample Date		9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999	9/20/1999
Volatiles (mg/kg)							
Acetone	1000		ND		ND		ND
Benzene	3		ND		ND		ND
cis-1,2-Dichloroethene	79		ND		ND		ND
Ethylbenzene	1000		ND		ND		ND
m+p-Xylenes	410		ND		ND		ND
Methylene Chloride	49		ND		ND		0.34J
o-Xylene	410		ND		ND		ND
Toluene	1000		ND		ND		ND
Vinyl Chloride	2		ND		ND		ND
Semi-Volatiles (mg/kg)							
2-Methylnaphthalene	NLE	ND		ND		ND	
Acenaphthene	3400	ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND	
Anthracene	10000	ND		ND		ND	
Benzo[a]anthracene	0.9	0.35J		ND		ND	
Benzo[a]pyrene	0.66	0.34J		ND		ND	
Benzo[b]fluoranthene	0.9	0.29J		ND		ND	
Benzo[g,h,I]perylene	NLE	0.18J		ND		ND	
Benzo[k]fluoranthene	0.9	0.29J		ND		ND	
bis(2-Ethylhexyl)phthalate	49	0.19JB		0.22JB		0.22JB	
Butylbenzylphthalate	1100	ND		ND		ND	
Chrysene	9	0.4J		ND		ND	
Dibenz[a,h]anthracene	0.66	ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND	
Diethylphthalate	10000	ND		ND		ND	
Di-n-butylphthalate	5700	1.7B		1.6B		1.1JB	
Fluoranthene	2300	0.63J		ND		ND	
Fluorene	2300	ND		ND		ND	
Indeno[1,2,3-cd]pyrene	0.9	0.16J		ND		ND	
Naphthalene	230	ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND	
Phenanthrene	NLE	0.41J		ND		ND	
Pyrene	1700	0.65J		ND		ND	
Pesticides/PCBs (mg/kg)							
4,4'-DDD	3	ND		0.018		0.008	
4,4'-DDE	2	ND		0.014		0.005	
4,4'-DDT	2	0.057		0.079		0.026	
alpha-Chlordane	NLE	ND		ND		ND	
Dieldrin	0.042	ND		0.032		0.031	
gamma-Chlordane	NLE	ND		ND		ND	
Metals (mg/kg)							
Aluminum	NLE	15600		14800		8510	
Antimony	14	ND		ND		ND	
Arsenic	20	22.5		15.5		7.97	
Barium	700	31.6		30.2		17.6	
Beryllium	2	1.88		1.52		0.81	
Cadmium	39	0.526		0.562		0.34	
Calcium	NLE	1160		1540		2050	
Chromium	NLE	214		144		69.6	
Cobalt	NLE	1.43		2.42		2.2	
Copper	600	17.5		4.5		7.79	
Iron	NLE	46600		48200		27300	
Lead	400	25.1		9.06		7.95	
Magnesium	NLE	6440		4500		2250	
Manganese	NLE	49.1		32.1		42.2	
Mercury	14	0.061		ND		ND	
Nickel	250	6.05		8.02		6.32	
Potassium	NLE	14700		10800		4940	
Selenium	63	ND		ND		ND	
Silver	110	ND		ND		ND	
Sodium	NLE	87.8		120		59.9	
Thallium	2	ND		ND		ND	
Vanadium	370	94.7		81.4		41.6	
Zinc	1500	67.4		54.1		36	

NOTE: ND = Not Detected;
Shaded = Exceeds NJDEP Cleanup Criteria;
B = Detected in Blank; J = Estimated Result;
D = Diluted Sample; NLE = No Limit Established;
J = Compound Identified Below Detection Limit
Cleanup Criteria = Residential Direct Contact Soil Cleanup Criteria (RDCSCC) per N.J.A.C. 7:9-6;
mg/kg = milligrams per kilogram;
Results reported in ug/kg presented in mg/kg.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
SVOCs - 17 Borings	
B08	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Indeno(1,2,3-cd)pyrene
B09	
	Benzo(a)pyrene
B21	
	Benzo(a)pyrene
B25	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
B32	
	Benzo(a)pyrene
B33	
	Benzo(a)pyrene
B42	
	Benzo(a)pyrene
	Benzo(k)fluoranthene
B71	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
B104	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B110	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Indeno(1,2,3-cd)pyrene
B112	
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
B114	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B122	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Chrysene
	Indeno(1,2,3-cd)pyrene
B126	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B127	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Chrysene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B129	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(k)fluoranthene
B131	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
Metals - 53 Borings	
B01	
	Mercury
B09	
	Arsenic

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
B21	
	Lead
B27	
	Arsenic
B29	
	Arsenic
B52	
	Arsenic
	Beryllium
B53	
	Beryllium
B54	
	Arsenic
	Beryllium
B57	
	Arsenic
B58	
	Arsenic
B64	
	Arsenic
	Beryllium
B65	
	Arsenic
	Beryllium
B66	
	Arsenic
	Beryllium
B70	
	Arsenic
	Beryllium
B71	
	Arsenic
B72	
	Arsenic
	Beryllium
B75	
	Arsenic
B77	
	Arsenic
	Beryllium
B78	
	Arsenic
B83	
	Arsenic
	Beryllium
B84	

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
	Arsenic
	Beryllium
B86	
	Arsenic
	Beryllium
B87	
	Arsenic
	Beryllium
B89	
	Arsenic
B92	
	Arsenic
B93	
	Arsenic
	Beryllium
B94	
	Arsenic
B95	
	Arsenic
B100	
	Arsenic
B101	
	Arsenic
B102	
	Arsenic
	Beryllium
B103	
	Arsenic
B107	
	Arsenic
	Beryllium
B108	
	Arsenic
B109	
	Arsenic
B114	
	Arsenic
B118	
	Arsenic
B122	
	Arsenic
	Beryllium
B123	
	Arsenic
B125	
	Arsenic

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-12 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
	Beryllium
B127	
	Antimony
	Arsenic
B128	
	Arsenic
B130	
	Arsenic
B132	
	Arsenic
	Beryllium
B133	
	Arsenic
	Beryllium
B134	
	Arsenic
B135	
	Arsenic
	Lead
B137	
	Arsenic
	Beryllium
B139	
	Arsenic
	Lead
	Zinc
B141	
	Arsenic
B142	
	Arsenic
B145	
	Arsenic
	Beryllium
B146	
	Arsenic

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-3
Laboratory Analysis Exceedance Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	RDCSC	Units	Number of Exceedances	Minimum Exceedance	Boring ID (Min)	Maximum Exceedance	Boring ID (Max)	Average Exceedance
SVOCs								
Benzo(a)anthracene	0.9	mg/kg	11	1.2	B129	13	B127	4.76
Benzo(a)pyrene	0.66	mg/kg	17	0.74	B09	12	B127	3.45
Benzo(b)fluoranthene	0.9	mg/kg	11	1.1	B25	11	B127	4.27
Benzo(k)fluoranthene	0.9	mg/kg	13	0.99	B42	9.1	B127	3.54
Chrysene	9	mg/kg	2	11	B127	14	B122	12.50
Dibenz(a,h)anthracene	0.66	mg/kg	5	0.68	B114	2	B127	1.02
Indeno(1,2,3-cd)pyrene	0.9	mg/kg	8	0.96	B110	4.4	B127	2.21
Metals								
Antimony	14	mg/kg	1	16.7	B127	16.7	B127	16.70
Arsenic	20	mg/kg	50	20.1	B95	51.3	B64	27.13
Beryllium	2	mg/kg	22	2.01	B133	2.81	B107	2.30
Lead	400	mg/kg	3	404.4	B21	1090	B139	645.47
Mercury	14	mg/kg	1	29.909	B01	29.909	B01	29.91
Zinc	1500	mg/kg	1	6530	B139	6530	B139	6530.00

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-4
Compliance Analysis Method Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Analysis Decision
SVOCs				
Benzo(a)anthracene	AREA SVOC-1	0.9	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 10X (for criterion<10 ppm).
Benzo(a)anthracene	AREA SVOC-3	0.9	mg/kg	Compliance averaging used.
Benzo(a)pyrene	AREA SVOC-1	0.66	mg/kg	Compliance averaging not allowed due to exceedance of 0.9 ppm limit for Benzo(a)pyrene.
Benzo(a)pyrene	AREA SVOC-2	0.66	mg/kg	Compliance averaging not allowed due to exceedance of 0.9 ppm limit for Benzo(a)pyrene.
Benzo(a)pyrene	AREA SVOC-3	0.66	mg/kg	Compliance averaging not allowed due to exceedance of 0.9 ppm limit for Benzo(a)pyrene.
Benzo(b)fluoranthene	AREA SVOC-1	0.9	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 10X (for criterion<10 ppm).
Benzo(b)fluoranthene	AREA SVOC-3	0.9	mg/kg	Compliance averaging used.
Benzo(k)fluoranthene	AREA SVOC-1	0.9	mg/kg	Compliance averaging used.
Benzo(k)fluoranthene	AREA SVOC-2	0.9	mg/kg	Compliance averaging used.
Benzo(k)fluoranthene	AREA SVOC-3	0.9	mg/kg	Compliance averaging used.
Chrysene	AREA SVOC-1	9	mg/kg	Compliance averaging used.
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	mg/kg	Compliance averaging used.
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	mg/kg	Compliance averaging used.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-4
Compliance Analysis Method Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Analysis Decision
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	mg/kg	Compliance averaging used.
Metals				
Antimony	AREA METALS-1	14	mg/kg	Compliance averaging used.
Arsenic	AREA METALS-1	20	mg/kg	Compliance averaging not allowed due to exceedance of RDCSCC and site-specific maximum (22.9 mg/kg, Weston-1995).
Arsenic	AREA METALS-2	20	mg/kg	Compliance averaging not allowed due to exceedance of RDCSCC and site-specific maximum (22.9 mg/kg, Weston-1995).
Beryllium	AREA METALS-1	2	mg/kg	Compliance averaging not allowed due to exceedance of 2 mg/kg limit for Beryllium.
Lead	AREA METALS-1	400	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 2X (for criterion>100 ppm).
Lead	AREA METALS-2	400	mg/kg	Compliance averaging used.
Mercury	AREA METALS-2	14	mg/kg	Compliance averaging used.
Zinc	AREA METALS-1	1500	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 2X (for criterion>100 ppm).

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
SVOCs									
Benzo(a)anthracene									
	AREA SVOC-3								
Benzo(a)anthracene	AREA SVOC-3	0.9	B08	3.D	mg/kg	yes			3
Benzo(a)anthracene	AREA SVOC-3	0.9	B09	0.64	mg/kg	no			0.64
Benzo(a)anthracene	AREA SVOC-3	0.9	B10	0.13	mg/kg	no			0.13
Benzo(a)anthracene	AREA SVOC-3	0.9	B21	ND	mg/kg	no	1.1		0.55
Benzo(a)anthracene	AREA SVOC-3	0.9	B22	0.088J	mg/kg	no			0.088
Benzo(a)anthracene	AREA SVOC-3	0.9	B23	0.54	mg/kg	no			0.54
Benzo(a)anthracene	AREA SVOC-3	0.9	B24	0.065J	mg/kg	no			0.065
Benzo(a)anthracene	AREA SVOC-3	0.9	B25	1.9	mg/kg	yes			1.9
						Compliance Average Result:			**0.864**
Benzo(b)fluoranthene									
	AREA SVOC-3								
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B08	1.5D	mg/kg	yes			1.5
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B09	0.61	mg/kg	no			0.61
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B10	0.16	mg/kg	no			0.16
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B21	ND	mg/kg	no	1.4		0.7
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B22	0.060J	mg/kg	no			0.06
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B23	0.49	mg/kg	no			0.49
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B24	0.068J	mg/kg	no			0.068
Benzo(b)fluoranthene	AREA SVOC-3	0.9	B25	1.1	mg/kg	yes			1.1
						Compliance Average Result:			**0.586**
Benzo(k)fluoranthene									
	AREA SVOC-1								
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B63	0.12J	mg/kg	no			0.12
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B64	0.39J	mg/kg	no			0.39
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B70	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B71	1.1	mg/kg	yes			1.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B75	0.43J	mg/kg	no			0.43
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B76	0.32J	mg/kg	no			0.32
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B77	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B82	ND	mg/kg	no	1.2		0.6

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B83	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B88	0.13J	mg/kg	no			0.13
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B89	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B90	ND	mg/kg	no	1		0.5
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B96	0.66J	mg/kg	no			0.66
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B97	0.23J	mg/kg	no			0.23
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B98	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B99	0.16J	mg/kg	no			0.16
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B103	0.21J	mg/kg	no			0.21
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B104	3	mg/kg	yes			3
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B105	0.45J	mg/kg	no			0.45
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B106	0.27J	mg/kg	no			0.27
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B107	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B109	ND	mg/kg	no	1.2		0.6
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B110	2.2	mg/kg	yes			2.2
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B111	0.32J	mg/kg	no			0.32
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B112	1.3	mg/kg	yes			1.3
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B113	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B114	2.8	mg/kg	yes			2.8
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B115	0.29J	mg/kg	no			0.29
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B116	0.32J	mg/kg	no			0.32
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B117	0.27J	mg/kg	no			0.27
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B118	ND	mg/kg	no	1.2		0.6
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B119	ND	mg/kg	no	5	5	
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B120	0.18J	mg/kg	no			0.18
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B121	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B122	8.5JD	mg/kg	yes			8.5
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B123	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B124	0.1J	mg/kg	no			0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B125	0.2J	mg/kg	no			0.2
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B126	3.3JD	mg/kg	yes			3.3
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B127	9.1	mg/kg	yes			9.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B128	ND	mg/kg	no	5.3	5	
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B129	1.0J	mg/kg	yes			1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B131	8.D	mg/kg	yes			8
						Compliance Average Result:			**1.283**
	AREA SVOC-2								
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B31	0.18J	mg/kg	no			0.18
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B32	0.58	mg/kg	no			0.58
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B33	0.75	mg/kg	no			0.75

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B34	0.59	mg/kg	no			0.59
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B41	0.21	mg/kg	no			0.21
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B42	0.99	mg/kg	yes			0.99
Benzo(k)fluoranthene	AREA SVOC-2	0.9	B43	0.67	mg/kg	no			0.67
						Compliance Average Result:			**0.567**
	AREA SVOC-3								
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B08	2.8D	mg/kg	yes			2.8
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B09	0.65	mg/kg	no			0.65
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B10	0.3	mg/kg	no			0.3
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B21	ND	mg/kg	no	1		0.5
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B22	0.1J	mg/kg	no			0.1
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B23	0.42	mg/kg	no			0.42
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B24	0.081J	mg/kg	no			0.081
Benzo(k)fluoranthene	AREA SVOC-3	0.9	B25	1.9	mg/kg	yes			1.9
						Compliance Average Result:			**0.844**
Chrysene									
	AREA SVOC-1								
Chrysene	AREA SVOC-1	9	B63	0.16J	mg/kg	no			0.16
Chrysene	AREA SVOC-1	9	B64	0.78J	mg/kg	no			0.78
Chrysene	AREA SVOC-1	9	B70	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B71	1.4	mg/kg	no			1.4
Chrysene	AREA SVOC-1	9	B75	0.5J	mg/kg	no			0.5
Chrysene	AREA SVOC-1	9	B76	0.3J	mg/kg	no			0.3
Chrysene	AREA SVOC-1	9	B77	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B82	ND	mg/kg	no	1.2		0.6
Chrysene	AREA SVOC-1	9	B83	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B88	0.19J	mg/kg	no			0.19
Chrysene	AREA SVOC-1	9	B89	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B90	ND	mg/kg	no	1		0.5
Chrysene	AREA SVOC-1	9	B96	1.1J	mg/kg	no			1.1
Chrysene	AREA SVOC-1	9	B97	0.27J	mg/kg	no			0.27
Chrysene	AREA SVOC-1	9	B98	0.13J	mg/kg	no			0.13
Chrysene	AREA SVOC-1	9	B99	0.23J	mg/kg	no			0.23
Chrysene	AREA SVOC-1	9	B103	0.26J	mg/kg	no			0.26
Chrysene	AREA SVOC-1	9	B104	2.6	mg/kg	no			2.6
Chrysene	AREA SVOC-1	9	B105	0.66J	mg/kg	no			0.66
Chrysene	AREA SVOC-1	9	B106	0.35J	mg/kg	no			0.35

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Chrysene	AREA SVOC-1	9	B107	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B109	ND	mg/kg	no	1.2		0.6
Chrysene	AREA SVOC-1	9	B110	1.9	mg/kg	no			1.9
Chrysene	AREA SVOC-1	9	B111	0.5J	mg/kg	no			0.5
Chrysene	AREA SVOC-1	9	B112	1.8	mg/kg	no			1.8
Chrysene	AREA SVOC-1	9	B113	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B114	3.9	mg/kg	no			3.9
Chrysene	AREA SVOC-1	9	B115	0.4J	mg/kg	no			0.4
Chrysene	AREA SVOC-1	9	B116	0.41J	mg/kg	no			0.41
Chrysene	AREA SVOC-1	9	B117	0.37J	mg/kg	no			0.37
Chrysene	AREA SVOC-1	9	B118	ND	mg/kg	no	1.2		0.6
Chrysene	AREA SVOC-1	9	B119	ND	mg/kg	no	5	5	
Chrysene	AREA SVOC-1	9	B120	0.31J	mg/kg	no			0.31
Chrysene	AREA SVOC-1	9	B121	ND	mg/kg	no	1.1		0.55
Chrysene	AREA SVOC-1	9	B122	14.D	mg/kg	yes			14
Chrysene	AREA SVOC-1	9	B123	0.14J	mg/kg	no	1.1		0.14
Chrysene	AREA SVOC-1	9	B124	0.18J	mg/kg	no			0.18
Chrysene	AREA SVOC-1	9	B125	0.24J	mg/kg	no			0.24
Chrysene	AREA SVOC-1	9	B126	7.2D	mg/kg	no			7.2
Chrysene	AREA SVOC-1	9	B127	11	mg/kg	yes			11
Chrysene	AREA SVOC-1	9	B128	ND	mg/kg	no	5.3	5	
Chrysene	AREA SVOC-1	9	B129	1.4J	mg/kg	no			1.4
Chrysene	AREA SVOC-1	9	B131	8.5D	mg/kg	no			8.5
						Compliance Average Result:			**1.642**

Dibenz(a,h)anthracene

AREA SVOC-1

Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B63	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B64	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B70	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B71	0.18J	mg/kg	no			0.18
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B75	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B76	ND	mg/kg	no	1		0.5
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B77	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B82	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B83	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B88	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B89	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B90	ND	mg/kg	no	1		0.5

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B96	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B97	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B98	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B99	ND	mg/kg	no	1		0.5
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B103	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B104	0.73J	mg/kg	yes			0.73
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B105	ND	mg/kg	no	1		0.5
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B106	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B107	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B109	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B110	0.35J	mg/kg	no			0.35
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B111	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B112	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B113	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B114	0.68J	mg/kg	yes			0.68
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B115	ND	mg/kg	no	1		0.5
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B116	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B117	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B118	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B119	ND	mg/kg	no	5	5	
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B120	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B121	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B122	ND	mg/kg	no	12		6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B123	ND	mg/kg	no	1.1		0.55
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B124	ND	mg/kg	no	1		0.5
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B125	ND	mg/kg	no	1.2		0.6
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B126	0.78JD	mg/kg	yes			0.78
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B127	2	mg/kg	yes			2
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B128	ND	mg/kg	no	5.3	5	
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B129	0.16J	mg/kg	no			0.16
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	B131	0.92JD	mg/kg	yes			0.92
						Compliance Average Result:			**0.720**

Indeno(1,2,3-cd)pyrene

AREA SVOC-1

Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B63	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B64	0.21J	mg/kg	no			0.21
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B70	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B71	0.62J	mg/kg	no			0.62

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B75	0.23J	mg/kg	no			0.23
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B76	0.17J	mg/kg	no			0.17
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B77	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B82	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B83	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B88	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B89	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B90	ND	mg/kg	no	1		0.5
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B96	0.17J	mg/kg	no			0.17
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B97	0.19J	mg/kg	no			0.19
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B98	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B99	ND	mg/kg	no	1		0.5
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B103	0.12J	mg/kg	no			0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B104	1.9	mg/kg	yes			1.9
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B105	0.24J	mg/kg	no			0.24
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B106	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B107	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B109	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B110	0.96J	mg/kg	yes			0.96
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B111	0.2J	mg/kg	no			0.2
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B112	0.45J	mg/kg	no			0.45
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B113	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B114	1.7	mg/kg	yes			1.7
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B115	0.16J	mg/kg	no			0.16
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B116	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B117	0.13J	mg/kg	no			0.13
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B118	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B119	ND	mg/kg	no	5	5	
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B120	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B121	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B122	2.7JD	mg/kg	yes			2.7
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B123	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B124	ND	mg/kg	no	1		0.5
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B125	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B126	1.8JD	mg/kg	yes			1.8
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B127	4.4	mg/kg	yes			4.4
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B128	ND	mg/kg	no	5.3	5	
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B129	0.58J	mg/kg	no			0.58
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B131	3.JD	mg/kg	yes			3
						Compliance Average Result:			**0.770**

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
	AREA SVOC-3								
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B08	1.2D	mg/kg	yes			1.2
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B09	0.37	mg/kg	no			0.37
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B10	0.16	mg/kg	no			0.16
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B21	ND	mg/kg	no	1.2		0.6
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B22	ND	mg/kg	no	0.11		0.055
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B23	0.33	mg/kg	no			0.33
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B24	ND	mg/kg	no	0.12		0.06
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	B25	0.89	mg/kg	no			0.89
						Compliance Average Result:			**0.458**

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Metals									
Antimony									
	AREA METALS-1								
Antimony	AREA METALS-1	14	B52	ND	mg/kg	no	0.446		0.223
Antimony	AREA METALS-1	14	B53	ND	mg/kg	no	0.413		0.2065
Antimony	AREA METALS-1	14	B54	1.12	mg/kg	no			1.12
Antimony	AREA METALS-1	14	B57	ND	mg/kg	no	0.507		0.2535
Antimony	AREA METALS-1	14	B58	ND	mg/kg	no	0.402		0.201
Antimony	AREA METALS-1	14	B59	ND	mg/kg	no	0.457		0.2285
Antimony	AREA METALS-1	14	B64	ND	mg/kg	no	0.534		0.267
Antimony	AREA METALS-1	14	B65	ND	mg/kg	no	0.529		0.2645
Antimony	AREA METALS-1	14	B66	ND	mg/kg	no	0.523		0.2615
Antimony	AREA METALS-1	14	B70	ND	mg/kg	no	0.485		0.2425
Antimony	AREA METALS-1	14	B71	ND	mg/kg	no	0.471		0.2355
Antimony	AREA METALS-1	14	B72	ND	mg/kg	no	0.493		0.2465
Antimony	AREA METALS-1	14	B73	ND	mg/kg	no	0.415		0.2075
Antimony	AREA METALS-1	14	B75	ND	mg/kg	no	0.483		0.2415
Antimony	AREA METALS-1	14	B76	ND	mg/kg	no	0.437		0.2185
Antimony	AREA METALS-1	14	B77	ND	mg/kg	no	0.496		0.248
Antimony	AREA METALS-1	14	B78	ND	mg/kg	no	0.452		0.226
Antimony	AREA METALS-1	14	B79	ND	mg/kg	no	0.451		0.2255
Antimony	AREA METALS-1	14	B81	ND	mg/kg	no	0.534		0.267
Antimony	AREA METALS-1	14	B82	ND	mg/kg	no	0.548		0.274
Antimony	AREA METALS-1	14	B83	ND	mg/kg	no	0.449		0.2245
Antimony	AREA METALS-1	14	B84	ND	mg/kg	no	0.507		0.2535
Antimony	AREA METALS-1	14	B85	ND	mg/kg	no	0.454		0.227
Antimony	AREA METALS-1	14	B86	ND	mg/kg	no	0.498		0.249
Antimony	AREA METALS-1	14	B87	ND	mg/kg	no	0.462		0.231
Antimony	AREA METALS-1	14	B88	ND	mg/kg	no	0.464		0.232
Antimony	AREA METALS-1	14	B89	ND	mg/kg	no	0.493		0.2465
Antimony	AREA METALS-1	14	B90	ND	mg/kg	no	0.46		0.23
Antimony	AREA METALS-1	14	B91	ND	mg/kg	no	0.477		0.2385
Antimony	AREA METALS-1	14	B92	ND	mg/kg	no	0.51		0.255
Antimony	AREA METALS-1	14	B93	ND	mg/kg	no	0.529		0.2645
Antimony	AREA METALS-1	14	B94	ND	mg/kg	no	0.455		0.2275
Antimony	AREA METALS-1	14	B95	ND	mg/kg	no	0.414		0.207
Antimony	AREA METALS-1	14	B96	1.88	mg/kg	no			1.88
Antimony	AREA METALS-1	14	B97	ND	mg/kg	no	0.413		0.2065

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Antimony	AREA METALS-1	14	B98	ND	mg/kg	no	0.334		0.167
Antimony	AREA METALS-1	14	B99	ND	mg/kg	no	0.42		0.21
Antimony	AREA METALS-1	14	B100	ND	mg/kg	no	0.446		0.223
Antimony	AREA METALS-1	14	B101	0.455	mg/kg	no			0.455
Antimony	AREA METALS-1	14	B102	ND	mg/kg	no	0.463		0.2315
Antimony	AREA METALS-1	14	B103	0.461	mg/kg	no			0.461
Antimony	AREA METALS-1	14	B104	ND	mg/kg	no	0.431		0.2155
Antimony	AREA METALS-1	14	B105	ND	mg/kg	no	0.416		0.208
Antimony	AREA METALS-1	14	B106	ND	mg/kg	no	0.461		0.2305
Antimony	AREA METALS-1	14	B107	ND	mg/kg	no	0.456		0.228
Antimony	AREA METALS-1	14	B108	ND	mg/kg	no	0.448		0.224
Antimony	AREA METALS-1	14	B109	ND	mg/kg	no	0.431		0.2155
Antimony	AREA METALS-1	14	B110	ND	mg/kg	no	0.384		0.192
Antimony	AREA METALS-1	14	B111	ND	mg/kg	no	0.431		0.2155
Antimony	AREA METALS-1	14	B112	ND	mg/kg	no	0.486		0.243
Antimony	AREA METALS-1	14	B113	ND	mg/kg	no	0.467		0.2335
Antimony	AREA METALS-1	14	B114	ND	mg/kg	no	0.499		0.2495
Antimony	AREA METALS-1	14	B115	ND	mg/kg	no	0.434		0.217
Antimony	AREA METALS-1	14	B116	ND	mg/kg	no	0.453		0.2265
Antimony	AREA METALS-1	14	B117	ND	mg/kg	no	0.438		0.219
Antimony	AREA METALS-1	14	B118	ND	mg/kg	no	0.463		0.2315
Antimony	AREA METALS-1	14	B119	0.571	mg/kg	no			0.571
Antimony	AREA METALS-1	14	B120	ND	mg/kg	no	0.424		0.212
Antimony	AREA METALS-1	14	B121	ND	mg/kg	no	0.456		0.228
Antimony	AREA METALS-1	14	B122	ND	mg/kg	no	0.488		0.244
Antimony	AREA METALS-1	14	B123	ND	mg/kg	no	0.358		0.179
Antimony	AREA METALS-1	14	B124	ND	mg/kg	no	0.367		0.1835
Antimony	AREA METALS-1	14	B125	ND	mg/kg	no	0.498		0.249
Antimony	AREA METALS-1	14	B126	ND	mg/kg	no	0.47		0.235
Antimony	AREA METALS-1	14	B127	16.7	mg/kg	yes			16.7
Antimony	AREA METALS-1	14	B128	ND	mg/kg	no	0.446		0.223
Antimony	AREA METALS-1	14	B129	ND	mg/kg	no	0.413		0.2065
Antimony	AREA METALS-1	14	B130	ND	mg/kg	no	0.478		0.239
Antimony	AREA METALS-1	14	B132	ND	mg/kg	no	0.444		0.222
Antimony	AREA METALS-1	14	B133	ND	mg/kg	no	0.463		0.2315
Antimony	AREA METALS-1	14	B134	ND	mg/kg	no	0.474		0.237
Antimony	AREA METALS-1	14	B135	ND	mg/kg	no	0.488		0.244
Antimony	AREA METALS-1	14	B137	ND	mg/kg	no	0.48		0.24
Antimony	AREA METALS-1	14	B138	ND	mg/kg	no	0.368		0.184
Antimony	AREA METALS-1	14	B139	1.68	mg/kg	no			1.68
Antimony	AREA METALS-1	14	B141	ND	mg/kg	no	0.449		0.2245

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Antimony	AREA METALS-1	14	B142	ND	mg/kg	no	0.529		0.2645
Antimony	AREA METALS-1	14	B143	ND	mg/kg	no	0.412		0.206
Antimony	AREA METALS-1	14	B145	ND	mg/kg	no	0.487		0.2435
Antimony	AREA METALS-1	14	B146	ND	mg/kg	no	0.415		0.2075
Antimony	AREA METALS-1	14	B147	ND	mg/kg	no	0.363		0.1815
Antimony	AREA METALS-1	14	B148	ND	mg/kg	no	0.442		0.221
						Compliance Average Result:			**0.488**
Lead									
	AREA METALS-2								
Lead	AREA METALS-2	400	B01	52.03	mg/kg	no			52.03
Lead	AREA METALS-2	400	B02	53.54	mg/kg	no			53.54
Lead	AREA METALS-2	400	B03	65.37	mg/kg	no			65.37
Lead	AREA METALS-2	400	B04	33.97	mg/kg	no			33.97
Lead	AREA METALS-2	400	B05	32.95	mg/kg	no			32.95
Lead	AREA METALS-2	400	B07	77.75	mg/kg	no			77.75
Lead	AREA METALS-2	400	B08	84.35	mg/kg	no			84.35
Lead	AREA METALS-2	400	B09	123.5	mg/kg	no			123.5
Lead	AREA METALS-2	400	B15	21.63	mg/kg	no			21.63
Lead	AREA METALS-2	400	B16	75.93	mg/kg	no			75.93
Lead	AREA METALS-2	400	B17	83.68	mg/kg	no			83.68
Lead	AREA METALS-2	400	B18	4.709	mg/kg	no			4.709
Lead	AREA METALS-2	400	B19	149.2	mg/kg	no			149.2
Lead	AREA METALS-2	400	B20	9.944	mg/kg	no			9.944
Lead	AREA METALS-2	400	B20	9.944	mg/kg	no			9.944
Lead	AREA METALS-2	400	B21	404.4	mg/kg	yes			404.4
Lead	AREA METALS-2	400	B22	22.43	mg/kg	no			22.43
						Compliance Average Result:			**76.784**
Mercury									
	AREA METALS-2								
Mercury	AREA METALS-2	14	B01	29.909	mg/kg	yes			29.909
Mercury	AREA METALS-2	14	B02	0.39	mg/kg	no			0.39
Mercury	AREA METALS-2	14	B03	0.21	mg/kg	no			0.21
Mercury	AREA METALS-2	14	B04	0.051	mg/kg	no			0.051
Mercury	AREA METALS-2	14	B05	0.05	mg/kg	no			0.05
Mercury	AREA METALS-2	14	B07	0.234	mg/kg	no			0.234
Mercury	AREA METALS-2	14	B08	0.012	mg/kg	no			0.012

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Mercury	AREA METALS-2	14	B09	1.461	mg/kg	no			1.461
Mercury	AREA METALS-2	14	B15	0.045	mg/kg	no			0.045
Mercury	AREA METALS-2	14	B16	0.258	mg/kg	no			0.258
Mercury	AREA METALS-2	14	B17	0.021	mg/kg	no			0.021
Mercury	AREA METALS-2	14	B18	0.017	mg/kg	no			0.017
Mercury	AREA METALS-2	14	B19	0.138	mg/kg	no			0.138
Mercury	AREA METALS-2	14	B20	0.058	mg/kg	no			0.058
Mercury	AREA METALS-2	14	B20	0.058	mg/kg	no			0.058
Mercury	AREA METALS-2	14	B21	0.493	mg/kg	no			0.493
Mercury	AREA METALS-2	14	B22	0.683	mg/kg	no			0.683
						Compliance Average Result:			**2.005**

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-6
Compliance Analysis Results Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
SVOCs						
Benzo(a)anthracene	AREA SVOC-1	0.9	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(a)anthracene	AREA SVOC-3	0.9	mg/kg	Yes	0.864	Compliance average below RDCSCC. No Further Action is warranted.
Benzo(a)pyrene	AREA SVOC-1	0.66	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(a)pyrene	AREA SVOC-2	0.66	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(a)pyrene	AREA SVOC-3	0.66	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(b)fluoranthene	AREA SVOC-1	0.9	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(b)fluoranthene	AREA SVOC-3	0.9	mg/kg	Yes	0.586	Compliance average below RDCSCC. No Further Action is warranted.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Benzo(k)fluoranthene	AREA SVOC-1	0.9	mg/kg	Yes	1.283	Compliance average marginally above RDCSCC (within 1 to 2 mg/kg). No Further Action is warranted.
Benzo(k)fluoranthene	AREA SVOC-2	0.9	mg/kg	Yes	0.567	Compliance average below RDCSCC. No Further Action is warranted.
Benzo(k)fluoranthene	AREA SVOC-3	0.9	mg/kg	Yes	0.844	Compliance average below RDCSCC. No Further Action is warranted.
Chrysene	AREA SVOC-1	9	mg/kg	Yes	1.642	Compliance average below RDCSCC. No Further Action is warranted.
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	mg/kg	Yes	0.720	Compliance average marginally above RDCSCC (within 1 to 2 mg/kg). No Further Action is warranted.
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	mg/kg	Yes	0.770	Compliance average below RDCSCC. No Further Action is warranted.
Indeno(1,2,3-cd)pyrene	AREA SVOC-3	0.9	mg/kg	Yes	0.458	Compliance average below RDCSCC. No Further Action is warranted.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Metals						
Antimony	AREA METALS-1	14	mg/kg	Yes	0.488	Compliance average below RDCSCC. No Further Action is warranted.
Arsenic	AREA METALS-1	20	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Arsenic	AREA METALS-2	20	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Beryllium	AREA METALS-1	2	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Lead	AREA METALS-1	400	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Lead	AREA METALS-2	400	mg/kg	Yes	76.784	Compliance average below RDCSCC. No Further Action is warranted.
Mercury	AREA METALS-2	14	mg/kg	Yes	2.005	Compliance average below RDCSCC. No Further Action is warranted.

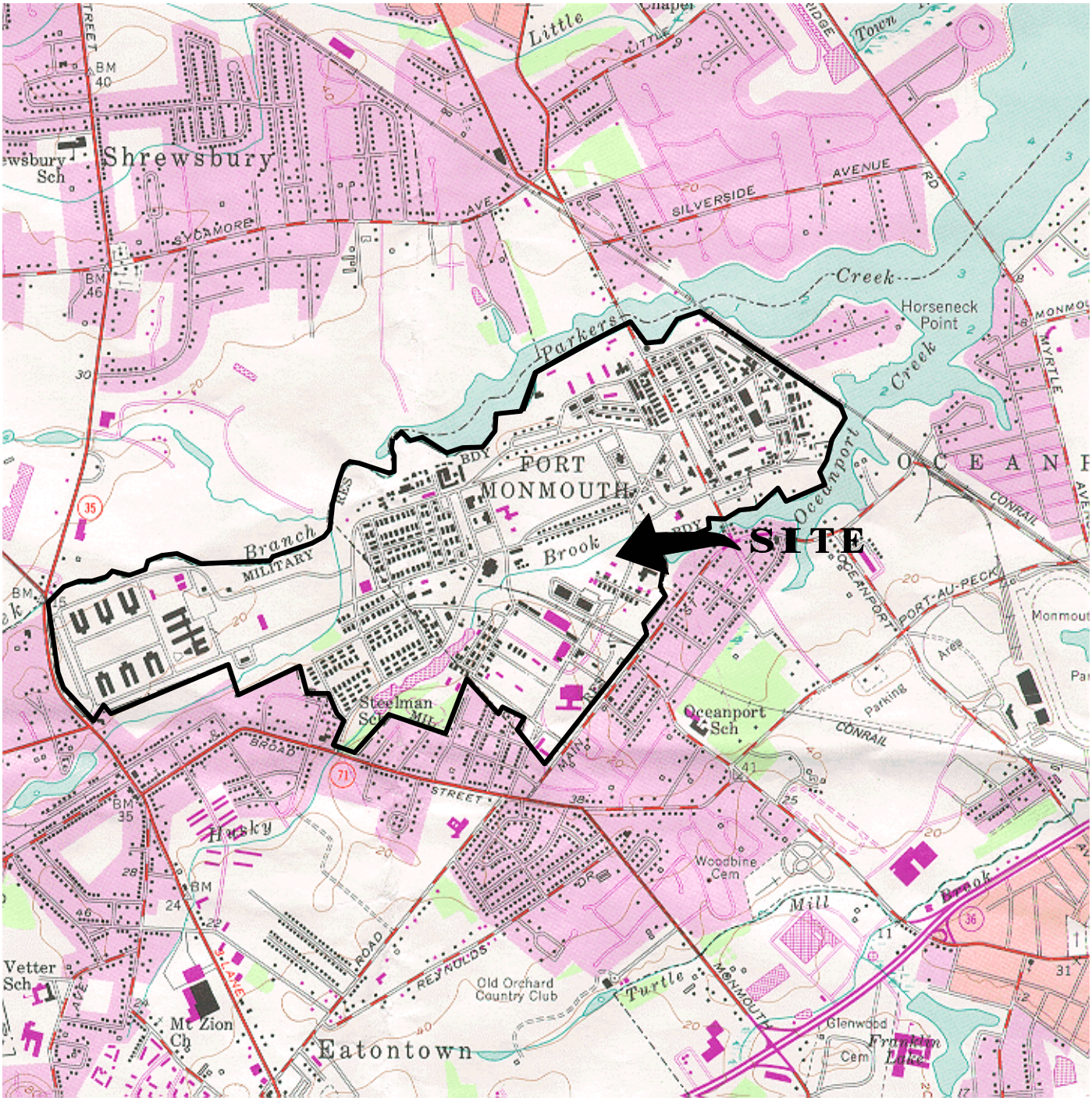
Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-12 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Zinc	AREA METALS-1	1500	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822



QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

Figure 2-1
Site Location Map
M-12 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

Geologic Map of New Jersey

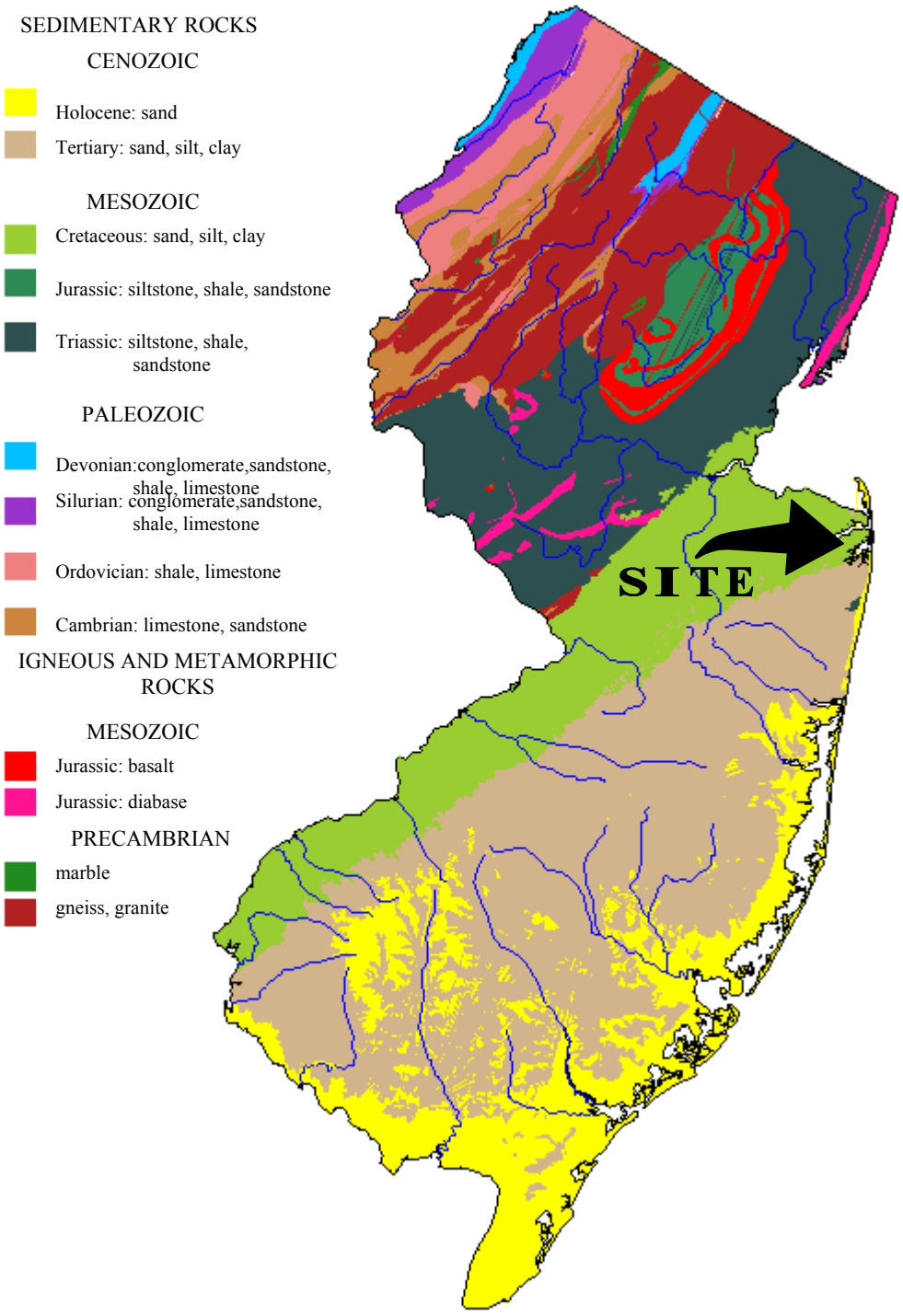
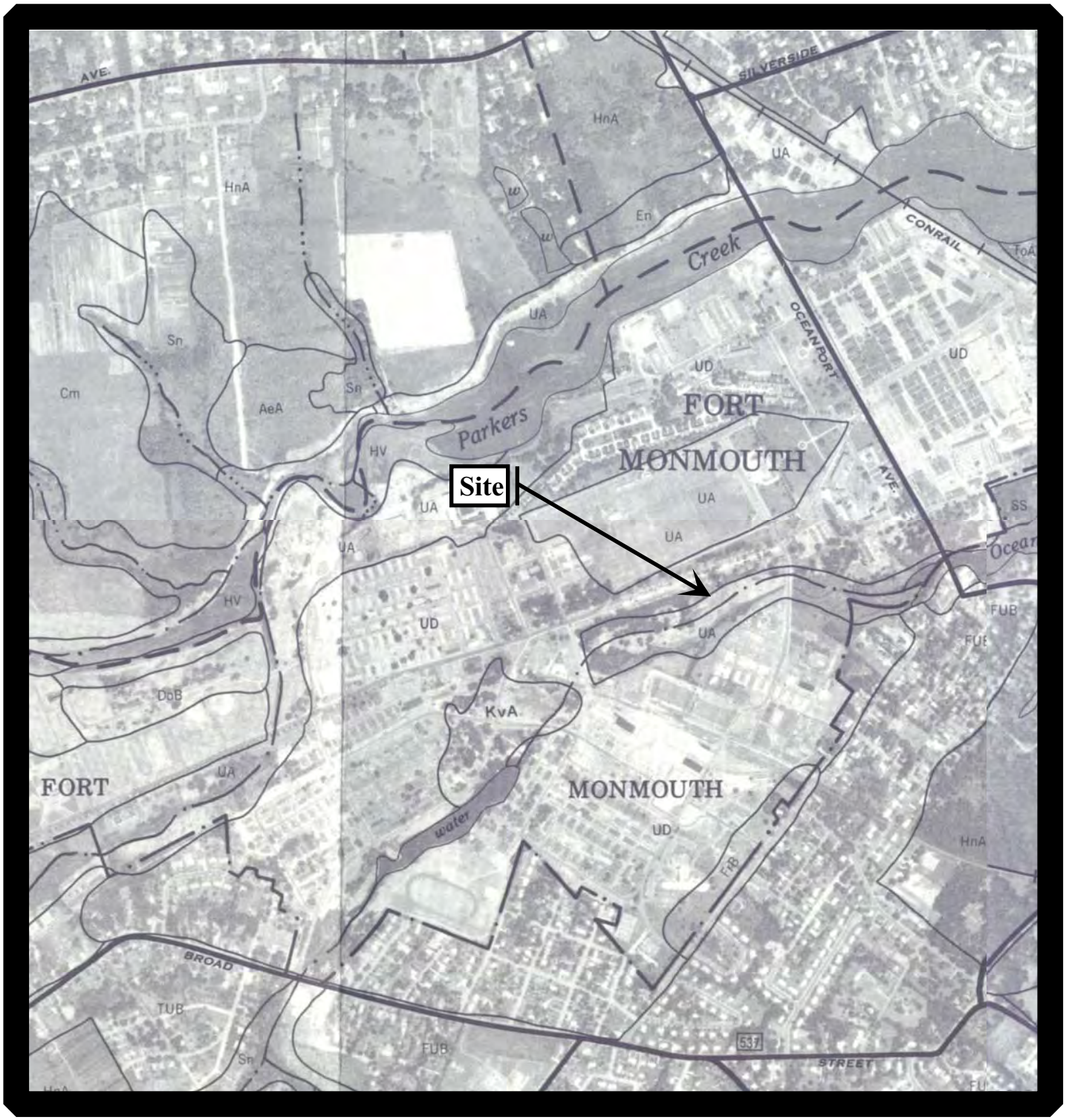


Figure 2-2
Geologic Map of New Jersey
M-12 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.



US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

Figure 2-3
Soil Map of Monmouth County
M-12 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

N

SALTZMAN AVENUE

GOSSELIN AVENUE

MURPHY DRIVE

COURIER AVENUE

M12 LANDFILL BOUNDARIES

B01 B02 B03 B04 B05 B06 B07 B08 B09 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 B27 B28 B29 B30 B31 B32 B33 B34 B35 B36 B37 B38 B39 B40 B41 B42 B43 B44 B45 B46 B47 B48 B49 B50 B51 B52 B53 B54 B55 B56 B57 B58 B59 B60 B61 B62 B63 B64 B65 B66 B67 B68 B69 B70 B71 B72 B73 B74 B75 B76 B77 B78 B79 B80 B81 B82 B83 B84 B85 B86 B87 B88 B89 B90 B91 B92 B93 B94 B95 B96 B97 B98 B99 B100 B101 B102 B103 B104 B105 B106 B107 B108 B109 B110 B111 B112 B113 B114 B115 B116 B117 B118 B119 B120 B121 B122 B123 B124 B125 B126 B127 B128 B129 B130 B131 B132 B133 B134 B135 B136 B137 B138 B139 B140 B141 B142 B143 B144 B145 B146 B147 B148

LEGEND

NOTES:

1.) LOCATIONS WERE POSITIONED ON THIS MAP USING GPS COORDINATES TAKED BY TVS.

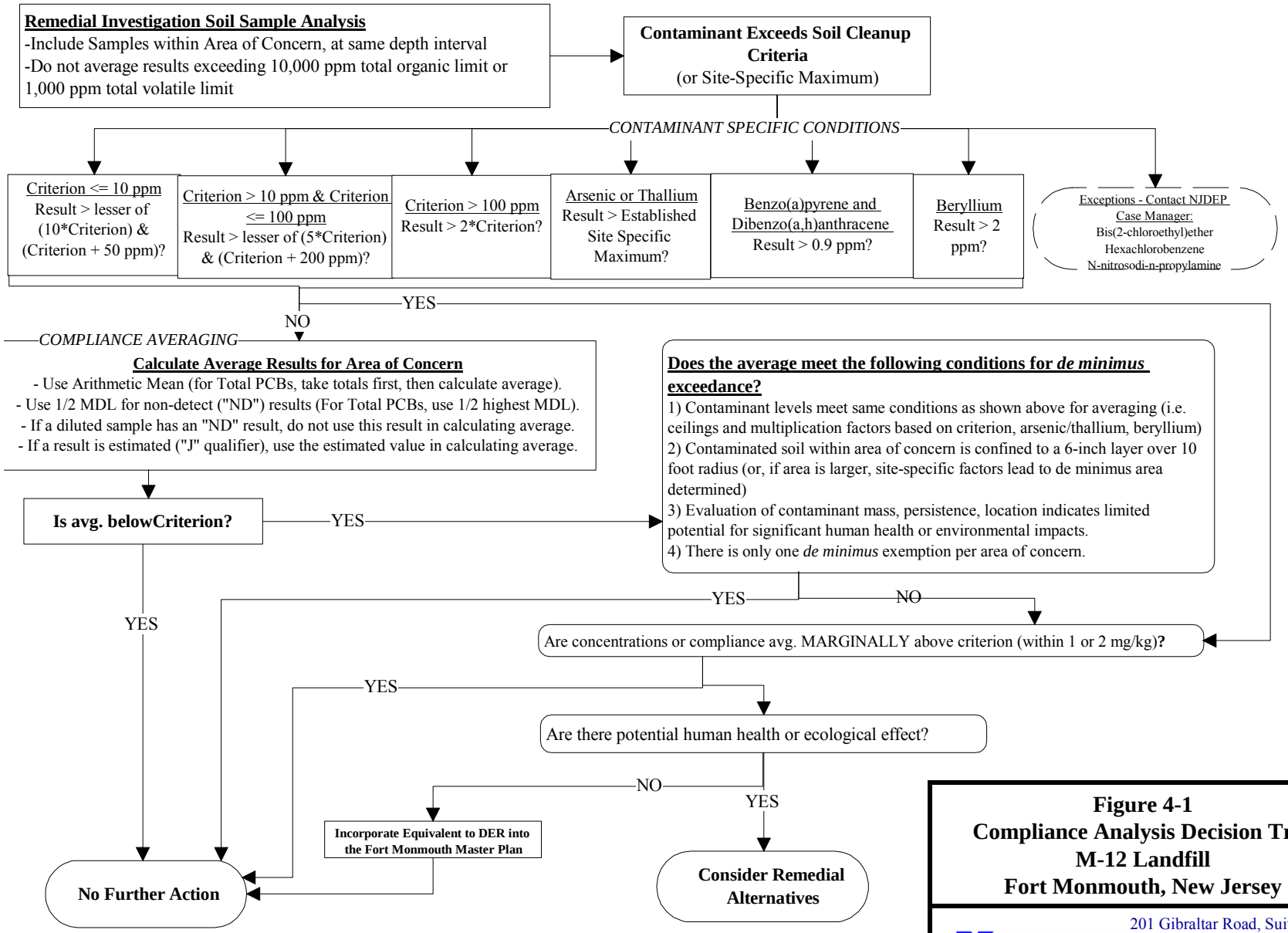
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-1
SOIL BORING LOCATION MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY:	DATE DRAWN:
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: M12-SBLM
	FILE No.: M12-SBLM
	SCALE: 1" = 50'
	SHEET OF REV.: B

Vet-Sal INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



Source: NJDEP *Site Remediation News*, Spring 1995 (Vol 7, No 2) - Article 08

Figure 4-1
Compliance Analysis Decision Tree
M-12 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



LEGEND

SEMI-VOLATILES	NJDEP RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA
BENZO[A]ANTHRACENE	0.9 (mg/kg)
BENZO[A]PYRENE	0.66 (mg/kg)
BENZO[B]FLUORANTHENE	0.9 (mg/kg)
BENZO[K]FLUORANTHENE	0.9 (mg/kg)
CHRYSENE	9 (mg/kg)
DIBENZ[A,H]ANTHRACENE	0.66 (mg/kg)
INDENO[1,2,3-CD]PYRENE	0.9 (mg/kg)

NOTES:

1.) SOIL SAMPLES WERE COLLECTED FROM A DEPTH OF APPROXIMATELY 0-6" OR 6-12" FOR THE ANALYTES PRESENTED. SAMPLING TOOK PLACE FROM MARCH 1998 TO SEPTEMBER 1999.
2.) [ ] = EXCEEDS NJDEP RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (RDCSCC).
3.) THIS MAP PRESENTS DATA FOR THOSE ANALYTES THAT EXCEEDED THE RDCSCC IN AT LEAST ONE SOIL BORING.
4.) ND = NOT DETECTED.
5.) LOCATION OF BORING 123 IS ESTIMATED.

REV.	REVISIONS	APPROVED	DATE	DRAWN BY
B	REVIEW EDITS		10 JUNE 02	TJW

TITLE:

FIGURE 4-2
SEMI-VOLATILES CONTAMINANT MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJW	DATE DRAWN: 01 AUG 02
CHECKED BY: TJK	DATE CHECKED:
APPROVED BY:	DATE APPROVED:

VerSar INC.
201 GIBRALTER ROAD, SUITE 100
HORSHAM, PA. 19044
(215) 957-0955

DRAWING No.:	M12-SEMI-VOLATILES
FILE No.:	M12 SEMI-VOLATILES
SCALE:	1" = 50'
SHEET	OF
REV.:	B

N

SALTZMAN AVENUE

GOSSELIN AVENUE

MURPHY DRIVE

COURIER AVENUE

M12 LANDFILL BOUNDARIES

AREA METALS – 1

AREA METALS – 2

LEGEND

METALS	NJDEP RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA
ANTIMONY	14 (mg/kg)
ARSENIC	20 (mg/kg)
BERYLLIUM	2 (mg/kg)
LEAD	400 (mg/kg)
MERCURY	14 (mg/kg)
ZINC	1500 (mg/kg)

NOTES:

1.) SOIL SAMPLES WERE COLLECTED FROM DEPTHS OF APPROXIMATELY 0–6" OR 6–12" FOR THE ANALYTES PRESENTED. SAMPLES WERE TAKEN BETWEEN MARCH 1998 AND SEPTEMBER 1999.

2.) [ ] = EXCEEDS NJDEP RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (RDCSCC).

3.) THIS MAP PRESENTS DATA FOR THOSE ANALYTES THAT EXCEEDED THE RDCSCC IN AT LEAST ONE SOIL BORING.

4.) ND = NOT DETECTED.

5.) LOCATION OF BORING 123 IS ESTIMATED.

REV.	REVISIONS	APPROVED	DATE	DRAWN BY
B	REVIEW EDITS		10 JUNE 02	TJW

TITLE:

FIGURE 4–3
METALS CONTAMINANT MAP
M–12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY:	DATE DRAWN:
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
DRAWING No.: M12–METALS	
FILE No.: M12–METALS	
SCALE: 1" = 50'	
SHEET OF	REV.: B

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957–0955

APPENDICES

APPENDIX A

DPW Proposal Letter to NJDEP defining RIR for Near Surface Soils at the M-12 Landfill Site, dated July 7, 1998

(An electronic copy of this appendix can be found on the attached compact disc as an Adobe Acrobat pdf file.)

DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101

REPLY TO
ATTENTION OF
Directorate of Public Works

July 7, 1998

State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management
ATTN: Ian Curtis
CN 028
Trenton, NJ 08625-0028

SUBJECT: Remedial Investigation of Landfill Cover Material

Re: NJDEP Correspondence (Dated April 4, 1996),
Remedial Investigation Report,
Fort Monmouth (Main Post and Charles Wood), NJ

U.S. Army Fort Monmouth
Directorate of Public Works Correspondence (Dated February 24, 1997)
Response to NJDEP Comments, Remedial Investigation Report
Fort Monmouth (Main Post and Charles Wood), NJ

Dear Mr. Curtis:

Based upon our recent discussions regarding ongoing remedial activities at Fort Monmouth, I'm writing this letter to reiterate the Directorate of Public Works (DPW) position regarding the landfill cover material which currently exists at nine former sanitary landfill sites. Eight of the nine landfill sites are located on the Main Post and the remaining site is located in the Charles Wood area. The nine former landfill sites are as follows: M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 and CW-3A.

In a letter dated April 4, 1996, under the General Comments Section, Item # 1 - Landfills, you state that all base landfills must comply with NJ Solid Waste Management Act N.J.A.C. 7:26-2A et seq. If Fort Monmouth is able to document that the appropriate solid waste closure procedures were followed, no additional action is required other than the NJDEP approved monitoring. However, if an approved closure was not performed at the landfill, it is recommended that a minimum soil cover of one foot be extended over all areas of documented disposal activities. Also, the approximate boundaries must be established and annotated in the Declaration of Environmental Restriction.

A meeting was held at Fort Monmouth on May 14, 1996 to further discuss various issues of concern as referenced in your April 4, 1996 letter. During the course of the meeting a discussion ensued regarding the existing cover material at each of the closed landfill sites. At said time I stated that the DPW would be unable to document that the nine former landfill sites had been closed in accordance with N.J.A.C. 7:26-2A et seq. It should be noted however that the regulatory statue cited only refers to sanitary landfills operated on or after January 1, 1982. The last sanitary landfill (Site M-8) remaining in operation at Fort Monmouth was closed in October of 1981. Data presented in Table # 1 lists each of the nine landfill sites, approximate acreage and their dates of operation. At the time of closure, each landfill was covered with sufficient soil to properly cap the waste debris which was placed at the site. Cover materials were derived from both onsite and offsite. At present, the thickness of the cover material varies from site to site, but generally is at least one foot in thickness. In accordance with the data presented in Table # 1, the referenced landfills have been closed for a period of between seventeen and forty-two years. During the course of that time, each site has naturally vegetated. The existing vegetation provides both habitat and a food source for a variety of animal species. In addition, the existing vegetation plays a major role in controlling soil erosion. This is particularly important for sites bordering surface water bodies. Each of the former landfill sites are located adjacent to surface water bodies.

At the May 14, 1996 meeting, the DPW proposed to collect surface soil samples from each of the nine landfill sites to document that the existing cover material did not contain contaminant levels above the Residential Direct Contact Soil Cleanup Criteria and/or established background levels. This proposal was offered as an alternative approach to recovering the landfill sites with additional fill materials. Our alternative approach would prevent the destruction of the existing vegetation which in turn would displace numerous animal species and also result in significant soil erosion problems. Based upon your comments at the time of the meeting, you viewed our proposal as a favorable option. In order to move forward with the proposal, you advised us to submit our alternative approach in writing for view and comment. In a letter dated February 24, 1997, this proposal was formally submitted to you. As part of our write up, we specified that soil samples would be collected in accordance with the requirements set forth in N.J.A.C. 7:26E et seq. and the NJDEP Field Sampling Procedures Manual. The DPW would collect a distinct soil sample at thirty foot intervals within the boundaries of the former landfills. The DPW anticipates collecting approximately 1,900 samples not to include trip, field and duplicate samples. Each sample will be analyzed for TCL + 30 parameters and TAL metals.

The DPW has already made a significant investment in terms of buying new equipment and hiring additional laboratory personnel to initiate this project. To date, the DPW has spent $ 775,000.00 to implement the landfill cover study. We anticipate spending an additional $ 475,000.00 in fiscal year 1999 to complete said project. The DPW commenced sampling of the landfill cover material in March of 1998. Our estimated completion date for this project in terms of field sampling activities is April 30, 1999. Currently, the DPW plans on submitting separate Remedial Investigation Reports for each of the nine landfill sites. Numerical data shall be included within each report which accurately measures the thickness of the existing landfill cover material at each sampling location.

The overall purpose of this letter was to restate our position regarding the landfill cover material and to receive written NJDEP endorsement for our alternative approach method. In summary, we feel our approach will identify any potential areas of concern while protecting existing natural resources. Should you have any questions or concerns, the undersigned can be contacted at the following telephone number: (732) 532-6223.

Joseph M. Fallon

Joseph M. Fallon, CHMM
Environmental Protection Specialist
Directorate of Public Works

TABLE # 1

LANDFILL SITE	ACREAGE	ESTIMATED SAMPLES	YEAR OPEN	YEAR CLOSED
M-2	6.5	314.6	1964	1968
M-3	5.9	285.6	1959	1964
M-4	1.4	67.8	1955	1956
M-5	3.2	154.9	1952	1959
M-8	7.2	348.5	1962	1981
M-12	2.1	101.6	1950	1966
M-14	6.9	334	1965	1966
M-18	4.1	198.4	1968	1969
CW-3A	2.6	125.8	1942	1957

APPENDIX B

NJDEP Approval Letter to DPW for RIR for Near Surface Soils at the M-12 Landfill Site, dated August 10, 1998

(An electronic copy of this appendix can be found on the attached compact disc as an Adobe Acrobat pdf file.)

State of New Jersey
Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

AUG 10 1998

Mr. Joseph Fallon
Env. Protection Specialist
Directorate of Public Works
U.S. Army, Fort Monmouth
Fort Monmouth, NJ 07703

Re: Landfill Remedial Investigation Letter
Fort Monmouth Army Base
Fort Monmouth, Monmouth County

Dear Mr. Fallon:

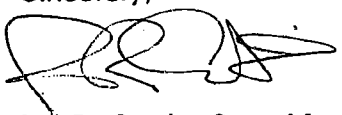
The NJDEP has received your letter of July 7, 1998 regarding the proposed investigation of the eight sanitary landfill sites located on the Main Post and one sanitary landfill located at the Charles Wood area. The NJDEP accepts the letter as submitted and proposed investigation.

Specifically, your letter proposes an investigation of the covers of the subject landfills which is expected to satisfy our concerns noted in our letter of April 4, 1996 and subsequent meeting of May 14, 1996. The information obtained from the investigation should satisfy any remaining questions regarding the landfills and their potential threat to human health and the environment.

In an effort to assure compliance with applicable regulations, I have discussed this case and associated issues with the Sukhdev Bhalla, Chief, Bureau of Landfill Engineering. According to Mr. Bhalla the proposed investigation satisfies New Jersey policy and procedure, as well as the Solid Waste Management Act. (N.J.A.C. 7:26-2A et seq.) requirements.

I look forward to the reviewing the subject report. If I can be of any further assistance, please do not hesitate to contact me at (609) 633-7232.

Sincerely,



Ian R. Curtis, Case Manager
Bureau of Federal Case Management
ICURTIS@DEP.STATE.NJ.US

FTMMTH53.DOC

APPENDIX C

Roy F. Weston, Inc. Site Investigation Report, December 1995
Section 4.2.8 – Landfill 12 (M-12)

4.2.8 Landfill 12 (M-12)

4.2.8.1 Site Location

Landfill 12 (M-12) is located on the south side of Husky Brook, west of Murphy Drive (Figure 4.2-15). The approximate northwest area of site M-12 is 60,100 ft^2 (1.4 acres) and the approximate southwest area is 29,200 ft^2 (0.7 acre).

4.2.8.2 Site History

The period of operation of Landfill 12 is unknown. Landfill 12 most likely contains domestic and industrial wastes similar to that found in other Main Post landfills. This landfill may also have been used for automobile disposal. At present, the southern bank of Husky Brook is flat and grass covered.

4.2.8.3 Sampling Effort

GPR and magnetometer surveys were conducted to locate the landfill boundaries. Three monitor wells, MW-16, MW-17, and MW-18, were installed at the locations shown in Figure 4.2-15. The original locations of monitor wells MW-16 and MW-18 were repositioned during the field investigation activities. Monitor well MW-16 was moved because of possible accessibility problems (the proposed location of the well was inside the locked boat yard parking lot). Monitor well MW-18 was moved based on geophysical interpretations.

These wells were sampled twice for TCL +30 parameters, TAL metals, and cyanide. Tidal monitoring was conducted at the same time as tidal monitoring for Landfill 14.

4.2.8.4 Geophysical Results

The magnetometer survey conducted at the northeast portion of site M-12, i.e., M-12NE, revealed elevated total magnetic field readings located at relative grid coordinates 40N to 70N/335E to 400E and 70N to 80N/175E to 225E. As shown in Figure 4.2-16, the high magnetometer

readings are represented by the violet contour interval and are indicative of buried ferrous material. Another anomalous area indicating ferrous material was revealed at the southwest corner of site M12NE and is located at approximate grid coordinates 0N to 60S/50W to 100E. Cultural features affecting the magnetometer survey are the tower and guy wires centered about coordinate 60N/100E and the chainlink fence to the south of the survey area. As shown in Figure 4.2-17, the magnetic gradient anomalies coincide with the total magnetic field results, also suggesting the presence of buried ferrous material within the suspected landfill boundary.

The GPR survey at M-12NE revealed chaotic radar reflectors throughout the area. These radar waveforms may be indicative of coarse-grained fill material or naturally occurring sands and gravel. However, the radar data collected collaborates the existing magnetometer anomalies at grid coordinates 30N to 70N/335E to 350E and 30N to 70N/390E to 400E, suggesting buried ferrous material within the suspected landfill boundary.

Hyperbolic radar signatures appear traversing the site from approximately 280E to 300E at a depth of 3 ft bgs. These hyperbolic waveforms are interpreted to be an 18-in. diameter drainage pipe that was observed discharging to the stream.

Site M-12SW contained many cultural features scattered throughout the site, including overhead power lines and metallic surface debris, prohibiting total site coverage and producing anomalous magnetic signatures. The magnetometer survey revealed anomalous total magnetic field and gradient anomalies at the northwest portion of the survey area. Located within grid coordinates 0N to 50N and 50E to 120E, the anomalies are probably due to metallic debris observed on the surface. As shown in Figure 4.2-18, total magnetic field anomalies exist at grid coordinates 0N to 20N/140E to 180E and centered about coordinate 10S/200E. The magnetic gradient contour plot (Figure 4.2-19) confirms these anomalous magnetic signatures and reveals smaller discrete high and low gradient readings indicative of buried ferrous material from 10N to 10S and 120E to 240E.

The GPR survey revealed hyperbolic diffraction patterns at 10N/160E and 10S/200E, confirming the presence of the magnetometer anomalies at a depth of approximately 2 ft bgs. These

hyperbolic radar signatures are typical of buried manmade metallic cyclindrical objects such as pipe, utilities, and other metallic objects, as well as naturally occurring cobbles and large gravel. Chaotic radar reflectors were also found at the northeast quadrant of the site within grid coordinates 10N to 50N/250E to 300E. These chaotic waveforms are indicative of coarse-grained materials such as sand and gravel or disturbed subsurface conditions.

The results of the geophysical survey at M-12NE and M-12SW indicate that fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells and surface-water sample locations are positioned to adequately monitor groundwater downgradient of these areas.

4.2.8.5 Hydrogeologic Interpretation

Lithologic logs from the wells installed at M-12 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay.

Saturation was observed at approximately 2 ft bgs across the site. The three monitor wells were screened across the water table and set at 14.5 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March sampling round, indicate that local groundwater flows north toward Husky Brook (Figure 4.2-20). Based on groundwater elevation measurements, monitor wells MW-17 and MW-18 are located downgradient of the M-12 area.

4.2.8.6 Groundwater Sampling Results

Monitor wells at site M-12 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-10 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results

Table 4.2-10
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-12

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW16 2/20/95, 3/10/95 (avg.)	MW17 2/20/95, 3/10/95 (avg.)	MW18 2/20/95, 3/10/95 (avg.)
SVOCs (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	ND	3 J	2J	4 J
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**961**	173.5	**733**
Arsenic	1.9	8*	89.3	4.05	ND	1.475
Barium	1.7	2000	699	47.1	184	133.5
Calcium	10.4	NLE	45400	7860	50200	6235
Cadmium	2.8	4	9.5	2.475	ND	3.4
Cobalt	3.0	NLE	18.3	2.025	ND	2.675
Chromium	2.9	100	191	12.025	4.425	7.675
Copper	1.9	1000	730[1]	ND	14.1	5.1
Iron	6.4	300	431000	**19650**	**31250**	**1795**
Mercury	0.2	2	0.26	0.205	ND	ND
Potassium	685	NLE	137000	3040	4380	5115
Magnesium	18.3	NLE	62700	6120	4405	3935
Manganese	1.8	50	480[1]	46.05	**256**	16.8
Sodium	30.5	50000	197000[1]	17150	10285	21050
Nickel	10.8	100	187	3.75	ND	7.8
Lead	1.6	10*	22.7	1.1	1.3	3.1
Vanadium	2.3	NLE	108	6.35	ND	2.775
Zinc	3.8	5000	233	20.75	9.6	45.3

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater criteria

NLE - No Level Established

ND - Indicates that the compound was not detected at noted quantification limit

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

[1] - Monmouth County maximum background concentration.

with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected in the site monitor wells above laboratory quantitation limits from either sampling round. The estimated value for bis(2-ethylhexyl) phthalate is below NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-10, of the 18 metals detected in site groundwater, 3 (aluminum, iron, and manganese) were found in concentrations exceeding the NJDEP GWQC. However, all metals were found in concentrations below those determined for site-specific or Monmouth County maximum background levels. Although the concentration of aluminum exceeded the Monmouth County background level in MW-17, the concentration was well below the site-specific background level established at the Main Post.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.8.7 Tidal Monitoring — Landfill 12 and Landfill 14 (M-12 and M-14)

Tidal fluctuations in Husky Brook were monitored at an upstream tidal monitoring station (stilling well-8) and at a downstream tidal monitoring station (stilling well-9) at Landfills 12 and 14 (Figure 4.2-15). The tidal monitoring stations are approximately 400 feet apart and tidal changes at both stations are similar. Changes in creek levels measured at station stilling well-8 were compared to changes in water levels measured at monitor wells MW-16 through MW-21 (see Appendix E).

Monitor wells MW-17, MW-18, MW-19, and MW-21 are located within 150 feet of the creek, and wells MW-16 and MW-20 are located 150 feet or more from the creek. The tidal monitoring station at Landfills 12 and 14 records high and low tides, but the lowest tidal peaks are slightly subdued. The stream bed elevation at Landfills 12 and 14 is the lowest of the three areas studied and is more affected by low tides. Stream bed elevation is -1.71 ft msl at stilling well-8 and -1.63 ft msl at stilling well-9. The maximum change in creek levels during the study was 3.3 feet. The maximum change in water level in the monitor well was approximately 1.6 feet during the time of study.

Data collected from wells MW-19 and MW-20 are useful as baseline data during the tidal monitoring study conducted at Landfills 12 and 14. There is no apparent relationship between water levels measured at wells MW-19 and MW-20 and creek levels measured at stilling well-8. Well MW-19 is approximately 150 feet from the creek, but is about 1,600 feet upgradient from stilling well-8. Well MW-20 is approximately 700 feet from the creek and is too distant to be influenced by changing creek levels. Water levels in the water-bearing unit and creek levels were fluctuating by less than 0.1 foot during the tidal monitoring study in March 1995.

The response of water levels measured at wells MW-16, MW-17, and MW-18 indicates a poor to moderate degree of hydraulic connection between the water-bearing unit in the area around these wells and the creek levels. There is a small lag time between tidal peaks in the creek and water-level peaks in each of the three wells. The magnitude of water-level changes in these three wells is small, between 5% and 15% of the magnitude of tidal changes in the creek.

There is an apparent hydraulic influence between the water-bearing unit at MW-21 and creek levels. Water-level data from monitor well MW-21 were compared with creek level data from station stilling well-8. The peak in water levels measured at well MW-1 occurs approximately 70 to 120 minutes after the peak in creek levels at stilling well-8, but the ratio of change in water level in the water-bearing unit to change in creek levels at this location (stilling well-8, MW-21) is approximately 40% to 50%. This high ratio indicates a high degree of hydraulic influence.

4.2.8.7.1 Conductivity and Salinity Results

Conductivity and salinity were measured in Husky Brook and in the monitor wells at Landfill 12 (M-12) and Landfill 14 (M-14) in January and March 1995 and are presented in Appendix E. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site.

The results indicate the presence of brackish to salty water in Husky Brook at Landfills 12 and 14 (M-12, M-14).

Specific conductance measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 2,000 µmhos. In addition, salinity measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 1.5 ppth. The results are consistent with the higher streambed elevation at Landfill 2 (M-2) compared to Landfill 8 (M-8) and Landfills 12 and 14 (M-12, M-14).

Groundwater sampled from monitor wells at each location generally exhibit low conductivity and zero salinity.

4.2.8.8 Recommendations

The results of the geophysical surveys indicate that the identified fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells are positioned to adequately monitor groundwater downgradient of these areas.

Groundwater sampling results indicate that no compounds of concern exceeded NJDEP GWQC from upgradient and downgradient wells.

The results of the tidal monitoring relate to both sites M-12 and M-14. The data indicate that there is no apparent relationship between creek levels and water levels in MW-19 and MW-20. A poor to moderate relationship was measured between MW-16, MW-17, and MW-18 and creek levels. A direct relationship was observed between creek levels and MW-21. The conductivity and salinity measurements in Husky Brook indicate the presence of brackish to salty water at sites M-12 and M-14. Groundwater sampled from monitor wells at each location indicates freshwater.

Although no compounds of concern were identified at site M-12, because of the site's history of being used as a landfill, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.

APPENDIX D

Soil Boring Samples Laboratory Analytical Data Sheets

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #IJN 98-0211

M-12 Landfill

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M-12 B-1 6-12"	3420.01	Soil	19-Mar-98 10:33	03/19/98
M-12 B1-24"	3420.02	Soil	19-Mar-98 10:33	03/19/98
M-12 B-2 6-12"	3420.03	Soil	19-Mar-98 11:10	03/19/98
M-12 B-2 24"	3420.04	Soil	19-Mar-98 11:10	03/19/98
M-12 B-3 6-12"	3420.05	Soil	19-Mar-98 11:30	03/19/98
M-12 B-3 24"	3420.06	Soil	19-Mar-98 11:30	03/19/98
M-12 B-4 6-12"	3420.07	Soil	19-Mar-98 11:56	03/19/98
M-12 B-4 24"	3420.08	Soil	19-Mar-98 11:56	03/19/98
M-12 B-5 6-12"	3420.09	Soil	19-Mar-98 13:00	03/19/98
M-12 B-5 24"	3420.10	Soil	19-Mar-98 13:00	03/19/98
M-12 B-6 4-10"	3420.11	Soil	19-Mar-98 13:25	03/19/98
M-12 B-6 24"	3420.12	Soil	19-Mar-98 13:25	03/19/98
M-12 B-7 6-12"	3420.13	Soil	19-Mar-98 13:55	03/19/98
M-12 B-7 24"	3420.14	Soil	19-Mar-98 13:55	03/19/98
M-12 B-8 6-12"	3420.15	Soil	19-Mar-98 14:45	03/19/98
M-12 B-8 24"	3420.16	Soil	19-Mar-98 14:45	03/19/98
M-12 B-9 6-12"	3420.17	Soil	19-Mar-98 15:17	03/19/98
M-12 B-9 24"	3420.18	Soil	19-Mar-98 15:17	03/19/98
Trip Blank	3420.19	Methanol	19-Mar-98	03/19/98
Trip Blank	3424.01	Methanol	20-Mar-98	03/20/98
M-12 B-10 6-12"	3424.02	Soil	20-Mar-98 10:58	03/20/98
M-12 B-10 24"	3424.03	Soil	20-Mar-98 10:58	03/20/98
M-12 B-11 5-11"	3424.04	Soil	20-Mar-98 11:35	03/20/98
M-12 B-11 24"	3424.05	Soil	20-Mar-98 11:35	03/20/98
M-12 B-12 6-12"	3424.06	Soil	20-Mar-98 11:50	03/20/98
M-12 B-12 24"	3424.07	Soil	20-Mar-98 11:50	03/20/98
M-12 B-13 6-12"	3424.08	Soil	20-Mar-98 12:13	03/20/98
M-12 B-13 24"	3424.09	Soil	20-Mar-98 12:13	03/20/98
M-12 B-14 3-9"	3424.10	Soil	20-Mar-98 12:56	03/20/98
M-12 B-14 24"	3424.11	Soil	20-Mar-98 12:56	03/20/98

SAMPLE LOCATION AND IDENTIFICATION

M-12 B-15 2-8"	3424.12	Soil	20-Mar-98 13:56	03/20/98
M-12 B-15 24"	3424.13	Soil	20-Mar-98 13:56	03/20/98
M-12 B-16 2-8"	3424.14	Soil	20-Mar-98 14:23	03/20/98
M-12 B-16 24"	3424.15	Soil	20-Mar-98 14:23	03/20/98
M-12 B-17 6-12"	3424.16	Soil	20-Mar-98 14:43	03/20/98
M-12 B-17 24"	3424.17	Soil	20-Mar-98 14:43	03/20/98
M-12 B-18 3-9"	3424.18	Soil	20-Mar-98 15:00	03/20/98
M-12 B-18 24"	3424.19	Soil	20-Mar-98 15:00	03/20/98
M-12 B-19 2-8"	3424.20	Soil	20-Mar-98 15:20	03/20/98
M-12 B-19 24"	3424.21	Soil	20-Mar-98 15:20	03/20/98
Trip Blank	3425.01	Methanol	23-Mar-99	03/23/98
M-12 B-20 6-12"	3425.02	Soil	23-Mar-98 09:37	03/23/98
M-12 B-20 24"	3425.03	Soil	23-Mar-98 09:37	03/23/98
M-12 B-21 3-9"	3425.04	Soil	23-Mar-98 10:05	03/23/98
M-12 B-21 24"	3425.05	Soil	23-Mar-98 10:05	03/23/98
M-12 B-22 3-9"	3425.06	Soil	23-Mar-98 10:25	03/23/98
M-12 B-22 24"	3425.07	Soil	23-Mar-98 10:25	03/23/98
M-12 B-23 3-9"	3425.08	Soil	23-Mar-98 11:11	03/23/98
M-12 B-23 24"	3425.09	Soil	23-Mar-98 11:11	03/23/98
M-12 B-24 3-9"	3425.10	Soil	23-Mar-98 11:30	03/23/98
M-12 B-24 24"	3425.11	Soil	23-Mar-98 11:30	03/23/98
M-12 B-25 6-12"	3425.12	Soil	23-Mar-98 11:50	03/23/98
M-12 B-25 24"	3425.13	Soil	23-Mar-98 11:50	03/23/98
M-12 B-26 2-8"	3425.14	Soil	23-Mar-98 11:55	03/23/98
M-12 B-26 24"	3425.15	Soil	23-Mar-98 11:55	03/23/98
M-12 B-27 4-10"	3425.16	Soil	23-Mar-98 14:10	03/23/98
M-12 B-27 24"	3425.17	Soil	23-Mar-98 14:10	03/23/98
M-12 B-28 4-10"	3425.18	Soil	23-Mar-98 14:30	03/23/98
M-12 B-28 24"	3425.19	Soil	23-Mar-98 14:30	03/23/98
M-12 B-29 6-12"	3425.20	Soil	23-Mar-98 15:02	03/23/98
M-12 B-29 24"	3425.21	Soil	23-Mar-98 15:02	03/23/98
M-12 B-30 2-8"	3425.22	Soil	23-Mar-98 15:27	03/23/98
M-12 B-30 24"	3425.23	Soil	23-Mar-98 15:27	03/23/98
Field Dup.	3425.24	Soil	23-Mar-98	03/23/98
Field Dup.	3425.25	Soil	23-Mar-98	03/23/98
Trip Blank	3428.01	Methanol	24-Mar-99	03/24/98
M-12 B-31 2-8"	3428.02	Soil	24-Mar-98 09:00	03/24/98
M-12 B-31 24"	3428.03	Soil	24-Mar-98 09:00	03/24/98
M-12 B-32 3-9"	3428.04	Soil	24-Mar-98 09:25	03/24/98
M-12 B-32 24"	3428.05	Soil	24-Mar-98 09:25	03/24/98
M-12 B-33 3-9"	3428.06	Soil	24-Mar-98 10:00	03/24/98
M-12 B-33 24"	3428.07	Soil	24-Mar-98 10:00	03/24/98
M-12 B-34 4-10"	3428.08	Soil	24-Mar-98 10:25	03/24/98
M-12 B-34 24"	3428.09	Soil	24-Mar-98 10:25	03/24/98
M-12 B-35 3-9"	3428.10	Soil	24-Mar-98 11:09	03/24/98
M-12 B-35 24"	3428.11	Soil	24-Mar-98 11:09	03/24/98
M-12 B-36 3-9"	3428.12	Soil	24-Mar-98 11:50	03/24/98
M-12 B-36 24"	3428.13	Soil	24-Mar-98 11:50	03/24/98
M-12 B-37 3-9"	3428.14	Soil	24-Mar-98 13:00	03/24/98
M-12 B-37 24"	3428.15	Soil	24-Mar-98 13:00	03/24/98
M-12 B-38 3-9"	3428.16	Soil	24-Mar-98 13:19	03/24/98
M-12 B-38 24"	3428.17	Soil	24-Mar-98 13:19	03/24/98
M-12 B-39 3-9"	3428.18	Soil	24-Mar-98 13:45	03/24/98

SAMPLE LOCATION AND IDENTIFICATION

M-12 B-39 24"	3428.19	Soil	24-Mar-98 13:45	03/24/98
M-12 B-40 6-12"	3428.20	Soil	24-Mar-98 14:20	03/24/98
M-12 B-40 24"	3428.21	Soil	24-Mar-98 14:20	03/24/98
M-12 B-41 6-12"	3428.22	Soil	24-Mar-98 14:59	03/24/98
M-12 B-41 24"	3428.23	Soil	24-Mar-98 14:59	03/24/98
Field Dup.	3428.24	Soil	24-Mar-98	03/24/98
Field Dup.	3428.25	Soil	24-Mar-98	03/24/98
Trip Blank	3432.01	Methanol	25-Mar-99	03/25/98
M-12 B-42 6-12"	3432.02	Soil	25-Mar-98 09:13	03/25/98
M-12 B-42 24"	3432.03	Soil	25-Mar-98 09:13	03/25/98
M-12 B-43 6-12"	3432.04	Soil	25-Mar-98 09:42	03/25/98
M-12 B-43 24"	3432.05	Soil	25-Mar-98 09:42	03/25/98
M-12 B-44 2-8"	3432.06	Soil	25-Mar-98 10:13	03/25/98
M-12 B-44 24"	3432.07	Soil	25-Mar-98 10:13	03/25/98
M-12 B-45 3-9"	3432.08	Soil	25-Mar-98 11:25	03/25/98
M-12 B-45 24"	3432.09	Soil	25-Mar-98 11:25	03/25/98
M-12 B-46 6-12"	3432.10	Soil	25-Mar-98 11:47	03/25/98
M-12 B-46 24"	3432.11	Soil	25-Mar-98 11:47	03/25/98
M-12 B-47 5-11"	3432.12	Soil	25-Mar-98 12:05	03/25/98
M-12 B-47 24"	3432.13	Soil	25-Mar-98 12:05	03/25/98
M-12 B-48 6-12"	3432.14	Soil	25-Mar-98 13:06	03/25/98
M-12 B-48 24"	3432.15	Soil	25-Mar-98 13:06	03/25/98
M-12 B-49 3-9"	3432.16	Soil	25-Mar-98 13:30	03/25/98
M-12 B-49 24"	3432.17	Soil	25-Mar-98 13:30	03/25/98
M-12 B-50 4-10"	3432.18	Soil	25-Mar-98 14:20	03/25/98
M-12 B-50 24"	3432.19	Soil	25-Mar-98 14:20	03/25/98
M-12 B-51 3-9"	3432.20	Soil	25-Mar-98 14:46	03/25/98
M-12 B-51 24"	3432.21	Soil	25-Mar-98 14:46	03/25/98
Trip Blank	4748.01	Methanol	26-Aug-99	08/26/99
M-12 52 6-12"	4748.02	Soil	26-Aug-99 10:55	08/26/99
M-12 52 24"	4748.03	Soil	26-Aug-99 10:55	08/26/99
M-12 53 4-10"	4748.04	Soil	26-Aug-99 11:30	08/26/99
M-12 53 24"	4748.05	Soil	26-Aug-99 11:30	08/26/99
M-12 54 2-8"	4748.06	Soil	26-Aug-99 11:55	08/26/99
M-12 54 24"	4748.07	Soil	26-Aug-9911:55	08/26/99
M-12 55 6-12"	4748.08	Soil	26-Aug-99 13:05	08/26/99
M-12 55 24"	4748.09	Soil	26-Aug-99 13:05	08/26/99
M-12 56 6-12"	4748.10	Soil	26-Aug-99 13:30	08/26/99
M-12 56 24"	4748.11	Soil	26-Aug-99 13:30	08/26/99
M-12 57 6-12"	4748.12	Soil	26-Aug-99 13:50	08/26/99
M-12 57 24"	4748.13	Soil	26-Aug-99 13:50	08/26/99
M-12 58 4-11"	4748.14	Soil	26-Aug-99 14:15	08/26/99
M-12 58 24"	4748.15	Soil	26-Aug-99 14:15	08/26/99
M-12 59 3-9"	4748.16	Soil	26-Aug-99 14:30	08/26/99
M-12 59 24"	4748.17	Soil	26-Aug-99 14:30	08/26/99
M-12 60 6-12"	4748.18	Soil	26-Aug-99 15:00	08/26/99
M-12 60 24"	4748.19	Soil	26-Aug-99 15:00	08/26/99
M-12 61 4-10"	4748.20	Soil	26-Aug-99 15:10	08/26/99
M-12 61 24"	4748.21	Soil	26-Aug-99 15:10	08/26/99
Trip Blank	4754.01	Methanol	27-Aug-99	08/27/99
M-12 63 5-11"	4754.02	Soil	27-Aug-99 10:00	08/27/99
M-12 63 24"	4754.03	Soil	27-Aug-99 10:00	08/27/99
M-12 64 6-12"	4754.04	Soil	27-Aug-99 10:17	08/27/99

SAMPLE LOCATION AND IDENTIFICATION

M-12 64 24"	4754.05	Soil	27-Aug-99 10:17	08/27/99
M-12 65 5-11"	4754.06	Soil	27-Aug-99 10:30	08/27/99
M-12 65 24"	4754.07	Soil	27-Aug-99 10:30	08/27/99
M-12 66 5-11"	4754.08	Soil	27-Aug-99 10:50	08/27/99
M-12 66 24"	4754.09	Soil	27-Aug-99 10:50	08/27/99
M-12 67 6-12"	4754.10	Soil	27-Aug-99 11:05	08/27/99
M-12 67 24"	4754.11	Soil	27-Aug-99 11:05	08/27/99
M-12 68 5-11"	4754.12	Soil	27-Aug-99 11:18	08/27/99
M-12 68 24"	4754.13	Soil	27-Aug-99 11:18	08/27/99
M-12 69 5-11"	4754.14	Soil	27-Aug-99 11:45	08/27/99
M-12 69 24"	4754.15	Soil	27-Aug-99 11:45	08/27/99
M-12 70 0-6"	4754.16	Soil	27-Aug-99 13:35	08/27/99
M-12 70 24"	4754.17	Soil	27-Aug-99 13:35	08/27/99
M-12 71 5-11"	4754.18	Soil	27-Aug-99 13:49	08/27/99
M-12 71 24"	4754.19	Soil	27-Aug-99 13:49	08/27/99
M-12 72 7-13"	4754.20	Soil	27-Aug-99 14:10	08/27/99
M-12 72 24"	4754.21	Soil	27-Aug-99 14:10	08/27/99
M-12 73 6-12"	4754.22	Soil	27-Aug-99 14:30	08/27/99
M-12 73 24"	4754.23	Soil	27-Aug-99 14:30	08/27/99
Field Dup.	4754.24	Soil	27-Aug-99	08/27/99
Field Dup.	4754.25	Soil	27-Aug-99	08/27/99
Trip Blank	4760.01	Methanol	30-Aug-99	08/30/99
M-12 74 6-12"	4760.02	Soil	30-Aug-99 09:10	08/30/99
M-12 74 24"	4760.03	Soil	30-Aug-99 09:10	08/30/99
M-12 75 6-12"	4760.04	Soil	30-Aug-99 09:30	08/30/99
M-12 75 24"	4760.05	Soil	30-Aug-99 09:30	08/30/99
M-12 76 3-9"	4760.06	Soil	30-Aug-99 10:19	08/30/99
M-12 76 24"	4760.07	Soil	30-Aug-99 10:19	08/30/99
M-12 77 6-12"	4760.08	Soil	30-Aug-99 10:40	08/30/99
M-12 77 24"	4760.09	Soil	30-Aug-99 10:40	08/30/99
M-12 78 6-12"	4760.10	Soil	30-Aug-99 10:55	08/30/99
M-12 78 24"	4760.11	Soil	30-Aug-99 10:55	08/30/99
M-12 79 3-9"	4760.12	Soil	30-Aug-99 11:15	08/30/99
M-12 79 24"	4760.13	Soil	30-Aug-99 11:15	08/30/99
M-12 80 6-12"	4760.14	Soil	30-Aug-99 11:30	08/30/99
M-12 80 24"	4760.15	Soil	30-Aug-99 11:30	08/30/99
M-12 81 6-12"	4760.16	Soil	30-Aug-99 11:49	08/30/99
M-12 81 24"	4760.17	Soil	30-Aug-99 11:49	08/30/99
M-12 82 6-12"	4760.18	Soil	30-Aug-99 13:05	08/30/99
M-12 82 24"	4760.19	Soil	30-Aug-99 13:05	08/30/99
M-12 83 6-12"	4760.20	Soil	30-Aug-99 13:40	08/30/99
M-12 83 24"	4760.21	Soil	30-Aug-99 13:40	08/30/99
M-12 84 6-12"	4760.22	Soil	30-Aug-99 14:05	08/30/99
M-12 84 24"	4760.23	Soil	30-Aug-99 14:05	08/30/99
M-12 85 4-10"	4760.24	Soil	30-Aug-99 14:23	08/30/99
M-12 85 24"	4760.25	Soil	30-Aug-99 14:23	08/30/99
M-12 86 6-12"	4760.26	Soil	30-Aug-99 14:30	08/30/99
M-12 86 24"	4760.27	Soil	30-Aug-99 14:30	08/30/99
M-12 87 5-11"	4760.28	Soil	30-Aug-99 14:58	08/30/99
M-12 87 24"	4760.29	Soil	30-Aug-99 14:58	08/30/99
M-12 88 5-11"	4760.30	Soil	30-Aug-99 15:14	08/30/99
M-12 88 24"	4760.31	Soil	30-Aug-99 15:14	08/30/99
Trip Blank	4762.01	Methanol	31-Aug-99	08/31/99

SAMPLE LOCATION AND IDENTIFICATION

M-12 89 3-9"	4762.02	Soil	31-Aug-99 09:50	08/31/99
M-12 89 24"	4762.03	Soil	31-Aug-99 09:50	08/31/99
M-12 90 6-12"	4762.04	Soil	31-Aug-99 10:20	08/31/99
M-12 90 24"	4762.05	Soil	31-Aug-99 10:20	08/31/99
M-12 91 4-10"	4762.06	Soil	31-Aug-99 10:33	08/31/99
M-12 91 24"	4762.07	Soil	31-Aug-99 10:33	08/31/99
M-12 92 6-12"	4762.08	Soil	31-Aug-99 10:55	08/31/99
M-12 92 24"	4762.09	Soil	31-Aug-99 10:55	08/31/99
M-12 93 2-8"	4762.10	Soil	31-Aug-99 11:10	08/31/99
M-12 93 24"	4762.11	Soil	31-Aug-99 11:10	08/31/99
M-12 94 4-10"	4762.12	Soil	31-Aug-99 11:25	08/31/99
M-12 94 24"	4762.13	Soil	31-Aug-99 11:25	08/31/99
M-12 95 6-12"	4762.14	Soil	31-Aug-99 11:45	08/31/99
M-12 95 24"	4762.15	Soil	31-Aug-99 11:45	08/31/99
M-12 96 6-12"	4762.16	Soil	31-Aug-99 13:05	08/31/99
M-12 96 24"	4762.17	Soil	31-Aug-99 13:05	08/31/99
M-12 97 6-12"	4762.18	Soil	31-Aug-99 13:40	08/31/99
M-12 97 24"	4762.19	Soil	31-Aug-99 13:40	08/31/99
M-12 98 3-9"	4762.20	Soil	31-Aug-99 14:00	08/31/99
M-12 98 24"	4762.21	Soil	31-Aug-99 14:00	08/31/99
M-12 99 4-10"	4762.22	Soil	31-Aug-99 14:20	08/31/99
M-12 99 24"	4762.23	Soil	31-Aug-99 14:20	08/31/99
M-12 100 6-12"	4762.24	Soil	31-Aug-99 14:35	08/31/99
M-12 100 24"	4762.25	Soil	31-Aug-99 14:35	08/31/99
M-12 101 6-12"	4762.26	Soil	31-Aug-99 14:45	08/31/99
M-12 101 24"	4762.27	Soil	31-Aug-99 14:45	08/31/99
M-12 102 6-12"	4762.28	Soil	31-Aug-99 14:55	08/31/99
M-12 102 24"	4762.29	Soil	31-Aug-99 14:55	08/31/99
Field Dup.	4762.30	Soil	31-Aug-99	08/31/99
Field Dup.	4762.31	Soil	31-Aug-99	08/31/99
Trip Blank	4774.01	Methanol	07-Sept-99	09/07/99
M-12 103 6-12"	4774.02	Soil	07-Sept-99 09:40	09/07/99
M-12 103 24"	4774.03	Soil	07-Sept-99 09:40	09/07/99
M-12 104 3-9"	4774.04	Soil	07-Sept-99 09:55	09/07/99
M-12 104 24"	4774.05	Soil	07-Sept-99 09:55	09/07/99
M-12 105 0-6"	4774.06	Soil	07-Sept-99 10:15	09/07/99
M-12 105 24"	4774.07	Soil	07-Sept-99 10:15	09/07/99
M-12 106 0-6"	4774.08	Soil	07-Sept-99 10:35	09/07/99
M-12 106 24"	4774.09	Soil	07-Sept-99 10:35	09/07/99
M-12 107 4-10"	4774.10	Soil	07-Sept-99 10:50	09/07/99
M-12 107 24"	4774.11	Soil	07-Sept-99 10:50	09/07/99
M-12 108 5-11"	4774.12	Soil	07-Sept-99 11:10	09/07/99
M-12 108 24"	4774.13	Soil	07-Sept-99 11:10	09/07/99
M-12 109 6-12"	4774.14	Soil	07-Sept-99 11:30	09/07/99
M-12 109 24"	4774.15	Soil	07-Sept-99 11:30	09/07/99
M-12 110 9-15"	4774.16	Soil	07-Sept-99 13:15	09/07/99
M-12 110 24"	4774.17	Soil	07-Sept-99 13:15	09/07/99
M-12 111 3-9"	4774.18	Soil	07-Sept-99 13:30	09/07/99
M-12 111 24"	4774.19	Soil	07-Sept-99 13:30	09/07/99
M-12 112 6-12"	4774.20	Soil	07-Sept-99 14:00	09/07/99
M-12 112 24"	4774.21	Soil	07-Sept-99 14:00	09/07/99
M-12 113 6-12"	4774.22	Soil	07-Sept-99 14:20	09/07/99
M-12 113 24"	4774.23	Soil	07-Sept-99 14:20	09/07/99

SAMPLE LOCATION AND IDENTIFICATION

M-12 138 24"	4790.25	Soil	15-Sept-99 14:10	09/15/99
M-12 139 0-6"	4790.26	Soil	15-Sept-99 14:25	09/15/99
M-12 139 24"	4790.27	Soil	15-Sept-99 14:25	09/15/99
Field Dup.	4790.28	Soil	15-Sept-99	09/15/99
Field Dup.	4790.29	Soil	15-Sept-99	09/15/99
Trip Blank	4793.01	Methanol	20-Sept-99	09/20/99
M-12 140 0-6"	4793.02	Soil	20-Sept-99 09:00	09/20/99
M-12 140 24"	4793.03	Soil	20-Sept-99 09:00	09/20/99
M-12 141 0-6"	4793.04	Soil	20-Sept-99 09:20	09/20/99
M-12 141 24"	4793.05	Soil	20-Sept-99 09:20	09/20/99
M-12 142 0-6"	4793.06	Soil	20-Sept-99 09:35	09/20/99
M-12 142 24"	4793.07	Soil	20-Sept-99 09:35	09/20/99
M-12 143 0-6"	4793.08	Soil	20-Sept-99 09:48	09/20/99
M-12 143 24"	4793.09	Soil	20-Sept-99 09:48	09/20/99
M-12 144 0-6"	4793.10	Soil	20-Sept-99 10:00	09/20/99
M-12 144 24"	4793.11	Soil	20-Sept-99 10:00	09/20/99
M-12 145 0-6"	4793.12	Soil	20-Sept-99 10:12	09/20/99
M-12 145 24"	4793.13	Soil	20-Sept-99 10:12	09/20/99
M-12 146 0-6"	4793.14	Soil	20-Sept-99 10:25	09/20/99
M-12 146 24"	4793.15	Soil	20-Sept-99 10:25	09/20/99
M-12 147 0-6"	4793.16	Soil	20-Sept-99 10:40	09/20/99
M-12 147 24"	4793.17	Soil	20-Sept-99 10:40	09/20/99
M-12 148 0-6"	4793.18	Soil	20-Sept-99 10:55	09/20/99
M-12 148 24"	4793.19	Soil	20-Sept-99 10:55	09/20/99

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

10-28-99

Daniel Wright/Date
Laboratory Director

Table of Contents

Section	Page No.
Volume I	
Sampling	1
Chain of Custody	2-32
GPS Maps	33-41
Landfill Cover	41A-41B
Boring Logs	42-189
Field Duplicate Identification	190-191
Method Summary	192-194
Case Narrative	195-196
Laboratory Chronicle	197-210
Soil Clean-Up Criteria	211-212
Qualifier Codes	213-214
Analytical Results	215
Volatiles	216
Method Blanks	217-262
Trip Blanks	263-302
Field Duplicates	322-763
Volume II	
Semi-Volatiles	764
Method Blanks	765-789
Field Duplicates	790-808
Samples	809-1251
Pest/PCB's	1252
Method Blanks	1253-1266
Field Duplicates	1267-1273
Samples	1274-1421
Metals	1422
Method blanks	1423-1427
Field Duplicates	1428-1434
Samples	1435-1582

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12-LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3420 1	M-12-B-1	3-19-98	1033	SOIL	2		X	X	X		.04	PPM
2	" "		"			X			X	VO 0083	1.	PPM
3	M-12-B-2		1110				X	X	X		.06	PPM
4	" "		"			X			X	VO 0085	.06	PPM
5	M-12-B-3		1130				X	X	X		1	PPM
6	" "		"			X			X	VO 0086	8	PPM
7	M-12-B-4		1156				X	X	X		3	PPM
8	" "		"			X			X	VO 0087	1	PPM
9	M-12-B-5		1300				X	X	X		1.8	PPM
10	" "		"			X			X	VO 0088	1	PPM
11	M-12-B-6		1325				X	X	X		.08	PPM
12	" "		"			X			X	VO 0089	.4	PPM
13	M-12-B-7		1355				X	X	X		2	PPM
14	" "		"			X			X	VO 0090	1	PPM

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-19-98 1540	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
		[signature]			

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000003

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 LANDFILL CONT.

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3420.15	M-12-B-8	3-19-98	1445	soil	2		X	X	X			
16	" "		1445			X			X	VO 0091		
17	M-12-B-9		1517				X	X	X			
18	" "		1517			X			X	VO 0092		
(ML) ~~19~~	~~M-12-B-10~~						~~X~~	~~X~~	~~X~~			
(ML) ~~20~~	~~" "~~					~~X~~			~~X~~	~~VO 0093~~		
19	TRIP BLANK									VO 0093		

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	3-19-98 1510				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12-LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Analysis Parameters

Comments:

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3424 1	TRIP BLANK	3-20-98	~~1058~~ 0945		1					VO 0094	~~0~~	~~PPM~~
2	M-12-B-10		1058	SOIL	2		X	X	X		0	PPM
3	M-12-B-10		1058			X			X	VO 0095	0	PPM
4	M-12-B-11		1135				X	X	X		0	PPM
5	M-12-B-11		1135			X			X	VO0096	0	PPM
6	M-12-B-12		1150				X	X	X		.08	PPM
7	M-12-B-12		1150			X			X	VO 0097	.06	PPM
8	M-12-B-13		1213				X	X	X		0	PPM
9	M-12-B-13		1213			X			X	VO 0098	0	PPM
10	M-12-B-14		1256				X	X	X		0	PPM
11	M-12-B-14		1256			X			X	VO 0099	0	PPM
12	M-12-B-15		1356				X	X	X		0	PPM
13	M-12-B-15		1356			X			X	VO0100	.08	PPM
14	M-12-B-16		1423				X	X	X		0	PPM

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-20-98 1530	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000005

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 LANDFILL CONT.

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAN	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3424 15	M-12-B-16	3-20-98	1423	SOIL	2	X			X	VO 0101	0	PPM
16	M-12-B-17		1443				X	X	X		0	PPM
17	M-12 B-17		1443			X			X	VO 0102	0	PPM
18	M-12-B-18		1500				X	X	X		0	PPM
19	M-12-B-18		1500			X			X	VO 0103	0	PPM
20	M-12-B-19		1520				X	X	X		0	PPM
21	M-12-B-19		1520							VO 0104	0	PPM

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	3-20-98 1530				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000006

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12- LAND FILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Analysis Parameters

Comments:

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3425 01	TRIP BLANK	3-23-98		SOIL	1		~~[illegible]~~			VO 0106 (ML)	.	
X 02	M-12-B-20		0937		2		X	X	X		0	PPM
03	M-12-B-20		0937		2	X			X	VO 0105 (ML)	0	PPM
04	M-12-B-21		1005		2		X	X	X		0	PPM
05	M-12-B-21		1005		2	X			X	VO 0107	0	PPM
06	M-12-B-22		1025		2		X	X	X		0	PPM
07	M-12-B-22		1025		2	X			X	VO 0108	0	PPM
08	M-12-B-23		1111		2		X	X	X		0	PPM
09	M-12-B-23		1111		2	X			X	VO 0109	.8	PPM
10	M-12-B-24		1130		2		X	X	X		0	PPM
11	M-12-B-24		1130		2	X			X	VO 0110	.04	PPM
12	M-12-B-25		1150		2		X	X	X		.08	PPM
13	M-12-B-~~25~~ 25 (ML)		1150		2	X			X	VO 0111	.06	PPM
14	M-12-B-26		1155		2		X	X	X		.04	PPM

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-23-98 1540	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000007

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location:

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA+15	Metals	PEST PCB PAN	% SOLID	VOA ID NUMBER	OVA	Comments: Remarks / Preservation Method
3425 15	M-12-B-26	3-23-98	1155	Soil	2	X			X	V00112	.04	PPM
16	M-12-B-27		1410				X	X	X		0	PPM
17	M-12-B-27		1410			X			X	V0 0113	.04	PPM
18	M-12-B-28		1430				X	X	X		.08	PPM
19	M-12-B-28		1430			X			X	V0 0014	.06	PPM
20	M-12-B-29 (MS)		1502				X	X	X		0	PPM
21	M-12-B-29		1502			X			X	V0 0015	0	PPM
22	M-12-B-30		1527				X	X	X		0	PPM
23	M-12-B-30 -		1527			X			X	V0 0016	.06	PPM
24	M-12-B-31	(MS)		(MS)								
25	M-12-B-31 (MD)											
26	M-12-B-32											
27	M-12-B-32											
~~23~~	~~TRIP BLANK~~ (MD)									~~V0 0020~~		(MD)

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3/23/98 1540	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
		[signature]			

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ___ Days, (_)ASAP Verbal ___ Hrs.

Remarks:

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12-LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PESTBN	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3425.24	FIELD DUP.	3-23-98		SOIL	2		X	X	X	VO 0120		
25	" "	"		"	"	X			X			

Analysis Parameters

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	3-23-98 1540				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

000009

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:

Project No: IJN 98-0211
Location: M-12-LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Analysis Parameters

Comments:

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals TAL	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3428 1	M-12-TRIP BLANK	3-24-98		ML	1					VO 0117	~~0~~	~~PPM~~ ML
2	M-12-B-31		0900		2		X	X	X		0	PPM
3	" "		0900			X			X	VO 0118	.06	PPM
4	M-12-B-32		0925				X	X	X		0	PPM
5	" "		0925			X			X	VO 0119	0	PPM
6	M-12-B-33		1000				X	X	X	ML	0	PPM
7	" "		1000			X			X	VO 0~~120~~ 121	0	PPM
8	M-12-B-34		1025				X	X	X		0	PPM
9	" "		1025			X			X	VO 0122	0	PPM
10	M-12-B-35		1109 ~~1150~~ ML				X	X	X		0	PPM
11	" "		1109 ~~1150~~ ML			X			X	VO 0123	0	PPM
12	M-12-B-36		1150				X	X	X		0	PPM
13	" "		1150			X			X	VO 0124	.04	PPM
14	M-12-B-37		1300				X	X	X		.08	PPM

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-24-98 1515	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000010

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | Project No: IJN 98-0211
Phone #: (732) 532-6223 | Location:
(X)DERA ( )OMA ( )Other:_____
Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAB N	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3428 15	M12-B-37	3-24-98	1300	SOIL	2	X			X	VO 0125	O	PPM
16	M-12-B-38		1319				X	X	X			
17	" "		1319			X			X	VO 0126		
18	M-12-B-39		1345				X	X	X			
19	" "		1345			X			X	VO 0127		
20	M-12-B-40		1420				X	X	X			
21	" "		1420			X			X	VO 0128		
22	M-12 B-41		1459			(X)	X	X	X			
23	" "		1459			X			X	VO 0129		
24	FIELD DUP.						X	X	X			
25	" "					X			X	VO 0130		

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-24-98 1515	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
		[signature]			

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

000041

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12- LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST	PAH	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3432 1	TRIP BLANK	3-25-98			1						VO 0131		
2	M-12-B-42		0913	SOIL	2		X	X		X		0	PPM
3	" "		0913			X				X	VO0132	0	PPM
4	M-12-B-43		0942				X	X		X		0	PPM
5	" "		0942			X				X	VO0133	0	PPM
6	M-12-B-44		1013				X	X		X		.04	PPM
7	" "		1013			X				X	VO0134	.02	PPM
8	M-12-B45		1125				X	X		X		0	PPM
9	" "		1125			X				X	VO0135	.08	PPM
10	M-12-B-46		1147				X	X		X		.02	PPM
11	" "		1147			X				X	VO0136	0	PPM
12	M-12-B-47		1205				X	X		X		.02	PPM
13	" "		1205			X				X	VO0137	0	PPM
14	M-12-B-48		1306				X	X		X		0	PPM

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	3-25-98 1510	J. Verghese			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000012

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:

Project No: IJN 98-0211
Location: M-12-LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
3432 15	M-12-B-48	3-25-98	1306	soil	2	X			X	VO 0138	0	PPM
16	M-12-B-49		1330				X	X	X		0	PPM
17	" "		1330			X			X	VO 0139	.04	PPM
18	M-12-B-50		1420				X	X	X		0	PPM
19	" "		1420			X			X	VO 0140	0	PPM
20	M-12-B-51		1446				X	X	X		0	PPM
21	" "		1446			X			X	VO 0141	0	PPM
~~ML22~~	~~M-12-B-52~~						X	X	X			
~~ML23~~	~~" "~~					X			X	~~VO 0142~~		
~~ML24~~	~~M-12-B-53~~						X	X	X			
~~ML25~~	~~" "~~					X			X	~~VO 0143~~		

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-25-98 1510	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
		[signature]			

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks: LAST DAY @ M-12

000213

print legibly

Custodydera3/2/98



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Comments: Cal. #1 OVA OK MU; Cal. #2 HNU OK MU

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	HNU Remarks / Preservation Method
4748. 1	TRIP BLANK	8-26-99	—	METH.	1	X				V00688	—	<4°C
2	M-12-~~1~~ 52 - 6-12"	"	1055	SOIL	2	~~X~~	X	X	X		0 PPM	0 PPM "
3	" 24"	"	"	"	"	X			X	V00689	"	" "
4	M-12-~~2~~ 53 - 4-10"	"	1130	"	"		X	X	X		"	" "
5	" 24"	"	"	"	"	X			X	V00690	62 PPM	3 PPM "
6	M-12-~~3~~ 54 - 2-8"	"	1155	"	"		X	X	X		0 PPM	0 PPM "
7	" 24"	"	"	"	"	X			X	V00691	400 PPM	0 PPM (METH. ODOR) "
8	M-12-~~4~~ 55 - 6-12"	"	1305	"	"		X	X	X		100 PPM	0 PPM "
9	" 24"	"	"	"	"	X			X	V00692	25 PPM	0 PPM "
10	M-12-~~5~~ 56 - 6-12"	"	1330	"	"		X	X	X		0 PPM	" "
11	" 24"	"	"	"	"	X			X	V00693	"	" "
12	M-12-~~6~~ 57 - 6-12"	"	1350	"	"		X	X	X		"	" "
13	" 24"	"	"	"	"	X			X	V00694	"	" "
14	M-12-~~7~~ 58 - 4-11"	"	1415	"	"		X	X	X		"	" "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-26-99 1520	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: VERY HUMID / RAINY

000014

Custodydera.xls6/1/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Analysis Parameters

Comments:

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	HNU Remarks / Preservation Method
4748. 15	M-12-~~7~~ 50 - 24"	8-26-99	1415	Soil	2	X			X	V00695	0 PPM	0 PPM <4°C
16	M-12-~~8~~ 59 - 3-9"	"	1430	"	"		X	X	X		"	" "
17	" - 24"	"	"	"	"	X			X	V00696	"	" "
18	M-12-~~9~~ 60 - 6-12"	"	1500	"	"		X	X	X		"	" "
19	" - 24"	"	"	"	"	X			X	V00697	"	" "
20	M-12-~~10~~ 61 - 4-10"	"	1510	"	"		X	X	X		"	" "
21	" - 24"	"	"	"	"	X			X	V00698	"	" "

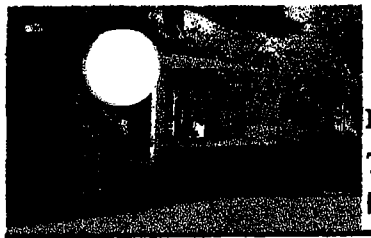
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	8-26-99 1520	J. Velfilla			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

Custodydera.xls7/27/99

000015



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Comp[redacted]K LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
4794 1	TRIP BLANK	8-27-99	—	METH.	1	X				V00709 (MW)	—	HNU <4°C
2	M-12-63 - 5-11"	"	1000	SOIL	2		X	X	X			"
3	" " - 24"	"	"	"	"	X			X	V00700	40 PPM	0 PPM "
4	M-12-64 - 6-12"	"	1017	"	"		X	X	X		0 PPM	" "
5	" " - 24"	"	"	"	"	X			X	V00701	"	" "
6	M-12-65 - 5-11"	"	1030	"	"		X	X	X		"	" "
7	" " - 24"	"	"	"	"	X			X	V00702	20 PPM	91 "
8	M-12-66 - 5-11"	"	1050	"	"		X	X	X		9 PPM	" "
9	" " - 24"	"	"	"	"	X			X	V00703	"	" "
10	M-12-67 - 6-12"	"	ENTERED	"	"		X	X	X		"	" "
11	" " - 24"	"	"	"	"	X			X	V00704	"	" "
12	M-12-68 - 5-11"	"	1118	"	"		X	X	X		"	" "
13	" " - 24"	"	"	"	"	X			X	V00705	20 PPM	" "
14	M-12-69 - 5-11"	"	1145	"	"		X	X	X		0 PPM	"

Comments:
Cal. # 1 OVA OK (MW)
Cal. # 2 HNU OK (MW)

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-27-99 1550	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

000046

print legibly

Custodydera.xls7/27/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | Project No: IJN 98-0211
Phone #: (732) 532-6223 | Location: M-12 WEST LANDFILL
(X)DERA ( )OMA ( )Other:_____
Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA+15	Metals	PEST PCB SCAN	% SOLID	VOA ID NUMBER	OVA	Comments: see pg. 1 / HNU Remarks / Preservation Method
4754. 15	M-12-69 - 24"	8-27-99	1145	SOIL	2	X			X	V00706	0 PPM	0 PPM <40c
16	M-12-70 - 0-6"	"	1335	"	"		X	X	X		"	"
17	" " - 24"	"	"	"	"	X			X	V00707	"	"
18	M-12-71 - 5-11"	"	~~1410~~ 1349	"	"		X	X	X		"	"
19	" " - 24"	"	"	"	"	X			X	V00708	"	"
/ 20	M-12-72-7-13"	"	1410	"	"		X	X	X			
21	" " - 24"	"	"	"	"	X			X	V00709		
22	M-12-73	"	1430	"	4		X	X	X			
23	" " - 24"	"	"	"	"	X			X	V00710		
24	FIELD DUP.	"					X	X	X			
25	" " - 24"	"		"	"	X			X	V00711		

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-27-99 1550	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

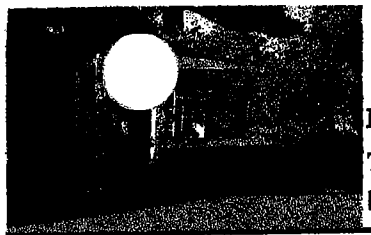
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000047

print legibly

Custodydera.xls7/27/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV	Project No: IJN 98-0211	
Phone #: (732) 532-6223	Location: M-12 WEST LANDFILL	
(X)DERA ( )OMA ( )Other:_____		

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
47600.1	TRIP BLANK	8-30-99	—	METH.	1	X				V00679	—	HNU <40c
2	M-12-74-6-12"	"	0910	soil	2		X	X	X		0 PPM	0 PPM "
3	" " -24"	"	"	"	"	X			X	V00680	"	" "
4	M-12-75-6-12"	"	0930	"	"		X	X	X		"	" "
5	" " -24"	"	"	"	"	X			X	V00681	"	" "
6	M-12-76-3-9"	"	"	"	"		X	X	X		"	" "
7	" " -24"	"	"	"	"	X			X	V00682	"	" "
8	M-12-77-6-12"	"	1040	"	"		X	X	X		"	" "
9	" " -24"	"	"	"	"	X			X	V00683	"	" "
10	M-12-78-6-12"	"	1055	"	"		X	X	X		10 PPM	0 PPM "
11	" " -24"	"	"	"	"	X			X	V00684	0 PPM	" "
12	M-12-79-3-9"	"	1115	"	"		X	X	X		"	" "
13	" " -24"	"	"	"	"	X			X	V00685	20 PPM	" "
14	M-12-80-6-12"	"	1130	"	"		X	X	X		0 PPM	" "

ENTERED

Comments:
Cal. #1 OVA
Cal. #2 HNU
O.K. (ML)

Relinquished by (signature): Mark Laura	Date/Time: 8-30-99 1535	Received by (signature): J. Vellucci	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000618

print legibly

Custodydera.xls7/27/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA+15	Metals	PEST PCB PAN	% SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
47600.15	M-12-80-24"	8-30-99	1130	Soil	2	X			X	V00686	0 PPM	0 PPM <4°C
16	M-12-81-6-12"	"	1149	"	"		X	X	X		18	" "
17	" " - 24"	"	~~1305~~ 1305	"	"	X			X	V00712	"	" "
18	M-12-82-6-12"	"	1305	"	"		X	X	X		"	" "
19	" " - 24"	"	"	"	"	X			X	V00713	40 PPM	" "
20	M-12-83-5-11"	"	1340	"	"		X	X	X		0 PPM	" "
21	" " - 24"	"	"	"	"	X			X	V00714	"	" "
22	M-12-84-6-12"	"	1405	"	"			X	X		"	" "
23	" " - 24"	"	"	"	"	X			X	V00715	"	" "
24	M-12-85-4-10"	"	1423	"	"		X	X	X		"	" "
25	" " - 24"	"	"	"	"	X			X	V00716	"	" "
26	M-12-86-6-12"	"	1430	"	"		X	X	X		"	" "
27	" " - 24"	"	"	"	"	X			X	V00717	"	" "
28	M-12-87-5-11"	"	1458	"	"		X	X	X		"	" "

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	8-30-99 1535				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

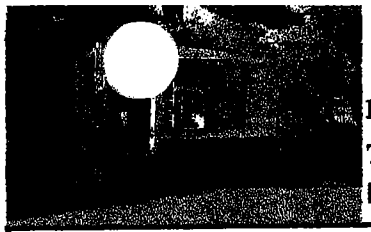
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000049

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi nmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAN	%SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
47660.29	M-12-87-24"	8-30-99	1458	soil	2	X			X	V00718	40 PPM	0 PPM 4°C
30	M-12-88-54"	"	1514	"	"		X	X	X		0 PPM	" "
31	" " - 24"	"	"	"	"	X			X	V00719	"	" "

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	8-30-99 1535	J. Allegra			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

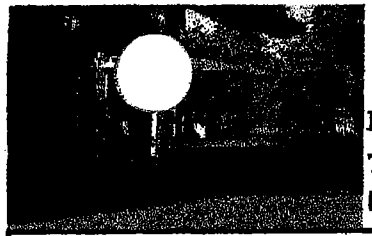
Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

020000

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi[illegible]mental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | Project No: IJN 98-0211
Phone #: (732) 532-6223 | Location: M-12 WEST LANDFILL
(X)DERA ( )OMA ( )Other:_____

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB N	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
47162. 1	TRIP BLANK	8-31-99	—	WATER	1	X				V00720	—	HNU <4°C
2	M-12-89-3-9"	"	0950	SOIL	2		X	X	X		0 PPM	0 PPM "
3	" " - 24"	"	"	"	"	X			X	V00721	"	" "
4	M-12-90-6-12"	"	1020	"	"		X	X	X		20 PPM	" "
5	" " - 24"	"	"	"	"	X			X	V00722	0 PPM	" "
6	M-12-91-4-10"	"	1033	"	"		X	X	X		"	" "
7	" " - 24"	"	"	"	"	X			X	V00723	"	" "
1 8	M-12-92-6-12"	"	[illegible]	"	"		X	X	X		400 PPM	" "
9	" " - 24"	"	"	"	"	X			X	V00724	0 PPM	" "
10	M-12-93-2-8"	"	1110	"	"		X	X	X		20 PPM	" "
11	" " - 24"	"	"	"	"	X			X	V00725	20 PPM	" "
12	M-12-94-4-10"	"	1125	"	"		X	X	X		0 PPM	" "
13	" " - 24"	"	"	"	"	X			X	V00726	"	" "
14	M-12-95-6-12"	"	1145	"	"		X	X	X		"	" "

ENTERED

Comments: Cal. #1 OVA #2 HNU O.K. HU

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-31-99 1500	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

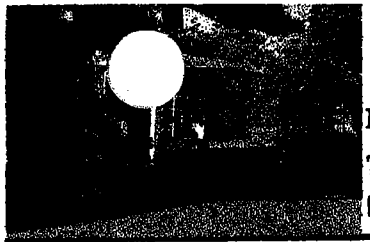
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000021

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi nmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | Project No: IJN 98-0211
Phone #: (732) 532-6223 | Location: M-12 WEST LANDFILL
(X)DERA ( )OMA ( )Other:_____
Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB AB N	%SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
47162. 15	M-12-95 - 24"	8-31-99	1145	SOIL	2	X			X	V00727	0 PPM	0 PPM 24oc
16	M-12-96 - 6-12"	"	1305	"	"		X	X	X		"	" "
17	" " - 24"	"	"	"	"	X			X	V00728	100 PPM	" "
18	M-12-97 - 6-12"	"	1340	"	"		X	X	X		9 PPM	" "
19	" " - 24"	"	"	"	"	X			X	V00729	"	" "
20	M-12-98 - 3-9"	"	1400	"	"		X	X	X		"	" "
21	" " - 24"	"	"	"	"	X			X	V00730	"	" "
22	M-12-99 - 4-10"	"	1420	"	"	ENTERED		X	X		"	" "
23	" " - 24"	"	"	"	"	X			X	V00731	"	" "
24	M-12-100 - 6-12"	"	1435	"	"		X	X	X		"	" "
25	" " - 24"	"	"	"	"	X			X	V00732	"	" "
26	M-12-101 - 6-12"	"	1445	"	"		X	X	X		"	" "
27	" " - 24"	"	"	"	"	X			X	V00733	"	" "
28	M-12-102 - 6-12"	"	1455	"	"		X	X	X		"	" "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	8-31-99 1500	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

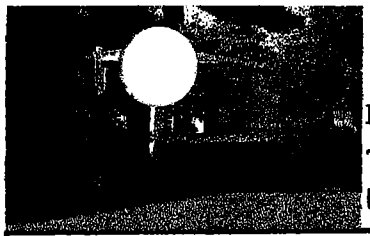
Report Type: ( )Full, ( )Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( ) Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000022

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi mental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PESTPAHCBN	%SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
47162.29	M-12-102 - 24"	8-31-99	1455	soil	2	X			X	V00734	9 PPM	0 PPM <49
30	Field Dup.-6-12"	"	—	"	"		X	X	X		"	" "
31	" " - 24"	"	—	"	"	X			X	V00735	"	" "

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	8-31-99 1500				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

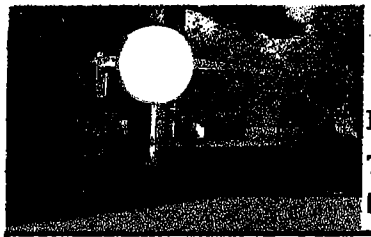
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000023

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi[illegible]mental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12- WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Analysis Parameters

Comments: Cal. #1 OVA > O.K. Cal. #2 HNU (MU)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
4774. 1	TRIP BLANK	9-7-99	—	METH.	1	X				V00747	—	HNU <4°C
2	M-12-103 - 6-12"	"	0940	SOIL	2		X	X	X		0 PPM	0 PPM "
3	" " - 24"	"	"	"	"	X			X	V00748	1 PPM	0 PPM "
4	M-12-104 - 3-9"	"	0955	"	"		X	X	X		0 PPM	" "
5	" " - 24"	"	"	"	"	X			X	V00749	"	" "
6	M-12-105 - 0-6"	"	1015	"	"		X	X	X		"	" "
7	" " - 24"	"	"	"	"	X			X	V00750	"	" "
8	M-12-106 - 0-6"	"	1035	"	"		X	X	X		"	" "
9	" " - 24"	"	"	"	"	X			X	V00751	"	" "
10	M-12-107 - 4-10"	"	1050	"	"		X	X	X		"	" "
11	" " - 24"	"	"	"	"	X			X	V00752	"	" "
12	M-12-108 - 5-11"	"	1110	"	"		X	X	X		"	" "
13	" " - 24"	"	"	"	"	X			X	V00753	"	" "
14	M-12-109 - 6-12"	"	1130	"	"		X	X	X		"	" "

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	9-7-99 1430	J. [illegible]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

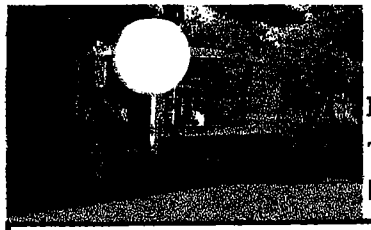
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000024

print legibly

Custodydera.xls7/27/99



Fort Monmouth Envi[illegible]nmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | **Project No: IJN 98-0211**
Phone #: (732) 532-6223 | **Location: M-12 WEST LANDFILL**
(X)DERA ( )OMA ( )Other:_____
Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Meta ALs	PEST PCB PAN	% SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
4774. 15	M-12-109-24"	9-7-99	1130	SOIL	2	X			X	V00754	0 PPM	0 PPM 44c
16	M-12-110-9-15" 0-6"	"	1315	"	"		X	X	X		"	" "
17	" " -24"	"	"	"	"	X			X	V00755	"	" "
18	M-2-111 -3-9"	"	1330	"	"		X	X	X		"	" "
19	" " -24"	"	"	"	"	X			X	V00756	"	" "
1 20	M-2-112-6-12"	"	1400	"	"		X	X	X		"	" "
21	" " -24"	"	"	"	"	X			X	V00757	"	" "
22	M-2-113-6-12"	"	1420 ENTERED	"	"		X	X	X		"	" "
23	" " -24	"	"	"	"	X			X	V00759	"	" "
24	~~M-2-114-6-12"~~ FIELD DUP.	"	—	"	"		X	X	X		"	" "
25	FIELD DUP. -24"	"	—	"	"	X			X	V00758	"	" "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	9-7-99 1430	J. Murphy			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks:

000025

print legibly

Custodydera.xls5/13/99



Fort Monmouth Envi ınmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV | Project No: IJN 98-0211
Phone #: (732) 532-6223 | Location: M-12 WEST LANDFILL
(X)DERA ( )OMA ( )Other:_____
Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
4777. 1	TRIP BLANK	9-8-99	—	soil	1	X	X			V00760	—	— 4°C
2	M-12-114 - 4-10"	"	0905	"	2		X	X	X		0 PPM	0 PPM "
3	" " - 24"	"	"	"	"	X			X	V00761	"	" "
4	M-12-115 - 6-12"	"	0920	"	"		X	X	X		"	" "
5	" " - 24"	"	"	"	"	X			X	V00762	40 PPM	" "
6	M-12-116 - 0-6"	"	0935	"	"		X	X	X		0 PPM	" "
7	" " - 24"	"	"	"	"	X			X	V00763	"	" "
* 8	M-12-117 - 4-10"	"	0950	"	"		X	X	X		"	" "
9	" " - 24"	"							X	V00764	"	" "
10	M-12-118 - 4-10"	"	1010	"	"		X	X	X		"	" "
11	" " - 24"	"	"	"	"	X			X	V00765	"	" "
12	M-12-119 - 0-6"	"	1115	"	"		X	X	X		"	" "
13	" " - 24"	"	"	"	"	X			X	V00766	15 PPM	" "
14	M-12-120 -	"	1145	"	"		X	X	X		0 PPM	" "

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	9-8-99 1510				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

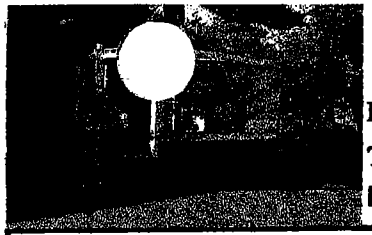
Remarks: * THIS LOCATION HAND AUGERED

Comments: Cal. #1 OVA O.K. Cal. #2 HNU > O.K. (MD) HNU

000026

print legibly

Custodydera.xls5/13/99



Fort Monmouth Envi[illegible]mental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12-WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PEST PCB PAN	%SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
4777. 15	M-12-120-24"	9-8-99	1145	soil	2	X			X	V00767	0 ppm	0 ppm <4°c
16	M-12-121-0-6"	"	1330	"	"		X	X	X		"	" "
17	" " - 24"	"	"	"	"	X			X	V00768	"	" "
18	M-12-122-0-6"	"	[illegible]				X	X	X		"	" "
19	" " -24"	"	"	"	"	X			X	V00769	"	" "
20	M-12-123-0-6"	"	1410	"	"		X	X	X		"	" "
21	" " -24"	"	"	"	"	X			X	V00770	"	" "
22	M-12-124-0-6"	"	1425	"	"		X	X	X		"	" "
23	" " -24"	"	"	"	"	X			X	V00771	"	" "
24	M-12-125-0-6"	"	1435	"	"		X	X	X		"	" "
25	" " -24"	"	"	"	"	X			X	V00772	"	" "
26	M-12-126-0-6"	"	1448	"	"		X	X	X		"	" "
27	" " 24"	"	"	"	"	X			X	V00773	"	" "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Mark Laura	9-8-99 1510	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

print legibly

Custodydera.xls5/13/99

000027



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Comments: Cal. #1 OVA O.K. Cal. #2 HNU (MU) HNU

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PESTBN	PACBN	%SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
1790. 01	TRIP BLANK	9-15-99	—	METH.	1	X					V00774	—	<4°C
02	127 0-6"	"	0930	SOIL	2		X	X	X			0 PPM	0 PPM
03	" 24"	"	"	"	"	X				X	V00775		
04	128 0-6"	"	0950	"	"		X	X	X		"		
05	" 24"	"	"	"	"	X				X	V00776		
06	129 0-6"	"	1015	"	"		X	X	X				
07	" 24"	"	"	"	"	X				X	V00777		
08	130 0-6"	"	1030	"	"		X	X	X				
09	" 24"	"	"	"	"	X				X	V00778		
10	131 0-6"	"	1050	"	"		X	X	X				
11	" 24"	"	"	"	"	X				X	V00779		
12	132 0-6"	"	1115	"	"		X	X	X				
13	" 24"	"	"	"	"	X				X	V00780		
14	133 0-6"	"	1135	"	"		X	X	X				

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	9-15-99 1445				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified
Turnaround time: (X)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

820028

print legibly

Custodydera.xls9/15/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	Metals	PESTBN	PACBN	%SOLID	VOA ID NUMBER	OVA	Comments: HNU Remarks / Preservation Method
4790.15	133 - 24"	9-15-99	1135	soil	2	X				X	V00781	0 PPM	0 PPM 40C
16	134 - 0-6"	"	1148	"	"		X	X		X		"	"
17	" - 24"	"	"	"	"	X				X	V00782	"	"
18	135 - 0-6"	"	1300	"	"		X	X		X		"	"
19	" - 24"	"	"	"	"	X				X	V00784	"	"
20	136 - 0-6"	"	1325	"	"		X	X		X		"	"
21	" - 24"	"	"	"	"	X				X	V00785	"	"
22	137 - 0-6"	"	1350	"	"		X	X		X		"	"
23	" - 24"	"	"	"	"	X				X	V00786	"	"
24	138 - 0-6"	"	1410	"	"		X	X		X		"	"
25	" - 24"	"	"	"	"	X				X	V00787	"	"
26	139 - 0-6"	"	1425	"	"		X	X		X		"	"
27	" - 24"	"	"	"	"	X				X	V00788	"	"

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Matt Laura	9-15-99 1445	J. Richard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000029

Custodyders xls5/13/99



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 West LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA+15	Metals	PESTPCBN	%SOLID	VOA ID NUMBER	OVA	Comments: HNU / Remarks / Preservation Method
4790.28	Field Dup. 0-6"	9-15-99	—	soil	2		X	X	X		0 ppm	0 ppm <40c
29	" " 24"	"	—	"	"	X			X	V00795	"	" "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Matt Laura	9-15-99 1445	J. Shepherd			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

000030



Fort Monmouth Envi nmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Comments: Cal. #1 OVA #2 HNU cilk. [illegible]

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	Remarks / Preservation Method
4793. 1	TRIP BLANK	9-20-99	—	METH.	1	X				V00789	—	HNU <4°C
2	140 0-6"	"	0900	SOIL	2		X	X	X			
3	" 24"	"	"	"	"	X			X	V00790		
4	141 0-6"	"	0920	"	"		X	X	X			
5	" 24"	"	"	"	"	X			X	V00791		
6	142 0-6"	"	0935	"	"		X	X	X			
7	" 24"	"				X			X	V00792		
* 8	143 0-6"	"	0948	"	"		X	X	X			
9	" 24"	"	"	"	"	X			X	V00793		
10	144 0-6"	"	1000	"	"		X	X	X			
11	" 24"	"	"	"	"	X			X	V00794		
12	145 0-6"	"	1012	"	"		X	X	X			
13	" 24"	"	"	"	"	X			X	V00796		
* 14	146 0-6"	"	1025	"	"		X	X	X			

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	9-20-99 1115	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

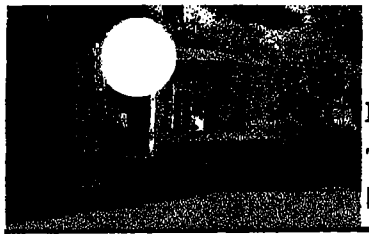
Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: * LOC. HAND AUGERED

000031

print legibly

Custodydera.xls9/15/99



Fort Monmouth Envi nmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Joseph Fallon SELFM-PW-EV
Phone #: (732) 532-6223
(X)DERA ( )OMA ( )Other:_____

Project No: IJN 98-0211
Location: M-12 WEST LANDFILL

Samplers Name / Company : MARK LAURA / TVS PWS-007

Comments: see pg. 1

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL Metals	PEST PCB ABN	% SOLID	VOA ID NUMBER	OVA	HNU Remarks / Preservation Method
4793.15	146 – 24"	9-20-99	1025	SOIL	2	X			X	V00797		4°C
* 16	147 – 0-6"	"	1040	"	"		X	X	X			
17	" – 24"	"	"	"	"	X			X	V00798		
* 18	148 – 0-6"	"	1055	"	"		X	X	X			
19	" – 24"	"	"	"	"	X			X	V00799		

ENTERED

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	9-20-99	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

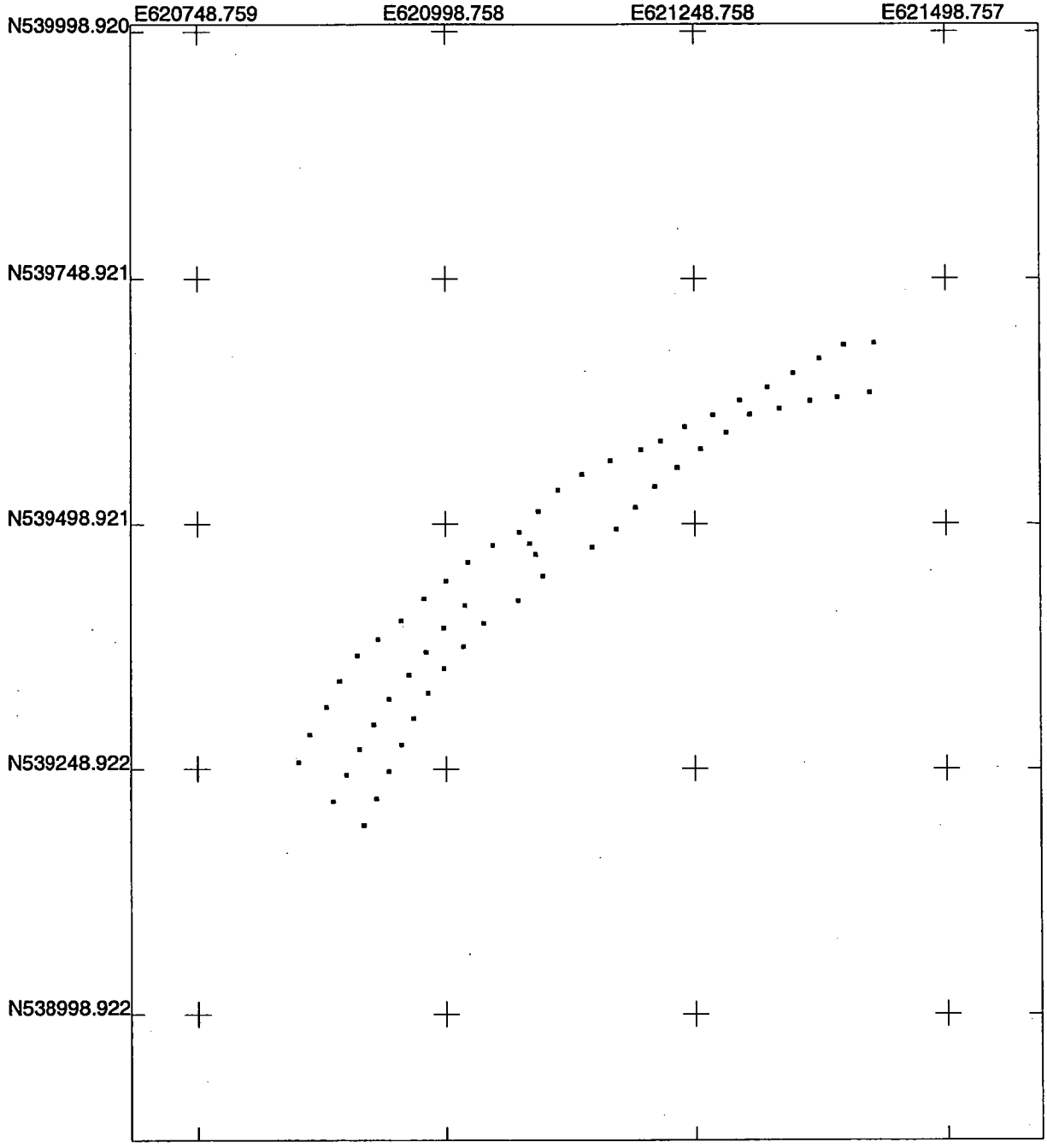
Remarks:

000032

print legibly

Custodydera.xls9/15/99

GPS MAPS



M12 GPS Location Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:2000
0 250.0
US Survey Feet

m12 r051412.cor
10/19/1999
Pathfinder Office
Trimble

M12 LANDFILL SITE GPS POSITION & COORDINATES

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

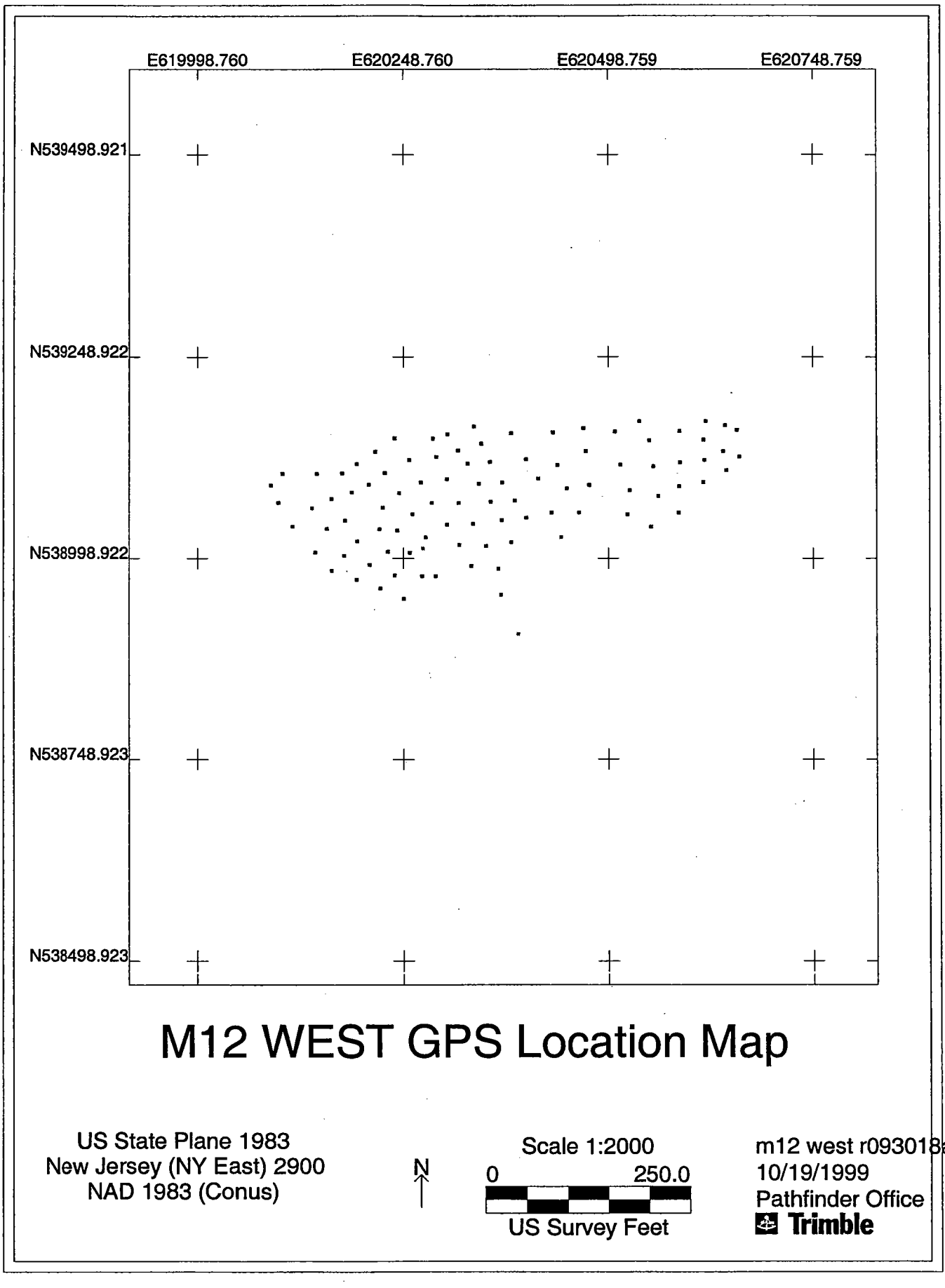
(IN US SURVEY FEET)

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
1	539683.565	621426.535
2	539681.59	621396.826
3	539667.572	621372.124
4	539652.611	621346.256
5	539638.075	621320.916
6	539624.742	621293.522
7	539609.904	621266.485
8	539597.816	621238.423
9	539583.583	621214.282
10	539574.888	621194.26
11	539563.71	621163.941
12	539549.801	621135.395
13	539533.868	621111.672
14	539511.993	621091.785
15-A	539491.116	621073.112
15-B	539479.666	621083.141
15-C	539468.384	621089.13
15	539632.7	621422.51
16	539627.857	621390.235
17	539624.402	621363.135
18	539616.303	621332.857
19	539610.542	621303.276
20	539592.423	621279.73
21	539575.723	621254.368
22	539556.45	621230.999
23	539537.385	621208.458
24	539516.16	621189.245
25	539494.394	621169.678
26	539475.771	621145.495
27	539441.145	620998.173
28	539423.262	620975.894
29	539400.718	620952.671
30	539381.597	620929.137
31	539364.862	620908.456
32	539338.767	620890.557
33	539312.269	620877.224
34	539284.165	620860.088
35	539255.92	620849.2
36	539416.517	621017.529
37	539393.145	620995.928
38	539368.447	620977.973

39	539345.121	620960.801
40	539320.5	620940.178
41	539294.583	620924.738
42	539269.209	620910.806
43	539243.284	620897.087
44	539216.446	620883.981
45	539351.512	620996.265
46	539326.534	620979.901
47	539300.775	620965.494
48	539274.012	620953.137
49	539246.696	620940.178
50	539218.901	620927.405
51	539192.082	620914.883

NATIVE BORINGS (NO SAMPLE)

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
NATIVE 1	539398.288	621037.282
NATIVE 2	539421.609	621071.792
NATIVE 3	539446.556	621096.403
NATIVE 4	539460.646	621020.53
NATIVE 5	539477.982	621046.441
NATIVE 6	539374.25	621016.044



M12 WEST GPS Location Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:2000
0 250.0
US Survey Feet

m12 west r093018a.cor
10/19/1999
Pathfinder Office
Trimble

000037

M12 WEST LANDFILL SITE GPS POSITION & COORDINATES

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

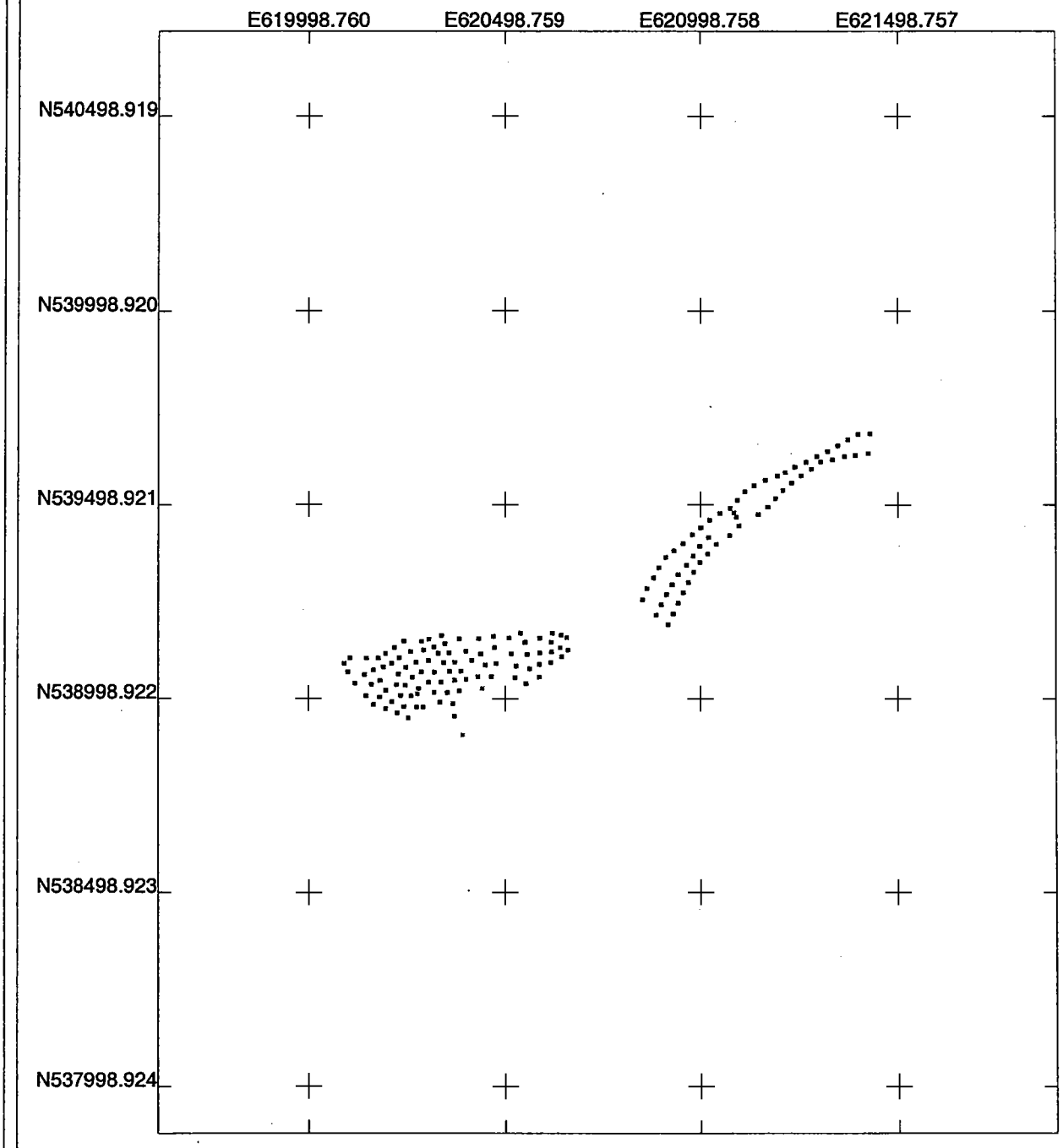
POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
52	538984.034	620160.357
53	539006.806	620140.418
54	539039.057	620112.879
55	539068.326	620095.626
56	539089.953	620086.838
57	538972.779	620190.688
58	539003.006	620175.587
59	539036.315	620154.538
60	539061.649	620136.705
61	539104.371	620100.719
63	538962.011	620219.78
64	538991.431	620206.616
65	539020.575	620191.504
66	539046.291	620176.563
67	539073.081	620160.076
68	539104.316	620142.41
69	538948.921	620248.476
70	538978.272	620237.424
71	539007.697	620229.009
72	539035.52	620218.747
73	539081.292	620184.841
74	539104.711	620172.933
75	538977.242	620270.631
76	539006.526	620256.09
77	539033.992	620240.695
78	539062.264	620223.067
79	539090.918	620205.753
80	539116.346	620191.022
81	538977.364	620287.403
82	539025.508	620275.295
83	539054.388	620259.229
84	539080.36	620243.071
85	539105.095	620225.363
86	539131.503	620213.714
87	538989.78	620330.616
88	539016.015	620315.989
89	539041.324	620301.351

90	539068.482	620282.569
91	539093.432	620269.252
92	539121.263	620255.161
93	539148.183	620237.409
94	538953.91	620366.827
95	538986.383	620363.584
96	539014.816	620348.756
97	539042.389	620332.963
98	539068.09	620315.506
99	539097.547	620301.053
100	539125.101	620288.344
101	539147.786	620284.063
102	539019.511	620379.348
103	539046.765	620367.828
104	539069.565	620354.393
105	539092.05	620339.764
106	539116.829	620326.399
107	539133.199	620314.74
108	539153.102	620301.835
109	539049.826	620397.304
110	539070.836	620383.882
111	539093.429	620368.108
112	539118.783	620353.536
113	539141.441	620342.981
114	539162.677	620334.192
115	539056.148	620427.863
116	539098.067	620411.789
117	539122.161	620397.075
118	539154.16	620379.347
119	539056.328	620462.083
120	539086.223	620446.491
121	539114.989	620435.131
122	539155.281	620429.744
126	539160.613	620467.434
125	539131.977	620470.249
124	539090.385	620474.252
127	539054.02	620521.869
128	539083.612	620524.667
129	539115.391	620513.204
130	539156.551	620506.359
131	539038.78	620550.749
132	539076.809	620559.741
133	539113.298	620553.53
134	539145.416	620548.375
135	539169.15	620536.667
136	539055.934	620584.58
137	539088.74	620585.052
138	539118.16	620586.169
139	539156.948	620585.706
140	539093.684	620614.64
141	539121.135	620616.284
142	539146.137	620614.774

143	539169.18	620617.703
144	539108.327	620642.639
145	539131.942	620638.681
146	539164.145	620641.209
147	539125.361	620658.614
148	539158.346	620655.485

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
975 HYDRANT	539025.541	620439.363
FM COVER	538905.022	620387.84
POLE JC123OPT	539011.845	620271.741



M12 and M12 West GPS Location Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:5000
0 600.0
US Survey Feet

m12 n m12 west combo.ss
10/19/1999
Pathfinder Office
Trimble

000041

LANDFILL COVER

M-12
Landfill Cover

Boring		Boring		Boring	
B1	Minimum 18 inch cap.	B52	Minimum 18 inch cap.	B104	Minimum 3 inch cap.
B2	Minimum 6 inch cap.	B53	Minimum 18 inch cap.	B105	Minimum 1 inch cap.
B3	Minimum 6 inch cap.	B54	Minimum 1 foot cap.	B106	Minimum 18 inch cap.
B4	Minimum 2 foot cap.	B55	Minimum 2 foot cap.	B107	Minimum 2 foot cap.
B5	Minimum 6 inch cap.	B56	Minimum 2 foot cap.	B108	Minimum 2 foot cap.
B6	Minimum 2 foot cap.	B57	Minimum 18 inch cap.	B109	Minimum 2 foot cap.
B7	Minimum 2 foot cap.	B58	Minimum 18 inch cap.	B110	Minimum 1 foot cap.
B8	Minimum 2 foot cap.	B59	Minimum 6 inch cap.	B111	Minimum 2 foot cap.
B9	Minimum 2 foot cap.	B60	Minimum 6 inch cap.	B112	Minimum 2 foot cap.
B10	Minimum 18 inch cap.	B61	Minimum 2 foot cap.	B113	Minimum 2 foot cap.
B11	Minimum 2 foot cap.	B63	Minimum 2 foot cap.	B114	Minimum 2 foot cap.
B12	Minimum 2 foot cap.	B64	Minimum 18 inch cap.	B115	Minimum 6 inch cap.
B13	Minimum 18 inch cap.	B65	Minimum 2 foot cap.	B116	Minimum 1 inch cap.
B14	Minimum 2 foot cap.	B66	Minimum 2 foot cap.	B117	Minimum 2 foot cap.
B15	Minimum 2 foot cap.	B67	Minimum 6 inch cap.	B118	Minimum 2 foot cap.
B16	Minimum 3 inch cap.	B68	Minimum 6 inch cap.	B119	Minimum 1 inch cap.
B17	Minimum 6 inch cap.	B69	Minimum 2 foot cap.	B120	Minimum 1 inch cap.
B18	Minimum 3 inch cap.	B70	Minimum 2 foot cap.	B121	Minimum 1 inch cap.
B19	Minimum 3 inch cap.	B71	Minimum 2 foot cap.	B122	Minimum 1 inch cap.
B20	Minimum 18 inch cap.	B72	Minimum 2 foot cap.	B123	Minimum 1 inch cap.
B21	Minimum 3 inch cap.	B73	Minimum 6 inch cap.	B124	Minimum 1 inch cap.
B22	Minimum 3 inch cap.	B74	Minimum 18 inch cap.	B125	Minimum 2 foot cap.
B23	Minimum 2 foot cap.	B75	Minimum 2 foot cap.	B126	Minimum 2 foot cap.
B24	Minimum 2 foot cap.	B76	Minimum 2 foot cap.	B127	Minimum 18 inch cap.
B25	Minimum 2 foot cap.	B77	Minimum 2 foot cap.	B128	Minimum 1 inch cap.
B26	Minimum 2 foot cap.	B78	Minimum 2 foot cap.	B129	Minimum 2 foot cap.
B27	Minimum 2 foot cap.	B79	Minimum 6 inch cap.	B130	Minimum 2 foot cap.
B28	Minimum 18 inch cap.	B80	Minimum 18 imch cap.	B131	Minimum 18 inch cap.
B29	Minimum 18 inch cap.	B81	Minimum 2 foot cap.	B132	Minimum 2 foot cap.
B30	Minimum 3 inch cap.	B82	Minimum 2 foot cap.	B133	Minimum 2 foot cap.
B31	Minimum 3 inch cap.	B83	Minimum 18 inch cap.	B134	Minimum 2 foot cap.
B32	Minimum 1foot cap.	B84	Minimum 18 inch cap.	B135	Minimum 2 foot cap.
B33	Minimum 3 inch cap.	B85	Minimum 18 inch cap.	B136	Minimum 1 foot cap.
B34	Minimum 1 foot cap.	B86	Minimum 2 foot cap.	B137	Minimum 1 inch cap.
B35	Minimum 3 inch cap.	B87	Minimum 2 foot cap.	B138	Minimum 2 foot cap.
B36	Minimum 2 foot cap.	B88	Minimum 2 foot cap.	B139	Minimum 1 inch cap.
B37	Minimum 3 inch cap.	B89	Minimum 1 foot cap.	B140	Minimum 2 foot cap.
B38	Minimum 3 inch cap.	B90	Minimum 6 inch cap.	B141	Minimum 2 foot cap.
B39	Minimum 6 inch cap.	B91	Minimum 6 inch cap.	B142	Minimum 2 foot cap.
B40	Minimum 6 inch cap.	B92	Minimum 2 foot cap.	B143	Minimum 2 foot cap.
B41	Minimum 2 foot cap.	B93	Minimum 2 foot cap.	B144	Minimum 1 foot cap.
B42	Minimum 6 inch cap.	B94	Minimum 2 foot cap.	B145	Minimum 2 foot cap.
B43	Minimum 1 foot cap.	B95	Minimum 2 foot cap.	B146	Minimum 2 foot cap.
B44	Minimum 2 foot cap.	B96	Minimum 2 foot cap.	B147	Minimum 2 foot cap.
B45	Minimum 1 foot cap.	B97	Minimum 2 foot cap.	B148	Minimum 2 foot cap.
B46	Minimum 6 inch cap.	B98	Minimum 2 foot cap.		
B47	Minimum 6 inch cap.	B99	Minimum 18 inch cap.		
B48	Minimum 1 foot cap.	B100	Minimum 1 foot cap.		
B49	Minimum 6 inch cap.	B101	Minimum 2 foot cap.		
B50	Minimum 1 foot cap.	B102	Minimum 2 foot cap.		
B51	Minimum 3 inch cap.	B103	Minimum 1 foot cap.		

FIELD DUPLICATE IDENTIFICATION

Field Duplicate Identification

Sample ID	Lab ID	Field Duplicate
M12 B-20 6-12"	3425.02	3425.24
M12 B-20 24"	3425.03	3425.25
M12 B-40 6-12"	3428.20	3428.24
M12 B-40 24"	3428.21	3428.25
M12 B-72 7-13"	4754.20	4754.24
M12 B-72 24"	4754.21	4754.25
M12 B-92 6-12"	4762.08	4762.30
M12 B-92 24"	4762.09	4762.31
M12 B-112 6-12"	4774.20	4774.24
M12 B-112 24"	4774.21	4774.25
M12 B-134 0-6"	4790.16	4790.28
M12 B-134 24"	4790.17	4790.29

METHODOLOGY SUMMARY

Method Summary

EPA SW-846 Method 8260
Gas Chromatographic Determination of Volatiles in Soil

A 50ul volume of methanol soil sample is added to 5-ml aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture, methanol volume and concentration.

EPA SW-846 Method 8270
Gas Chromatographic Determination of Semi-volatiles in Soil

Surrogates are added to a 10-gram soil sample, which has been dried with sodium sulfate. The sample is then extracted using a soxtherm extractor. The extract is concentrated to 1 ml. Internal standards are added and the sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

EPA SW-846 Method 8080
Gas Chromatographic Determination of Pesticides and PCB's in Soil

Surrogates are added to a 10-gram soil sample, which has been dried with sodium sulfate. The sample is then extracted using a soxtherm extractor. The extract is concentrated to 10 ml. Internal standards are added and the sample is injected into a GC/ECD system. Pesticides and PCB's are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

EPA SW-846 Method 9045
pH Electrometric Measurement of Soils

20 ml of reagent water is added to a 20-gram soil sample. The sample is covered and then continuously stir the suspension for 5 minutes. Allow the suspension to stand for approximately 1 hour. Lower a calibrated glass electrode deep enough into the clear supernatant to obtain a pH measurement. Record this reading.

Methodology Summary

EPA SW-846 Method 3151, 3rd Edition Base Manual with Final Updates I, II, IIA, IIB, and III: Digestion TAL Metals

Milestone MLS 1200 MEGA
A representative sample of 1.0 to 0.5 g is digested in 10 ml of concentrated nitric acid for 10 minutes using microwave heating with a suitable laboratory microwave unit. The sample and acid are placed in a fluorocarbon (TFM) microvessel. This vessel is capped and heated in the microwave unit. After cooling the vessel contents are filtered and then diluted to 100ml volume and analyzed by ICP.

EPA SW-846 Method 6010B, 3rd Edition Base Manual with Final Updates I, II, IIA, IIB, and III: ICP TAL Metals

Perkin Elmer OPTIMA 3000 DV
The method measures element–emitted light by optical spectrometry. Samples are nebulized and the resulting aerosol is transported to the plasma torch. Radio-frequency inductively coupled plasma produces element-specific atomic-line emission spectra. The spectra are dispersed by a grating spectrometer, and a Segmented-array Charged-coupled-device Detector (SCD) monitors the intensities of the lines. Background and inter-elemental correction is used for trace element determinations.

EPA SW-846 Method 7471A, 3rd Edition Base Manual with Final Updates I, II, IIA, IIB, and III: Mercury

Varian SpectrAA-640, VGA-77
The flameless AA procedure is a physical method based on the absorption of radiation at 253.7 nm by mercury vapor. The mercury is reduced to the elemental state and aerated from solution in a closed system. The mercury vapor passes through a cell positioned in the light path of an atomic absorption spectrometer. Absorbance (peak height) is measured as a function of mercury concentration and recorded in the usual manner.

CASE NARRATIVE

CASE NARRATIVE

Site: M-12/ Landfill Cover

Lab ID: 3420, 3424, 3425, 3428, 3432, 4748, 4754, 4760, 4762, 4774, 4777, 4790, 4793

There is no sample designated Boring 62 (B-62). This number was overlooked.

Acetone is found in the Trip Blank and all of the samples taken on 8/31/99.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 3420 **Site:** M-12

	Date	Hold Time
Date Sampled	03/19/98	NA
Receipt/Refrigeration	03/19/98	NA
Extractions		
1. Semivolatiles	03/24/98	14 Days
2. Pest/PCB's	03/20,23/98	14 Days
Analyses		
1. Volatile Organics	03/27/98, 04/01/98	14 days
2. Semivolatiles	04/02/98	40 Days
3. Pest/PCB's	04/25/98	40 Days
4. Metals	03/31/98	6 Months
5. Mercury	03/27/98	28 Days

Laboratory Chronicle

Lab ID: 3424 **Site:** M-12

	Date	Hold Time
Date Sampled	03/20/98	NA
Receipt/Refrigeration	03/20/98	NA
Extractions		
1. Semivolatiles	03/24/98	14 Days
2. Pest/PCB's	03/23,25/98	14 Days
Analyses		
1. Volatile Organics	04/01/98	14 days
2. Semivolatiles	04/02,03/98	40 Days
3. Pest/PCB's	05/01,02/98	40 Days
4. Metals	03/31/98	6 Months
5. Mercury	03/27/98	28 Days

Laboratory Chronicle

Lab ID: 3425 **Site:** M-12

	Date	Hold Time
Date Sampled	03/23/98	NA
Receipt/Refrigeration	03/23/98	NA
Extractions		
1. Semivolatiles	03/24/98	14 Days
2. Pest/PCB's	03/25/98	14 Days
Analyses		
1. Volatile Organics	04/03,04/98	14 days
2. Semivolatiles	04/03,06,07,08/98	40 Days
3. Pest/PCB's	05/02,04/98	40 Days
4. Metals	03/31/98	6 Months
5. Mercury	03/27/98	28 Days

Laboratory Chronicle

Lab ID: 3428 **Site:** M-12

	Date	Hold Time
Date Sampled	03/24/98	NA
Receipt/Refrigeration	03/24/98	NA
Extractions		
1. Semivolatiles	03/26/98	14 Days
2. Pest/PCB's	03/25/98	14 Days
Analyses		
1. Volatile Organics	04/06/98	14 days
2. Semivolatiles	04/07,08/98	40 Days
3. Pest/PCB's	05/04,15/98	40 Days
4. Metals	03/31/98	6 Months
5. Mercury	04/01/98	28 Days

Laboratory Chronicle

Lab ID: 3432 **Site:** M-12

	Date	Hold Time
Date Sampled	03/25/98	NA
Receipt/Refrigeration	03/25/98	NA
Extractions		
1. Semivolatiles	03/26/98	14 Days
2. Pest/PCB's	03/26,27/98	14 Days
Analyses		
1. Volatile Organics	04/07/98	14 days
2. Semivolatiles	04/09,10/98	40 Days
3. Pest/PCB's	05/05,06/98	40 Days
4. Metals	03/31/98	6 Months
5. Mercury	04/01/98	28 Days

Laboratory Chronicle

Lab ID: 4748 **Site:** M-12

	Date	Hold Time
Date Sampled	08/26/99	NA
Receipt/Refrigeration	08/26/99	NA
Extractions		
1. Semivolatiles	08/27/99	14 Days
2. Pest/PCB's	08/27/99	14 Days
Analyses		
1. Volatile Organics	09/01/99	14 days
2. Semivolatiles	09/01,02/99	40 Days
3. Pest/PCB's	09/22/99	40 Days
4. Metals	09/01/99	6 Months
5. Mercury	09/01/99	28 Days

Laboratory Chronicle

Lab ID: 4754 **Site:** M-12

	Date	Hold Time
Date Sampled	08/27/99	NA
Receipt/Refrigeration	08/27/99	NA
Extractions		
1. Semivolatiles	08/31/99	14 Days
2. Pest/PCB's	08/30/99	14 Days
Analyses		
1. Volatile Organics	09/01,02/99	14 days
2. Semivolatiles	09/02,03/99	40 Days
3. Pest/PCB's	09/24/99	40 Days
4. Metals	09/09/99	6 Months
5. Mercury	09/08/99	28 Days

Laboratory Chronicle

Lab ID: 4760 **Site:** M-12

	Date	Hold Time
Date Sampled	08/30/99	NA
Receipt/Refrigeration	08/30/99	NA
Extractions		
1. Semivolatiles	08/31/99, 09/02/99	14 Days
2. Pest/PCB's	09/01/99	14 Days
Analyses		
1. Volatile Organics	09/01,02,03/99	14 days
2. Semivolatiles	09/03,07/99	40 Days
3. Pest/PCB's	09/27,28/99	40 Days
4. Metals	09/09/99	6 Months
5. Mercury	09/08/99	28 Days

Laboratory Chronicle

Lab ID: 4762 **Site:** M-12

	Date	Hold Time
Date Sampled	08/31/99	NA
Receipt/Refrigeration	08/31/99	NA
Extractions		
1. Semivolatiles	09/02,08/99	14 Days
2. Pest/PCB's	09/01,03/99	14 Days
Analyses		
1. Volatile Organics	09/08/99	14 days
2. Semivolatiles	09/08/99	40 Days
3. Pest/PCB's	09/28/99, 10/06,07/99	40 Days
4. Metals	09/09/99	6 Months
5. Mercury	09/08/99	28 Days

Laboratory Chronicle

Lab ID: 4774 **Site:** M-12

	Date	Hold Time
Date Sampled	09/07/99	NA
Receipt/Refrigeration	09/07/99	NA
Extractions		
1. Semivolatiles	09/08/99	14 Days
2. Pest/PCB's	09/10/99	14 Days
Analyses		
1. Volatile Organics	09/09/99	14 days
2. Semivolatiles	09/09/99	40 Days
3. Pest/PCB's	10/15,18/99	40 Days
4. Metals	09/09/99	6 Months
5. Mercury	09/08/99	28 Days

Laboratory Chronicle

Lab ID: 4777 **Site:** M-12

	Date	Hold Time
Date Sampled	09/08/99	NA
Receipt/Refrigeration	09/08/99	NA
Extractions		
1. Semivolatiles	09/20/99	14 Days
2. Pest/PCB's	09/10,13/99	14 Days
Analyses		
1. Volatile Organics	09/15,20/99	14 days
2. Semivolatiles	09/21,23,27/99	40 Days
3. Pest/PCB's	10/18,19/99	40 Days
4. Metals	09/22/99	6 Months
5. Mercury	09/14/99	28 Days

Laboratory Chronicle

Lab ID: 4790 **Site:** M-12

	Date	Hold Time
Date Sampled	09/15/99	NA
Receipt/Refrigeration	09/15/99	NA
Extractions		
1. Semivolatiles	09/22/99	14 Days
2. Pest/PCB's	09/21/99	14 Days
Analyses		
1. Volatile Organics	09/20,21/99	14 days
2. Semivolatiles	09/23,24,27,29/99, 10/01/99	40 Days
3. Pest/PCB's	10/21/99	40 Days
4. Metals	09/22/99	6 Months
5. Mercury	09/21/99	28 Days

Laboratory Chronicle

Lab ID: 4793 **Site:** M-12

	Date	Hold Time
Date Sampled	09/20/99	NA
Receipt/Refrigeration	09/20/99	NA
Extractions		
1. Semivolatiles	09/22/99	14 Days
2. Pest/PCB's	09/21/99	14 Days
Analyses		
1. Volatile Organics	09/29/99	14 days
2. Semivolatiles	09/24,27/99	40 Days
3. Pest/PCB's	10/22/99	40 Days
4. Metals	09/22/99	6 Months
5. Mercury	09/21/99	28 Days

SOIL CLEANUP CRITERIA

Soil Cleanup Criteria

Compound	mg/kg
Acrolein	NLE
Acrylonitrile	1
tert-Butyl alcohol	NLE
Methyl-tert-Butyl ether	NLE
Di-isopropyl ether	NLE
Dichlorodifluoromethane	NLE
Chloromethane	520
Vinyl Chloride	2
Bromomethane	79
Chloroethane	NLE
Trichlorofluoromethane	NLE
1,1-Dichloroethene	8
Acetone	1000
Carbon Disulfide	NLE
Methylene Chloride	49
trans-1,2-Dichloroethene	1000
1,1-Dichloroethane	570
Vinyl Acetate	NLE
2-Butanone	1000
cis-1,2-Dichloroethene	79
Chloroform	19
1,1,1-Trichloroethane	210
Carbon Tetrachloride	2
Benzene	3
1,2-Dichloroethane	6
Trichloroethene	23
1,2-Dichloropropane	10
Bromodichloromethane	11
2-Chloroethyl vinyl ether	NLE
cis-1,3-Dichloropropene	4
4-Methyl-2-Pentanone	1000
Toluene	1000
trans-1,3-Dichloropropene	4
1,1,2-Trichloroethane	22
Tetrachloroethene	4
2-Hexanone	NLE
Dibromochloromethane	110
Chlorobenzene	37
Ethylbenzene	1000
Total Xylenes	410
Styrene	23
Bromoform	86
1,1,2,2-Tetrachloroethane	34
Anthracene	10000
Di-n-butylphthalate	5700
Fluoranthene	2300
Benzidine	NLE
Pyrene	1700
Butylbenzylphthalate	1100
Benzo(a)anthracene	0.9
3,3'-Dichlorobenzidine	2
bis(2-Ethylhexyl)phthalate	49
Di-n-octylphthalate	1100
Benzo(b)fluoranthene	0.9
Benzo(k)fluoranthene	0.9
Benzo(a)pyrene	0.66
Indeno(1,2,3-cd)pyrene	0.9

Compound	mg/kg
Pyridine	NLE
N-nitroso-dimethylamine	NLE
Aniline	NLE
Phenol	10000
bis(2-Chloroethyl)ether	0.66
2-Chlorophenol	280
1,3-Dichlorobenzene	5100
1,4-Dichlorobenzene	570
Benzyl alcohol	10000
1,2-Dichlorobenzene	5100
2-Methylphenol	2800
bis(2-chloroisopropyl)ether	2300
4-Methylphenol	2800
n-Nitroso-di-n-propylamine	0.66
Hexachloroethane	6
Nitrobenzene	28
Isophorone	1100
2-Nitrophenol	NLE
2,4-Dimethylphenol	1100
bis(2-Chloroethoxy) methane	NLE
2,4-Dichlorophenol	170
Benzoic Acid	NLE
1,2,4-Trichlorobenzene	68
Naphthalene	230
4-Chloroaniline	230
Hexachlorobutadiene	1
2,4,6-Trichlorophenol	62
2,4,5-Trichlorophenol	5600
2-Chloronaphthalene	NLE
4-Chloro-3-methylphenol	10000
2-Methylnaphthalene	NLE
Hexachlorocyclopentadiene	400
2-Nitroaniline	NLE
Dimethylphthalate	NLE
Acenaphthylene	NLE
2,6-Dinitrotoluene	NLE
3-Nitroaniline	NLE
Acenaphthene	3400
2,4-Dinitrophenol	110
4-Nitrophenol	NLE
Dibenzofuran	NLE
2,4-Dinitrotoluene	1
Diethylphthalate	10000
Fluorene	2300
4-Chlorophenyl-phenylether	NLE
4-Nitroaniline	NLE
4,6-Dinitro-2-methylphenol	NLE
n-Nitrosodiphenylamine	140
4-Bromophenyl-phenylether	NLE
Hexachlorobenzene	0.66
Pentachlorophenol	6
Phenanthrene	NLE
Dibenz(a,h)anthracene	0.66
Benzo(g,h,i)perylene	NLE
Azobenzene	NLE
Chrysene	9

NLE- No Limits Established

QUALIFIER CODES

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound in both sample and blank
D : Results from dilution of sample
U : Compound searched for but not detected

ANALYTICAL RESULTS

VOLATILE ORGANICS

METHOD BLANKS

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK40

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03362.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1500	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK40

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03362.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

VBLK40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK40

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03362.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **VBLK42**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK42

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03414.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK42

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK42

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03414.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **VBLK42**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK42

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03414.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK44

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK44

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03448.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	880	U
107131	Acrylonitrile	880	U
75650	tert-Butyl alcohol	1600	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK44

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK44

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03448.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **VBLK44**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK44

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03448.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK45

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK45

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03467.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK45

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK45

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03467.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **VBLK45**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK45

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03467.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK46

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03486.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK46

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03486.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

VBLK46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK46

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03486.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk126

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk126

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004181.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk126

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk126

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004181.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk126**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk126

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004181.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk127

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk127

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004206.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk127

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk127

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004206.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk127**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk127

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004206.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk24

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk24

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000740.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk24

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk24

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000740.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk24

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk24

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000740.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk25

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk25

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk25

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk129

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk129

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004242.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk129

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk129

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004242.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk129**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk129

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004242.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk130

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk130

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004267.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk130

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk130

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004267.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk130**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk130

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004267.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk27

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000806.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk27

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000806.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk27

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: Vblk27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000806.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

000253

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk28

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk28

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000827.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk28

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk28

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000827.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk28

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk28

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000827.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk29

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk29

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000853.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk29

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk29

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000853.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk29

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk29

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000853.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk34

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk34

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001015.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Vblk34

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk34

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001015.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Vblk34

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Vblk34

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001015.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

TRIP BLANKS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. Trip Blank 3/19/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.19

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03375.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1500	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Trip Blank 3/19/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.19

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03375.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

Trip Blank 3/19/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.19

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03375.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 0 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 3/20/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03416.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: Trip Blank 3/20/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03416.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Trip Blank 3/20/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03416.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 0 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03449.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	880	U
107131	Acrylonitrile	880	U
75650	tert-Butyl alcohol	1600	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03449.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Trip Blank 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03449.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 0 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03468.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Trip Blank 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03468.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

Trip Blank 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03468.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 0 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Trip Blank 3/25/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03487.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Trip Blank 3/25/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03487.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

Trip Blank 3/25/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03487.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 0 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID: Trip Blank 8/26/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004182.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 8 26 99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004182.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Trip Blank 8/26/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004182.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: Trip Blank 8/27/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004195.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 8/27/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004195.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Trip Blank 8/27/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004195.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 8/30/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000741.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 8/30/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000741.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Trip Blank 8/30/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000741.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 0 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: Trip Blank 8/31/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004243.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	9800	
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID: Trip Blank 8/31/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004243.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Trip Blank 8/31/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004243.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 0 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: Trip Blank 9/7/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004269.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/7/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004269.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Trip Blank 9/7/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004269.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 0 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/8/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000807.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/8/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000807.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Trip Blank 9/8/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000807.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 0 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000831.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000831.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Trip Blank 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000831.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 0 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/20/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001019.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	3200	
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank 9/20/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001019.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Trip Blank 9/20/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.01

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001019.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 0 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

FIELD DUPLICATES

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: Field Dup 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.25

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03461.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 14.42 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1900	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: Field Dup 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.25

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03461.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 14.42 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Dup** 3/23/98

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.25

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03461.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 14.42 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-Field Dup 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03480.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.62 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-Field Dup 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03480.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.62 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-Field Dup 3/24/98

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03480.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.62 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID: Field Dup 8/27/99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004217.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.88 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 8/27/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004217.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.88 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Field Dup 8/27/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.25

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004217.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.88 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 8/31/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.31

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004268.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.38 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	840	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	320	J
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	840	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	12000	
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	840	U
78-93-3	2-Butanone	840	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	300	
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 8/31/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.31

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004268.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.38 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	840	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Field Dup 8/31/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.31

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004268.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.38 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.33	1800	J

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 9/7/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.25

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004281.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 30.97 Date Analyzed: 9/10/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2600	U
107131	Acrylonitrile	2600	U
75650	tert-Butyl alcohol	4700	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	730	U
	Dichlorodifluoromethane	1500	U
74-87-3	Chloromethane	360	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	730	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	730	U
75-35-4	1,1-Dichloroethene	360	U
67-64-1	Acetone	730	U
75-15-0	Carbon Disulfide	360	U
75-09-2	Methylene Chloride	730	U
156-60-5	trans-1,2-Dichloroethene	730	U
75-35-3	1,1-Dichloroethane	360	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	360	U
67-66-3	Chloroform	360	U
75-55-6	1,1,1-Trichloroethane	360	U
56-23-5	Carbon Tetrachloride	730	U
71-43-2	Benzene	360	U
107-06-2	1,2-Dichloroethane	730	U
79-01-6	Trichloroethene	360	U
78-87-5	1,2-Dichloropropane	360	U
75-27-4	Bromodichloromethane	360	U
110-75-8	2-Chloroethyl vinyl ether	730	U
10061-01-5	cis-1,3-Dichloropropene	360	U
108-10-1	4-Methyl-2-Pentanone	730	U
108-88-3	Toluene	360	U
10061-02-6	trans-1,3-Dichloropropene	730	U
79-00-5	1,1,2-Trichloroethane	730	U
127-18-4	Tetrachloroethene	360	U
591-78-6	2-Hexanone	730	U
126-48-1	Dibromochloromethane	730	U
108-90-7	Chlorobenzene	360	U
100-41-4	Ethylbenzene	730	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 9/7/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.25

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004281.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 30.97 Date Analyzed: 9/10/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	730	U
100-42-5	Styrene	730	U
75-25-2	Bromoform	730	U
79-34-5	1,1,2,2-Tetrachloroethane	730	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: Field Dup 9/7/99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.25

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004281.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 30.97 Date Analyzed: 9/10/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.29

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000856.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.05 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dup 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.29

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000856.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.05 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Field Dup 9/15/99

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.29

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000856.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.05 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

SAMPLES

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-1

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03415.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 7.93 Date Analyzed: 04/01/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1100	U
107131	Acrylonitrile	1100	U
75650	tert-Butyl alcohol	1600	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

000323

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-1

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03415.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 7.93 Date Analyzed: 04/01/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

0C0324

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-1

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03415.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 7.93 Date Analyzed: 04/01/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-2

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.04

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03367.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 41.67 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1700	U
107131	Acrylonitrile	1700	U
75650	tert-Butyl alcohol	2500	U
1634044	Methyl-tert-Butyl ether	1300	U
108203	Di-isopropyl ether	840	U
	Dichlorodifluoromethane	1700	U
74-87-3	Chloromethane	420	U
75-01-4	Vinyl Chloride	1300	U
74-83-9	Bromomethane	840	U
75-00-3	Chloroethane	1300	U
75-69-4	Trichlorofluoromethane	840	U
75-35-4	1,1-Dichloroethene	420	U
67-64-1	Acetone	840	U
75-15-0	Carbon Disulfide	420	U
75-09-2	Methylene Chloride	840	U
156-60-5	trans-1,2-Dichloroethene	840	U
75-35-3	1,1-Dichloroethane	420	U
108-05-4	Vinyl Acetate	1300	U
78-93-3	2-Butanone	1300	U
	cis-1,2-Dichloroethene	420	U
67-66-3	Chloroform	420	U
75-55-6	1,1,1-Trichloroethane	420	U
56-23-5	Carbon Tetrachloride	840	U
71-43-2	Benzene	420	U
107-06-2	1,2-Dichloroethane	840	U
79-01-6	Trichloroethene	420	U
78-87-5	1,2-Dichloropropane	420	U
75-27-4	Bromodichloromethane	420	U
110-75-8	2-Chloroethyl vinyl ether	840	U
10061-01-5	cis-1,3-Dichloropropene	420	U
108-10-1	4-Methyl-2-Pentanone	840	U
108-88-3	Toluene	420	U
10061-02-6	trans-1,3-Dichloropropene	840	U
79-00-5	1,1,2-Trichloroethane	840	U
127-18-4	Tetrachloroethene	420	U
591-78-6	2-Hexanone	840	U
126-48-1	Dibromochloromethane	840	U
108-90-7	Chlorobenzene	420	U
100-41-4	Ethylbenzene	840	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-2

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.04

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03367.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 41.67 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1300	U
1330-20-7	o-Xylene	840	U
100-42-5	Styrene	840	U
75-25-2	Bromoform	840	U
79-34-5	1,1,2,2-Tetrachloroethane	840	U

OOL327

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **B-2**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.04

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03367.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 41.67 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-3

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.06

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03368.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 22.5 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1200	U
107131	Acrylonitrile	1200	U
75650	tert-Butyl alcohol	1900	U
1634044	Methyl-tert-Butyl ether	940	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	940	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	940	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	940	U
78-93-3	2-Butanone	940	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-3

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.06

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03368.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 22.5 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	940	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-3

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.06

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03368.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 22.5 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-4

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.08

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03369.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 42.56 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2400	U
1634044	Methyl-tert-Butyl ether	1200	U
108203	Di-isopropyl ether	810	U
	Dichlorodifluoromethane	1600	U
74-87-3	Chloromethane	400	U
75-01-4	Vinyl Chloride	1200	U
74-83-9	Bromomethane	810	U
75-00-3	Chloroethane	1200	U
75-69-4	Trichlorofluoromethane	810	U
75-35-4	1,1-Dichloroethene	400	U
67-64-1	Acetone	810	U
75-15-0	Carbon Disulfide	400	U
75-09-2	Methylene Chloride	810	U
156-60-5	trans-1,2-Dichloroethene	810	U
75-35-3	1,1-Dichloroethane	400	U
108-05-4	Vinyl Acetate	1200	U
78-93-3	2-Butanone	1200	U
	cis-1,2-Dichloroethene	400	U
67-66-3	Chloroform	400	U
75-55-6	1,1,1-Trichloroethane	400	U
56-23-5	Carbon Tetrachloride	810	U
71-43-2	Benzene	400	U
107-06-2	1,2-Dichloroethane	810	U
79-01-6	Trichloroethene	400	U
78-87-5	1,2-Dichloropropane	400	U
75-27-4	Bromodichloromethane	400	U
110-75-8	2-Chloroethyl vinyl ether	810	U
10061-01-5	cis-1,3-Dichloropropene	400	U
108-10-1	4-Methyl-2-Pentanone	810	U
108-88-3	Toluene	400	U
10061-02-6	trans-1,3-Dichloropropene	810	U
79-00-5	1,1,2-Trichloroethane	810	U
127-18-4	Tetrachloroethene	400	U
591-78-6	2-Hexanone	810	U
126-48-1	Dibromochloromethane	810	U
108-90-7	Chlorobenzene	400	U
100-41-4	Ethylbenzene	810	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-4

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.08

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03369.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 42.56 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1200	U
1330-20-7	o-Xylene	810	U
100-42-5	Styrene	810	U
75-25-2	Bromoform	810	U
79-34-5	1,1,2,2-Tetrachloroethane	810	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-4

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.08

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03369.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 42.56 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

060334

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-5

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.10

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03370.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 59.17 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2600	U
107131	Acrylonitrile	2600	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	2000	U
108203	Di-isopropyl ether	1300	U
	Dichlorodifluoromethane	2600	U
74-87-3	Chloromethane	650	U
75-01-4	Vinyl Chloride	2000	U
74-83-9	Bromomethane	1300	U
75-00-3	Chloroethane	2000	U
75-69-4	Trichlorofluoromethane	1300	U
75-35-4	1,1-Dichloroethene	650	U
67-64-1	Acetone	1300	U
75-15-0	Carbon Disulfide	650	U
75-09-2	Methylene Chloride	1300	U
156-60-5	trans-1,2-Dichloroethene	1300	U
75-35-3	1,1-Dichloroethane	650	U
108-05-4	Vinyl Acetate	2000	U
78-93-3	2-Butanone	2000	U
	cis-1,2-Dichloroethene	650	U
67-66-3	Chloroform	650	U
75-55-6	1,1,1-Trichloroethane	650	U
56-23-5	Carbon Tetrachloride	1300	U
71-43-2	Benzene	650	U
107-06-2	1,2-Dichloroethane	1300	U
79-01-6	Trichloroethene	650	U
78-87-5	1,2-Dichloropropane	650	U
75-27-4	Bromodichloromethane	650	U
110-75-8	2-Chloroethyl vinyl ether	1300	U
10061-01-5	cis-1,3-Dichloropropene	650	U
108-10-1	4-Methyl-2-Pentanone	1300	U
108-88-3	Toluene	650	U
10061-02-6	trans-1,3-Dichloropropene	1300	U
79-00-5	1,1,2-Trichloroethane	1300	U
127-18-4	Tetrachloroethene	650	U
591-78-6	2-Hexanone	1300	U
126-48-1	Dibromochloromethane	1300	U
108-90-7	Chlorobenzene	650	U
100-41-4	Ethylbenzene	1300	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. **B-5**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.10

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03370.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 59.17 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	2000	U
1330-20-7	o-Xylene	1300	U
100-42-5	Styrene	1300	U
75-25-2	Bromoform	1300	U
79-34-5	1,1,2,2-Tetrachloroethane	1300	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-5

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.10

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03370.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 59.17 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	7.60	4100	J

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-6

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.12

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03371.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 15.61 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1200	U
107131	Acrylonitrile	1200	U
75650	tert-Butyl alcohol	1700	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-6

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.12

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03371.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 15.61 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-6

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.12

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03371.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 15.61 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-7

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.14

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03372.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 39.7 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2400	U
1634044	Methyl-tert-Butyl ether	1200	U
108203	Di-isopropyl ether	800	U
	Dichlorodifluoromethane	1600	U
74-87-3	Chloromethane	400	U
75-01-4	Vinyl Chloride	1200	U
74-83-9	Bromomethane	800	U
75-00-3	Chloroethane	1200	U
75-69-4	Trichlorofluoromethane	800	U
75-35-4	1,1-Dichloroethene	400	U
67-64-1	Acetone	800	U
75-15-0	Carbon Disulfide	400	U
75-09-2	Methylene Chloride	800	U
156-60-5	trans-1,2-Dichloroethene	800	U
75-35-3	1,1-Dichloroethane	400	U
108-05-4	Vinyl Acetate	1200	U
78-93-3	2-Butanone	1200	U
	cis-1,2-Dichloroethene	400	U
67-66-3	Chloroform	400	U
75-55-6	1,1,1-Trichloroethane	400	U
56-23-5	Carbon Tetrachloride	800	U
71-43-2	Benzene	400	U
107-06-2	1,2-Dichloroethane	800	U
79-01-6	Trichloroethene	400	U
78-87-5	1,2-Dichloropropane	400	U
75-27-4	Bromodichloromethane	400	U
110-75-8	2-Chloroethyl vinyl ether	800	U
10061-01-5	cis-1,3-Dichloropropene	400	U
108-10-1	4-Methyl-2-Pentanone	800	U
108-88-3	Toluene	400	U
10061-02-6	trans-1,3-Dichloropropene	800	U
79-00-5	1,1,2-Trichloroethane	800	U
127-18-4	Tetrachloroethene	400	U
591-78-6	2-Hexanone	800	U
126-48-1	Dibromochloromethane	800	U
108-90-7	Chlorobenzene	400	U
100-41-4	Ethylbenzene	800	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-7

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.14

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03372.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 39.7 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1200	U
1330-20-7	o-Xylene	800	U
100-42-5	Styrene	800	U
75-25-2	Bromoform	800	U
79-34-5	1,1,2,2-Tetrachloroethane	800	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-7

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.14

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03372.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 39.7 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-8

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.16

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03373.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 21.68 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1200	U
107131	Acrylonitrile	1200	U
75650	tert-Butyl alcohol	1800	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-8

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.16

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03373.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 21.68 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-8

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.16

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03373.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 21.68 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-9

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.18

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03374.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 20.88 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1200	U
107131	Acrylonitrile	1200	U
75650	tert-Butyl alcohol	1800	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	610	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. **B-9**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.18

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03374.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 20.88 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-9

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.18

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03374.D

Level: (low/med) MED Date Received: 03/19/98

% Moisture: not dec. 20.88 Date Analyzed: 03/27/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-10**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03417.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 28.67 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2500	U
107131	Acrylonitrile	2500	U
75650	tert-Butyl alcohol	4600	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	700	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	700	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	700	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	700	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	700	U
156-60-5	trans-1,2-Dichloroethene	700	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	700	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	700	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	700	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	700	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	700	U
79-00-5	1,1,2-Trichloroethane	700	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	700	U
126-48-1	Dibromochloromethane	700	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	700	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

B-10

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03417.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 28.67 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	700	U
100-42-5	Styrene	700	U
75-25-2	Bromoform	700	U
79-34-5	1,1,2,2-Tetrachloroethane	700	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-10**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03417.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 28.67 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-11**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.05

Sample wt/vol: 11.8 (g/ml) G Lab File ID: V03418.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 6.34 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2900	U
1634044	Methyl-tert-Butyl ether	680	U
108203	Di-isopropyl ether	450	U
	Dichlorodifluoromethane	900	U
74-87-3	Chloromethane	230	U
75-01-4	Vinyl Chloride	680	U
74-83-9	Bromomethane	450	U
75-00-3	Chloroethane	680	U
75-69-4	Trichlorofluoromethane	450	U
75-35-4	1,1-Dichloroethene	230	U
67-64-1	Acetone	450	U
75-15-0	Carbon Disulfide	230	U
75-09-2	Methylene Chloride	450	U
156-60-5	trans-1,2-Dichloroethene	450	U
75-35-3	1,1-Dichloroethane	230	U
108-05-4	Vinyl Acetate	680	U
78-93-3	2-Butanone	680	U
	cis-1,2-Dichloroethene	230	U
67-66-3	Chloroform	230	U
75-55-6	1,1,1-Trichloroethane	230	U
56-23-5	Carbon Tetrachloride	450	U
71-43-2	Benzene	230	U
107-06-2	1,2-Dichloroethane	450	U
79-01-6	Trichloroethene	230	U
78-87-5	1,2-Dichloropropane	230	U
75-27-4	Bromodichloromethane	230	U
110-75-8	2-Chloroethyl vinyl ether	450	U
10061-01-5	cis-1,3-Dichloropropene	230	U
108-10-1	4-Methyl-2-Pentanone	450	U
108-88-3	Toluene	230	U
10061-02-6	trans-1,3-Dichloropropene	450	U
79-00-5	1,1,2-Trichloroethane	450	U
127-18-4	Tetrachloroethene	230	U
591-78-6	2-Hexanone	450	U
126-48-1	Dibromochloromethane	450	U
108-90-7	Chlorobenzene	230	U
100-41-4	Ethylbenzene	450	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

B-11

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.05

Sample wt/vol: 11.8 (g/ml) G Lab File ID: V03418.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 6.34 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	680	U
1330-20-7	o-Xylene	450	U
100-42-5	Styrene	450	U
75-25-2	Bromoform	450	U
79-34-5	1,1,2,2-Tetrachloroethane	450	U
541-73-1	1,3-Dichlorobenzene	680	U
106-46-7	1,4-Dichlorobenzene	680	U
95-50-1	1,2-Dichlorobenzene	680	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-11

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.05

Sample wt/vol: 11.8 (g/ml) G Lab File ID: V03418.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 6.34 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-12

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03419.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.53 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	560	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-12**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03419.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.53 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U
541-73-1	1,3-Dichlorobenzene	830	U
106-46-7	1,4-Dichlorobenzene	830	U
95-50-1	1,2-Dichlorobenzene	830	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-12**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03419.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.53 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-13

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.09

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03420.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 30.89 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4400	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	680	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	340	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	680	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	680	U
75-35-4	1,1-Dichloroethene	340	U
67-64-1	Acetone	680	U
75-15-0	Carbon Disulfide	340	U
75-09-2	Methylene Chloride	680	U
156-60-5	trans-1,2-Dichloroethene	680	U
75-35-3	1,1-Dichloroethane	340	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	340	U
67-66-3	Chloroform	340	U
75-55-6	1,1,1-Trichloroethane	340	U
56-23-5	Carbon Tetrachloride	680	U
71-43-2	Benzene	340	U
107-06-2	1,2-Dichloroethane	680	U
79-01-6	Trichloroethene	340	U
78-87-5	1,2-Dichloropropane	340	U
75-27-4	Bromodichloromethane	340	U
110-75-8	2-Chloroethyl vinyl ether	680	U
10061-01-5	cis-1,3-Dichloropropene	340	U
108-10-1	4-Methyl-2-Pentanone	680	U
108-88-3	Toluene	340	U
10061-02-6	trans-1,3-Dichloropropene	680	U
79-00-5	1,1,2-Trichloroethane	680	U
127-18-4	Tetrachloroethene	340	U
591-78-6	2-Hexanone	680	U
126-48-1	Dibromochloromethane	680	U
108-90-7	Chlorobenzene	340	U
100-41-4	Ethylbenzene	680	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

B-13

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.09

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03420.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 30.89 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	680	U
100-42-5	Styrene	680	U
75-25-2	Bromoform	680	U
79-34-5	1,1,2,2-Tetrachloroethane	680	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-13

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.09

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03420.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 30.89 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

B-14

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.11

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03421.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.97 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3400	U
1634044	Methyl-tert-Butyl ether	790	U
108203	Di-isopropyl ether	530	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	790	U
74-83-9	Bromomethane	530	U
75-00-3	Chloroethane	790	U
75-69-4	Trichlorofluoromethane	530	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	530	U
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	530	U
156-60-5	trans-1,2-Dichloroethene	530	U
75-35-3	1,1-Dichloroethane	260	U
108-05-4	Vinyl Acetate	790	U
78-93-3	2-Butanone	790	U
	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
75-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	530	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	530	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
110-75-8	2-Chloroethyl vinyl ether	530	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-Pentanone	530	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	530	U
79-00-5	1,1,2-Trichloroethane	530	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	530	U
126-48-1	Dibromochloromethane	530	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	530	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-14

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.11

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03421.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.97 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	790	U
1330-20-7	o-Xylene	530	U
100-42-5	Styrene	530	U
75-25-2	Bromoform	530	U
79-34-5	1,1,2,2-Tetrachloroethane	530	U
541-73-1	1,3-Dichlorobenzene	790	U
106-46-7	1,4-Dichlorobenzene	790	U
95-50-1	1,2-Dichlorobenzene	790	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-14

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.11

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03421.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 13.97 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-15

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.13

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V03422.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 56.71 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	3600	U
107131	Acrylonitrile	3600	U
75650	tert-Butyl alcohol	6700	U
1634044	Methyl-tert-Butyl ether	1600	U
108203	Di-isopropyl ether	1000	U
	Dichlorodifluoromethane	2100	U
74-87-3	Chloromethane	520	U
75-01-4	Vinyl Chloride	1600	U
74-83-9	Bromomethane	1000	U
75-00-3	Chloroethane	1600	U
75-69-4	Trichlorofluoromethane	1000	U
75-35-4	1,1-Dichloroethene	520	U
67-64-1	Acetone	1000	U
75-15-0	Carbon Disulfide	520	U
75-09-2	Methylene Chloride	1000	U
156-60-5	trans-1,2-Dichloroethene	1000	U
75-35-3	1,1-Dichloroethane	520	U
108-05-4	Vinyl Acetate	1600	U
78-93-3	2-Butanone	1600	U
	cis-1,2-Dichloroethene	520	U
67-66-3	Chloroform	520	U
75-55-6	1,1,1-Trichloroethane	520	U
56-23-5	Carbon Tetrachloride	1000	U
71-43-2	Benzene	520	U
107-06-2	1,2-Dichloroethane	1000	U
79-01-6	Trichloroethene	520	U
78-87-5	1,2-Dichloropropane	520	U
75-27-4	Bromodichloromethane	520	U
110-75-8	2-Chloroethyl vinyl ether	1000	U
10061-01-5	cis-1,3-Dichloropropene	520	U
108-10-1	4-Methyl-2-Pentanone	1000	U
108-88-3	Toluene	520	U
10061-02-6	trans-1,3-Dichloropropene	1000	U
79-00-5	1,1,2-Trichloroethane	1000	U
127-18-4	Tetrachloroethene	520	U
591-78-6	2-Hexanone	1000	U
126-48-1	Dibromochloromethane	1000	U
108-90-7	Chlorobenzene	520	U
100-41-4	Ethylbenzene	1000	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-15**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.13

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V03422.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 56.71 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1600	U
1330-20-7	o-Xylene	1000	U
100-42-5	Styrene	1000	U
75-25-2	Bromoform	1000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	U
541-73-1	1,3-Dichlorobenzene	1600	U
106-46-7	1,4-Dichlorobenzene	1600	U
95-50-1	1,2-Dichlorobenzene	1600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-15**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.13

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V03422.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 56.71 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	7.62	7800	J

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-16

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03423.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 25.48 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-16**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03423.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 25.48 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U
541-73-1	1,3-Dichlorobenzene	930	U
106-46-7	1,4-Dichlorobenzene	930	U
95-50-1	1,2-Dichlorobenzene	930	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-16**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03423.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 25.48 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-17

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.17

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03424.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 40.51 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2900	U
107131	Acrylonitrile	2900	U
75650	tert-Butyl alcohol	5400	U
1634044	Methyl-tert-Butyl ether	1200	U
108203	Di-isopropyl ether	830	U
	Dichlorodifluoromethane	1700	U
74-87-3	Chloromethane	410	U
75-01-4	Vinyl Chloride	1200	U
74-83-9	Bromomethane	830	U
75-00-3	Chloroethane	1200	U
75-69-4	Trichlorofluoromethane	830	U
75-35-4	1,1-Dichloroethene	410	U
67-64-1	Acetone	830	U
75-15-0	Carbon Disulfide	410	U
75-09-2	Methylene Chloride	830	U
156-60-5	trans-1,2-Dichloroethene	830	U
75-35-3	1,1-Dichloroethane	410	U
108-05-4	Vinyl Acetate	1200	U
78-93-3	2-Butanone	1200	U
	cis-1,2-Dichloroethene	410	U
67-66-3	Chloroform	410	U
75-55-6	1,1,1-Trichloroethane	410	U
56-23-5	Carbon Tetrachloride	830	U
71-43-2	Benzene	410	U
107-06-2	1,2-Dichloroethane	830	U
79-01-6	Trichloroethene	410	U
78-87-5	1,2-Dichloropropane	410	U
75-27-4	Bromodichloromethane	410	U
110-75-8	2-Chloroethyl vinyl ether	830	U
10061-01-5	cis-1,3-Dichloropropene	410	U
108-10-1	4-Methyl-2-Pentanone	830	U
108-88-3	Toluene	410	U
10061-02-6	trans-1,3-Dichloropropene	830	U
79-00-5	1,1,2-Trichloroethane	830	U
127-18-4	Tetrachloroethene	410	U
591-78-6	2-Hexanone	830	U
126-48-1	Dibromochloromethane	830	U
108-90-7	Chlorobenzene	410	U
100-41-4	Ethylbenzene	830	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-17

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.17

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03424.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 40.51 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1200	U
1330-20-7	o-Xylene	830	U
100-42-5	Styrene	830	U
75-25-2	Bromoform	830	U
79-34-5	1,1,2,2-Tetrachloroethane	830	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-17**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.17

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03424.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 40.51 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000075-05-8	Acetonitrile	12.17	6600	JN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-18

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.19

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03425.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 17.46 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

B-18

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.19

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03425.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 17.46 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U
541-73-1	1,3-Dichlorobenzene	860	U
106-46-7	1,4-Dichlorobenzene	860	U
95-50-1	1,2-Dichlorobenzene	860	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-18**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.19

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03425.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 17.46 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-19

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03426.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 23.69 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-19**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03426.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 23.69 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U
541-73-1	1,3-Dichlorobenzene	930	U
106-46-7	1,4-Dichlorobenzene	930	U
95-50-1	1,2-Dichlorobenzene	930	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-19**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3424 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03426.D

Level: (low/med) MED Date Received: 03/20/98

% Moisture: not dec. 23.69 Date Analyzed: 04/01/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-20

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03450.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.32 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1900	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-20

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03450.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.32 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-20**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03450.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.32 Date Analyzed: 04/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000593-75-9	Methane, isocyano-	12.10	32000	JN

000382

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-21

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03451.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 45.98 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2900	U
1634044	Methyl-tert-Butyl ether	1300	U
108203	Di-isopropyl ether	890	U
	Dichlorodifluoromethane	1800	U
74-87-3	Chloromethane	450	U
75-01-4	Vinyl Chloride	1300	U
74-83-9	Bromomethane	890	U
75-00-3	Chloroethane	1300	U
75-69-4	Trichlorofluoromethane	890	U
75-35-4	1,1-Dichloroethene	450	U
67-64-1	Acetone	890	U
75-15-0	Carbon Disulfide	450	U
75-09-2	Methylene Chloride	890	U
156-60-5	trans-1,2-Dichloroethene	890	U
75-35-3	1,1-Dichloroethane	450	U
108-05-4	Vinyl Acetate	1300	U
78-93-3	2-Butanone	1300	U
	cis-1,2-Dichloroethene	450	U
67-66-3	Chloroform	450	U
75-55-6	1,1,1-Trichloroethane	450	U
56-23-5	Carbon Tetrachloride	890	U
71-43-2	Benzene	450	U
107-06-2	1,2-Dichloroethane	890	U
79-01-6	Trichloroethene	450	U
78-87-5	1,2-Dichloropropane	450	U
75-27-4	Bromodichloromethane	450	U
110-75-8	2-Chloroethyl vinyl ether	890	U
10061-01-5	cis-1,3-Dichloropropene	450	U
108-10-1	4-Methyl-2-Pentanone	890	U
108-88-3	Toluene	450	U
10061-02-6	trans-1,3-Dichloropropene	890	U
79-00-5	1,1,2-Trichloroethane	890	U
127-18-4	Tetrachloroethene	450	U
591-78-6	2-Hexanone	890	U
126-48-1	Dibromochloromethane	890	U
108-90-7	Chlorobenzene	450	U
100-41-4	Ethylbenzene	890	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-21

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03451.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 45.98 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1300	U
1330-20-7	o-Xylene	890	U
100-42-5	Styrene	890	U
75-25-2	Bromoform	890	U
79-34-5	1,1,2,2-Tetrachloroethane	890	U

000384

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-21**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.05

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03451.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 45.98 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-22

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.07

Sample wt/vol: 9.2 (g/ml) G Lab File ID: V03452.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 12.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1100	U
107131	Acrylonitrile	1100	U
75650	tert-Butyl alcohol	2000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-22**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.07

Sample wt/vol: 9.2 (g/ml) G Lab File ID: V03452.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 12.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-22**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.07

Sample wt/vol: 9.2 (g/ml) G Lab File ID: V03452.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 12.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-23

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.09

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03453.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.94 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	950	U
107131	Acrylonitrile	950	U
75650	tert-Butyl alcohol	1800	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-23**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.09

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03453.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.94 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-23**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.09

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03453.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.94 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-24**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.11

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03454.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.93 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1100	U
107131	Acrylonitrile	1100	U
75650	tert-Butyl alcohol	2100	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	650	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	650	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	650	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	650	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	650	U
156-60-5	trans-1,2-Dichloroethene	650	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	650	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	650	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	650	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	650	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	650	U
79-00-5	1,1,2-Trichloroethane	650	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	650	U
126-48-1	Dibromochloromethane	650	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	650	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-24**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.11

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03454.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.93 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	650	U
100-42-5	Styrene	650	U
75-25-2	Bromoform	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-24

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.11

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V03454.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 18.93 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-25

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03455.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.91 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	950	U
107131	Acrylonitrile	950	U
75650	tert-Butyl alcohol	1800	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-25**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03455.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.91 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-25**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03455.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 11.91 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-26**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: V03456.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.9 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1100	U
107131	Acrylonitrile	1100	U
75650	tert-Butyl alcohol	2000	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

000398

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-26**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: V03456.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.9 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-26**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: V03456.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.9 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: B-27

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03457.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 19.16 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1100	U
107131	Acrylonitrile	1100	U
75650	tert-Butyl alcohol	2100	U
1634044	Methyl-tert-Butyl ether	970	U
108203	Di-isopropyl ether	650	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	970	U
74-83-9	Bromomethane	650	U
75-00-3	Chloroethane	970	U
75-69-4	Trichlorofluoromethane	650	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	650	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	650	U
156-60-5	trans-1,2-Dichloroethene	650	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	970	U
78-93-3	2-Butanone	970	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	650	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	650	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	650	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	650	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	650	U
79-00-5	1,1,2-Trichloroethane	650	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	650	U
126-48-1	Dibromochloromethane	650	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	650	U

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-27

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03457.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 19.16 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	970	U
1330-20-7	o-Xylene	650	U
100-42-5	Styrene	650	U
75-25-2	Bromoform	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-27

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03457.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 19.16 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-28**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.19

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03458.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 15.67 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	940	U
107131	Acrylonitrile	940	U
75650	tert-Butyl alcohol	1800	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-28**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.19

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03458.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 15.67 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-28**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.19

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03458.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 15.67 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-29**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.21

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03459.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 16.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

060407

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-29**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.21

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03459.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 16.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

B-29

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.21

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03459.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 16.79 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-30

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.23

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03460.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.37 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1000	U
107131	Acrylonitrile	1000	U
75650	tert-Butyl alcohol	1900	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID: **B-30**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.23

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03460.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.37 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **B-30**

Lab Name: FMETL Project 980211

NJDEP # 13461 Case No.: 3425 Location M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.23

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03460.D

Level: (low/med) MED Date Received: 03/23/98

% Moisture: not dec. 17.37 Date Analyzed: 04/04/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-31

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03469.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.48 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-31

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03469.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.48 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-31

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03469.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.48 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

000415

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-32

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03470.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.17 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-32

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03470.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.17 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-32

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03470.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.17 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-33

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03471.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 9.19 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-33

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03471.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 9.19 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-33

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V03471.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 9.19 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-34

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03472.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.06 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-34

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03472.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.06 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **B-34**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03472.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 12.06 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-35

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.11

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03473.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 16.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	560	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-35

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.11

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03473.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 16.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-35

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.11

Sample wt/vol: 10.8 (g/ml) G Lab File ID: V03473.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 16.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-36

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.13

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03474.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 10.13 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3300	U
1634044	Methyl-tert-Butyl ether	760	U
108203	Di-isopropyl ether	510	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	760	U
74-83-9	Bromomethane	510	U
75-00-3	Chloroethane	760	U
75-69-4	Trichlorofluoromethane	510	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	510	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	510	U
156-60-5	trans-1,2-Dichloroethene	510	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	760	U
78-93-3	2-Butanone	760	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	510	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	510	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	510	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	510	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	510	U
79-00-5	1,1,2-Trichloroethane	510	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	510	U
126-48-1	Dibromochloromethane	510	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	510	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-36

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.13

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03474.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 10.13 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	760	U
1330-20-7	o-Xylene	510	U
100-42-5	Styrene	510	U
75-25-2	Bromoform	510	U
79-34-5	1,1,2,2-Tetrachloroethane	510	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-36

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.13

Sample wt/vol: 11.0 (g/ml) G Lab File ID: V03474.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 10.13 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-37

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.15

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03475.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 11.75 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-37

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.15

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03475.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 11.75 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-37

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.15

Sample wt/vol: 10.4 (g/ml) G Lab File ID: V03475.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 11.75 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-38

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03476.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.31 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-38

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03476.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.31 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **B-38**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03476.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.31 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-39

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.19

Sample wt/vol: 8.0 (g/ml) G Lab File ID: V03477.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 20.79 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2800	U
107131	Acrylonitrile	2800	U
75650	tert-Butyl alcohol	5100	U
1634044	Methyl-tert-Butyl ether	1200	U
108203	Di-isopropyl ether	790	U
	Dichlorodifluoromethane	1600	U
74-87-3	Chloromethane	400	U
75-01-4	Vinyl Chloride	1200	U
74-83-9	Bromomethane	790	U
75-00-3	Chloroethane	1200	U
75-69-4	Trichlorofluoromethane	790	U
75-35-4	1,1-Dichloroethene	400	U
67-64-1	Acetone	790	U
75-15-0	Carbon Disulfide	400	U
75-09-2	Methylene Chloride	790	U
156-60-5	trans-1,2-Dichloroethene	790	U
75-35-3	1,1-Dichloroethane	400	U
108-05-4	Vinyl Acetate	1200	U
78-93-3	2-Butanone	1200	U
	cis-1,2-Dichloroethene	400	U
67-66-3	Chloroform	400	U
75-55-6	1,1,1-Trichloroethane	400	U
56-23-5	Carbon Tetrachloride	790	U
71-43-2	Benzene	400	U
107-06-2	1,2-Dichloroethane	790	U
79-01-6	Trichloroethene	400	U
78-87-5	1,2-Dichloropropane	400	U
75-27-4	Bromodichloromethane	400	U
110-75-8	2-Chloroethyl vinyl ether	790	U
10061-01-5	cis-1,3-Dichloropropene	400	U
108-10-1	4-Methyl-2-Pentanone	790	U
108-88-3	Toluene	400	U
10061-02-6	trans-1,3-Dichloropropene	790	U
79-00-5	1,1,2-Trichloroethane	790	U
127-18-4	Tetrachloroethene	400	U
591-78-6	2-Hexanone	790	U
126-48-1	Dibromochloromethane	790	U
108-90-7	Chlorobenzene	400	U
100-41-4	Ethylbenzene	790	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-39

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.19

Sample wt/vol: 8.0 (g/ml) G Lab File ID: V03477.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 20.79 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1200	U
1330-20-7	o-Xylene	790	U
100-42-5	Styrene	790	U
75-25-2	Bromoform	790	U
79-34-5	1,1,2,2-Tetrachloroethane	790	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-39

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.19

Sample wt/vol: 8.0 (g/ml) G Lab File ID: V03477.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 20.79 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03478.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03478.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-40

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.21

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03478.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 13.47 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

000442

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-41

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03479.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.77 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-41

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03479.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.77 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-41

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: V03479.D

Level: (low/med) MED Date Received: 03/24/98

% Moisture: not dec. 14.77 Date Analyzed: 04/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-42

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03488.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.43 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	590	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-42

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03488.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.43 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-42

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.03

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03488.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.43 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-43

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.05

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03489.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.21 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	610	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-43

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.05

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03489.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.21 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-43

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.05

Sample wt/vol: 10.2 (g/ml) G Lab File ID: V03489.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 20.21 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-44

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.07

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03490.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 12.89 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-44

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.07

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03490.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 12.89 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-44

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.07

Sample wt/vol: 10.6 (g/ml) G Lab File ID: V03490.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 12.89 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-45

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.09

Sample wt/vol: 8.2 (g/ml) G Lab File ID: V03491.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.66 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	970	U
108203	Di-isopropyl ether	650	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	970	U
74-83-9	Bromomethane	650	U
75-00-3	Chloroethane	970	U
75-69-4	Trichlorofluoromethane	650	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	650	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	650	U
156-60-5	trans-1,2-Dichloroethene	650	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	970	U
78-93-3	2-Butanone	970	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	650	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	650	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	650	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	650	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	650	U
79-00-5	1,1,2-Trichloroethane	650	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	650	U
126-48-1	Dibromochloromethane	650	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	650	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-45

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.09

Sample wt/vol: 8.2 (g/ml) G Lab File ID: V03491.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.66 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	970	U
1330-20-7	o-Xylene	650	U
100-42-5	Styrene	650	U
75-25-2	Bromoform	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-45

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.09

Sample wt/vol: 8.2 (g/ml) G Lab File ID: V03491.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.66 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown	30.49	4000	J

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03492.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.99 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3300	U
1634044	Methyl-tert-Butyl ether	760	U
108203	Di-isopropyl ether	510	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	760	U
74-83-9	Bromomethane	510	U
75-00-3	Chloroethane	760	U
75-69-4	Trichlorofluoromethane	510	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	510	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	510	U
156-60-5	trans-1,2-Dichloroethene	510	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	760	U
78-93-3	2-Butanone	760	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	510	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	510	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	510	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	510	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	510	U
79-00-5	1,1,2-Trichloroethane	510	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	510	U
126-48-1	Dibromochloromethane	510	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	510	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03492.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.99 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	760	U
1330-20-7	o-Xylene	510	U
100-42-5	Styrene	510	U
75-25-2	Bromoform	510	U
79-34-5	1,1,2,2-Tetrachloroethane	510	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-46

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V03492.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 5.99 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-47

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.13

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V03493.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 14.26 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	960	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	960	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	960	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	640	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	640	U
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	960	U
78-93-3	2-Butanone	960	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	640	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-47

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.13

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V03493.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 14.26 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	960	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-47

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.13

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V03493.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 14.26 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-48

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.15

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03494.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.52 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-48

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.15

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03494.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.52 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-48

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.15

Sample wt/vol: 10.7 (g/ml) G Lab File ID: V03494.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.52 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-49

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03495.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 10.75 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-49

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03495.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 10.75 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-49

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: V03495.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 10.75 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-50

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.19

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03496.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 24 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-50

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.19

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03496.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 24 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-50

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.19

Sample wt/vol: 10.9 (g/ml) G Lab File ID: V03496.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 24 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-51

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.21

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03497.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.46 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-51

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.21

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03497.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.46 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-51

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.21

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V03497.D

Level: (low/med) MED Date Received: 03/25/98

% Moisture: not dec. 17.46 Date Analyzed: 04/07/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

52

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004183.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 16.38 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 52

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004183.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 16.38 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 52

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004183.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 16.38 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 53

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.05

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004184.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 8.49 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3400	U
1634044	Methyl-tert-Butyl ether	780	U
108203	Di-isopropyl ether	520	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	780	U
74-83-9	Bromomethane	520	U
75-00-3	Chloroethane	780	U
75-69-4	Trichlorofluoromethane	520	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	520	U
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	520	U
156-60-5	trans-1,2-Dichloroethene	520	U
75-35-3	1,1-Dichloroethane	260	U
108-05-4	Vinyl Acetate	780	U
78-93-3	2-Butanone	780	U
	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
75-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	520	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	520	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
110-75-8	2-Chloroethyl vinyl ether	520	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-Pentanone	520	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	520	U
79-00-5	1,1,2-Trichloroethane	520	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	520	U
126-48-1	Dibromochloromethane	520	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	520	U

1A

FIELD ID: 53

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.05

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004184.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 8.49 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	780	U
1330-20-7	o-Xylene	520	U
100-42-5	Styrene	520	U
75-25-2	Bromoform	520	U
79-34-5	1,1,2,2-Tetrachloroethane	520	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 53

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.05

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004184.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 8.49 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 54

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.07

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004185.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 13.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID: 54

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.07

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004185.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 13.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 54

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.07

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004185.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 13.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 55

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.09

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004186.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 29.33 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2500	U
107131	Acrylonitrile	2500	U
75650	tert-Butyl alcohol	4600	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	700	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	700	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	700	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	700	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	700	U
156-60-5	trans-1,2-Dichloroethene	700	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	700	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	700	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	700	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	700	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	700	U
79-00-5	1,1,2-Trichloroethane	700	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	700	U
126-48-1	Dibromochloromethane	700	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	700	U

1A

FIELD ID: 55

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.09

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004186.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 29.33 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	700	U
100-42-5	Styrene	700	U
75-25-2	Bromoform	700	U
79-34-5	1,1,2,2-Tetrachloroethane	700	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 55

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.09

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004186.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 29.33 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 56

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004187.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.55 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID: 56

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004187.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.55 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 56

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004187.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.55 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 57

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.13

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004188.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 19.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	940	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	940	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	940	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	940	U
78-93-3	2-Butanone	940	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID: 57

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.13

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004188.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 19.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	940	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 57

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.13

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004188.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 19.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 58

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.15

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004189.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 10.85 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID: 58

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.15

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004189.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 10.85 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 58

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.15

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004189.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 10.85 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 59

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004190.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 5.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	560	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

59

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004190.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 5.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 59

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.17

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004190.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 5.78 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 60

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.19

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004191.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 22.65 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4300	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	660	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	660	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	660	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	660	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	660	U
156-60-5	trans-1,2-Dichloroethene	660	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	660	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	660	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	660	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	660	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	660	U
79-00-5	1,1,2-Trichloroethane	660	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	660	U
126-48-1	Dibromochloromethane	660	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	660	U

1A

FIELD ID: 60

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.19

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004191.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 22.65 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	660	U
100-42-5	Styrene	660	U
75-25-2	Bromoform	660	U
79-34-5	1,1,2,2-Tetrachloroethane	660	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 60

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.19

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004191.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 22.65 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 61

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004192.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID: 61

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004192.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 61

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004192.D

Level: (low/med) MED Date Received: 8/26/99

% Moisture: not dec. 15.07 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 63

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004196.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 13.69 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID: 63

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004196.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 13.69 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 63

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004196.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 13.69 Date Analyzed: 9/1/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 64

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004207.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.91 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	950	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	950	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	950	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	640	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	640	U
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	950	U
78-93-3	2-Butanone	950	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	640	U

1A

FIELD ID: 64

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004207.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.91 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	950	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 64

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.05

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004207.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.91 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 65

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004208.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 20 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID: 65

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004208.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 20 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 65

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004208.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 20 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 66

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.09

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004209.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.38 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	940	U
108203	Di-isopropyl ether	630	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	940	U
74-83-9	Bromomethane	630	U
75-00-3	Chloroethane	940	U
75-69-4	Trichlorofluoromethane	630	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	630	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	630	U
156-60-5	trans-1,2-Dichloroethene	630	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	940	U
78-93-3	2-Butanone	940	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	630	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	630	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	630	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	630	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	630	U
79-00-5	1,1,2-Trichloroethane	630	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	630	U
126-48-1	Dibromochloromethane	630	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	630	U

1A

FIELD ID: 66

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.09

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004209.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.38 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	940	U
1330-20-7	o-Xylene	630	U
100-42-5	Styrene	630	U
75-25-2	Bromoform	630	U
79-34-5	1,1,2,2-Tetrachloroethane	630	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 66

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.09

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004209.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.38 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 67

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004210.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.47 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID: 67

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004210.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.47 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 67

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.11

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004210.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.47 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 68

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004211.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.79 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

68

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004211.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.79 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 68

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.13

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004211.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 17.79 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 69

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004212.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.33 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID: 69

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004212.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.33 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 69

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB004212.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.33 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

70

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004213.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 14.41 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

70

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004213.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 14.41 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **70**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004213.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 14.41 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 71

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.19

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004214.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.53 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 71

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.19

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004214.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.53 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 71

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.19

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004214.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 12.53 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 72

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.21

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VB004215.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 10.61 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

72

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.21

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VB004215.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 10.61 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 72

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.21

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VB004215.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 10.61 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 73

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.23

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB004216.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 11.75 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	920	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	920	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	920	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	920	U
78-93-3	2-Butanone	920	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

73

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.23

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB004216.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 11.75 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	920	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 73

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.23

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB004216.D

Level: (low/med) MED Date Received: 8/27/99

% Moisture: not dec. 11.75 Date Analyzed: 9/2/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

74

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000742.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	950	U
108203	Di-isopropyl ether	630	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	950	U
74-83-9	Bromomethane	630	U
75-00-3	Chloroethane	950	U
75-69-4	Trichlorofluoromethane	630	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	630	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	630	U
156-60-5	trans-1,2-Dichloroethene	630	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	950	U
78-93-3	2-Butanone	950	U
	cis-1,2-Dichloroethene	1100	
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	630	U
71-43-2	Benzene	1300	
107-06-2	1,2-Dichloroethane	630	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	630	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	630	U
108-88-3	Toluene	680	
10061-02-6	trans-1,3-Dichloropropene	630	U
79-00-5	1,1,2-Trichloroethane	630	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	630	U
126-48-1	Dibromochloromethane	630	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	880	

000539

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

74

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000742.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	740	J
1330-20-7	o-Xylene	510	J
100-42-5	Styrene	630	U
75-25-2	Bromoform	630	U
79-34-5	1,1,2,2-Tetrachloroethane	630	U

001540

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 74

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000742.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 9

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000111-65-9	Octane	23.11	2200	JN
2.	unknown	25.64	2000	J
3.	unknown	25.96	2700	J
4. 000111-84-2	Nonane	26.98	4400	JN
5.	unknown	28.54	2400	J
6.	unknown	29.01	8100	J
7.	unknown	30.07	2500	J
8.	unknown	30.45	4600	J
9.	unknown	31.11	2100	J

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

75

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000743.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

75

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000743.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

75

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000743.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 16.27 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

76

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4760.07

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC000744.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.62 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4500	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	700	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	700	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	700	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	700	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	700	U
156-60-5	trans-1,2-Dichloroethene	700	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	700	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	700	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	700	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	700	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	700	U
79-00-5	1,1,2-Trichloroethane	700	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	700	U
126-48-1	Dibromochloromethane	700	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	700	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

76

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.07

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC000744.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.62 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	700	U
100-42-5	Styrene	700	U
75-25-2	Bromoform	700	U
79-34-5	1,1,2,2-Tetrachloroethane	700	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 76

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.07

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC000744.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.62 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

77

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.09

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000745.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 8.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

77

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.09

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000745.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 8.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

77

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.09

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000745.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 8.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

78

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 25.06 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2500	U
107131	Acrylonitrile	2500	U
75650	tert-Butyl alcohol	4700	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	720	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	360	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	720	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	720	U
75-35-4	1,1-Dichloroethene	360	U
67-64-1	Acetone	720	U
75-15-0	Carbon Disulfide	360	U
75-09-2	Methylene Chloride	720	U
156-60-5	trans-1,2-Dichloroethene	720	U
75-35-3	1,1-Dichloroethane	360	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	360	U
67-66-3	Chloroform	360	U
75-55-6	1,1,1-Trichloroethane	360	U
56-23-5	Carbon Tetrachloride	720	U
71-43-2	Benzene	360	U
107-06-2	1,2-Dichloroethane	720	U
79-01-6	Trichloroethene	360	U
78-87-5	1,2-Dichloropropane	360	U
75-27-4	Bromodichloromethane	360	U
110-75-8	2-Chloroethyl vinyl ether	720	U
10061-01-5	cis-1,3-Dichloropropene	360	U
108-10-1	4-Methyl-2-Pentanone	720	U
108-88-3	Toluene	360	U
10061-02-6	trans-1,3-Dichloropropene	720	U
79-00-5	1,1,2-Trichloroethane	720	U
127-18-4	Tetrachloroethene	360	U
591-78-6	2-Hexanone	720	U
126-48-1	Dibromochloromethane	720	U
108-90-7	Chlorobenzene	360	U
100-41-4	Ethylbenzene	720	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

78

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 25.06 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	720	U
100-42-5	Styrene	720	U
75-25-2	Bromoform	720	U
79-34-5	1,1,2,2-Tetrachloroethane	720	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 78

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000746.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 25.06 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

79

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.92 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

79

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.92 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

79

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.92 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 014676-29-0	Heptane, 3-ethyl-2-methyl-	28.53	1800	JN
2.	unknown	30.07	2100	J
3.	unknown	30.66	1900	J
4. 002847-72-5	Decane, 4-methyl-	30.90	3200	JN
5. 001678-93-9	Cyclohexane, butyl-	32.17	3000	JN

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

80

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.15

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000748.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.01 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

80

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.15

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000748.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.01 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **80**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.15

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000748.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.01 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

81

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.17

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000749.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 17.24 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

81

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.17

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000749.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 17.24 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. **81**

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4760.17

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000749.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 17.24 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

82

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000750.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 42.46 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	3000	U
107131	Acrylonitrile	3000	U
75650	tert-Butyl alcohol	5500	U
1634044	Methyl-tert-Butyl ether	1300	U
108203	Di-isopropyl ether	850	U
	Dichlorodifluoromethane	1700	U
74-87-3	Chloromethane	420	U
75-01-4	Vinyl Chloride	1300	U
74-83-9	Bromomethane	850	U
75-00-3	Chloroethane	1300	U
75-69-4	Trichlorofluoromethane	850	U
75-35-4	1,1-Dichloroethene	420	U
67-64-1	Acetone	850	U
75-15-0	Carbon Disulfide	420	U
75-09-2	Methylene Chloride	850	U
156-60-5	trans-1,2-Dichloroethene	850	U
75-35-3	1,1-Dichloroethane	420	U
108-05-4	Vinyl Acetate	1300	U
78-93-3	2-Butanone	1300	U
	cis-1,2-Dichloroethene	420	U
67-66-3	Chloroform	420	U
75-55-6	1,1,1-Trichloroethane	420	U
56-23-5	Carbon Tetrachloride	850	U
71-43-2	Benzene	420	U
107-06-2	1,2-Dichloroethane	850	U
79-01-6	Trichloroethene	420	U
78-87-5	1,2-Dichloropropane	420	U
75-27-4	Bromodichloromethane	420	U
110-75-8	2-Chloroethyl vinyl ether	850	U
10061-01-5	cis-1,3-Dichloropropene	420	U
108-10-1	4-Methyl-2-Pentanone	850	U
108-88-3	Toluene	420	U
10061-02-6	trans-1,3-Dichloropropene	850	U
79-00-5	1,1,2-Trichloroethane	850	U
127-18-4	Tetrachloroethene	420	U
591-78-6	2-Hexanone	850	U
126-48-1	Dibromochloromethane	850	U
108-90-7	Chlorobenzene	420	U
100-41-4	Ethylbenzene	850	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

82

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000750.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 42.46 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	1300	U
1330-20-7	o-Xylene	850	U
100-42-5	Styrene	850	U
75-25-2	Bromoform	850	U
79-34-5	1,1,2,2-Tetrachloroethane	850	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 82

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000750.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 42.46 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

83

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.21

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000751.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.09 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

83

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.21

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000751.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.09 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

83

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.21

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000751.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.09 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

84

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.23

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000752.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.31 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

84

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.23

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000752.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.31 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

84

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.23

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000752.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.31 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

85

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.25

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000753.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

85

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.25

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000753.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 85

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.25

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000753.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 11.25 Date Analyzed: 9/1/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

86

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.27

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000754.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.53 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

86

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.27

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000754.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.53 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 86

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.27

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000754.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 13.53 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

87

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.29

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000755.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.38 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

87

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.29

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000755.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.38 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 87

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.29

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000755.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 14.38 Date Analyzed: 9/2/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

88

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.31

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.82 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4300	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	660	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	660	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	660	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	660	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	660	U
156-60-5	trans-1,2-Dichloroethene	660	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	660	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	660	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	660	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	660	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	660	U
79-00-5	1,1,2-Trichloroethane	660	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	660	U
126-48-1	Dibromochloromethane	660	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	660	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

88

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.31

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.82 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	660	U
100-42-5	Styrene	660	U
75-25-2	Bromoform	660	U
79-34-5	1,1,2,2-Tetrachloroethane	660	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

88

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.31

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000747.D

Level: (low/med) MED Date Received: 8/30/99

% Moisture: not dec. 24.82 Date Analyzed: 9/3/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 89

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.03

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004244.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.18 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 89

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.03

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004244.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.18 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 89

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.03

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004244.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.18 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.24	3100	J

1A

FIELD ID: 90

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.05

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004245.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.02 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	12000	
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

90

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.05

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004245.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.02 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **90**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.05

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB004245.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.02 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

91

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.07

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB004246.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.82 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	11000	
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

FIELD ID: 91

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.07

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB004246.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.82 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 91

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.07

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB004246.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 8.82 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 92

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.09

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004247.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 13.62 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	670	J
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	12000	
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	630	
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID: 92

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.09

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004247.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 13.62 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 92

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.09

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004247.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 13.62 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 93

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.11

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004248.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.32 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	11000	
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID: 93

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.11

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004248.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.32 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 93

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.11

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004248.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.32 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 94

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004249.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 10.05 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

FIELD ID: 94

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004249.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 10.05 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 94

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.13

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VB004249.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 10.05 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 95

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.15

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004250.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.04 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID: 95

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.15

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004250.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.04 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 95

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4762.15

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004250.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.04 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 96

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004251.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 24.2 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	14000	
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID: 96

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004251.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 24.2 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 96

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004251.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 24.2 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 97

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.19

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004252.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 12.88 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID: 97

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.19

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004252.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 12.88 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 97

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.19

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004252.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 12.88 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.37	2000	J

1A

FIELD ID: 98

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004253.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.74 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 98

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004253.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.74 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 98

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.21

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VB004253.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 11.74 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.41	2500	J

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004254.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.61 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	14000	
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 99

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004254.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.61 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 99

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.23

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004254.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 15.61 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 100

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.25

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004255.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.98 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	930	U
108203	Di-isopropyl ether	620	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	930	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	930	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	14000	
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	930	U
78-93-3	2-Butanone	930	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	620	U

1A

FIELD ID: 100

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.25

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004255.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.98 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	930	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 100

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.25

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004255.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.98 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

101

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.27

Sample wt/vol: 8.6 (g/ml) G Lab File ID: VB004256.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 16.41 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4500	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	700	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	700	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	700	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	16000	
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	700	U
156-60-5	trans-1,2-Dichloroethene	700	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	700	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	700	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	700	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	700	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	700	U
79-00-5	1,1,2-Trichloroethane	700	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	700	U
126-48-1	Dibromochloromethane	700	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	700	U

1A

FIELD ID: 101

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.27

Sample wt/vol: 8.6 (g/ml) G Lab File ID: VB004256.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 16.41 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	700	U
100-42-5	Styrene	700	U
75-25-2	Bromoform	700	U
79-34-5	1,1,2,2-Tetrachloroethane	700	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 101

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.27

Sample wt/vol: 8.6 (g/ml) G Lab File ID: VB004256.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 16.41 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 102

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.29

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004257.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.93 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	13000	
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID: 102

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.29

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004257.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.93 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 102

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.29

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004257.D

Level: (low/med) MED Date Received: 8/31/99

% Moisture: not dec. 14.93 Date Analyzed: 9/8/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 103

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.03

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004270.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.93 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

103

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.03

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004270.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.93 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **103**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.03

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004270.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.93 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 104

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004271.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 7.06 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

104

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004271.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 7.06 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 104

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.05

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004271.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 7.06 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 105

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004272.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 9.5 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	800	U
108203	Di-isopropyl ether	530	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	800	U
74-83-9	Bromomethane	530	U
75-00-3	Chloroethane	800	U
75-69-4	Trichlorofluoromethane	530	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	530	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	530	U
156-60-5	trans-1,2-Dichloroethene	530	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	800	U
78-93-3	2-Butanone	800	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	530	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	530	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	530	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	530	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	530	U
79-00-5	1,1,2-Trichloroethane	530	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	530	U
126-48-1	Dibromochloromethane	530	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	530	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

105

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004272.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 9.5 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	800	U
1330-20-7	o-Xylene	530	U
100-42-5	Styrene	530	U
75-25-2	Bromoform	530	U
79-34-5	1,1,2,2-Tetrachloroethane	530	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 105

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.07

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB004272.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 9.5 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

000634

1A

FIELD ID: 106

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004273.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 55.21 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	3700	U
107131	Acrylonitrile	3700	U
75650	tert-Butyl alcohol	6900	U
1634044	Methyl-tert-Butyl ether	1600	U
108203	Di-isopropyl ether	1100	U
	Dichlorodifluoromethane	2100	U
74-87-3	Chloromethane	530	U
75-01-4	Vinyl Chloride	1600	U
74-83-9	Bromomethane	1100	U
75-00-3	Chloroethane	1600	U
75-69-4	Trichlorofluoromethane	1100	U
75-35-4	1,1-Dichloroethene	530	U
67-64-1	Acetone	1100	U
75-15-0	Carbon Disulfide	530	U
75-09-2	Methylene Chloride	1100	U
156-60-5	trans-1,2-Dichloroethene	1100	U
75-35-3	1,1-Dichloroethane	530	U
108-05-4	Vinyl Acetate	1600	U
78-93-3	2-Butanone	1600	U
	cis-1,2-Dichloroethene	530	U
67-66-3	Chloroform	530	U
75-55-6	1,1,1-Trichloroethane	530	U
56-23-5	Carbon Tetrachloride	1100	U
71-43-2	Benzene	530	U
107-06-2	1,2-Dichloroethane	1100	U
79-01-6	Trichloroethene	530	U
78-87-5	1,2-Dichloropropane	530	U
75-27-4	Bromodichloromethane	530	U
110-75-8	2-Chloroethyl vinyl ether	1100	U
10061-01-5	cis-1,3-Dichloropropene	530	U
108-10-1	4-Methyl-2-Pentanone	1100	U
108-88-3	Toluene	530	U
10061-02-6	trans-1,3-Dichloropropene	1100	U
79-00-5	1,1,2-Trichloroethane	1100	U
127-18-4	Tetrachloroethene	530	U
591-78-6	2-Hexanone	1100	U
126-48-1	Dibromochloromethane	1100	U
108-90-7	Chlorobenzene	530	U
100-41-4	Ethylbenzene	1100	U

1A

FIELD ID: 106

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004273.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 55.21 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1600	U
1330-20-7	o-Xylene	1100	U
100-42-5	Styrene	1100	U
75-25-2	Bromoform	1100	U
79-34-5	1,1,2,2-Tetrachloroethane	1100	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 106

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.09

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VB004273.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 55.21 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 107

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.11

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004274.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.44 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID: 107

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.11

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004274.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.44 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 107

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.11

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB004274.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.44 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.38	2100	J

1A

FIELD ID: 108

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.13

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB004275.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.67 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	810	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	810	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	810	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	810	U
78-93-3	2-Butanone	810	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

108

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.13

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB004275.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.67 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	810	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 108

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.13

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB004275.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 12.67 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

109

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: VB004276.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 17.31 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	560	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	560	U
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	560	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

109

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: VB004276.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 17.31 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 109

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.15

Sample wt/vol: 10.9 (g/ml) G Lab File ID: VB004276.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 17.31 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 110

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004277.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 8.4 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3300	U
1634044	Methyl-tert-Butyl ether	770	U
108203	Di-isopropyl ether	510	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	770	U
74-83-9	Bromomethane	510	U
75-00-3	Chloroethane	770	U
75-69-4	Trichlorofluoromethane	510	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	510	U
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	510	U
156-60-5	trans-1,2-Dichloroethene	510	U
75-35-3	1,1-Dichloroethane	260	U
108-05-4	Vinyl Acetate	770	U
78-93-3	2-Butanone	770	U
	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
75-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	510	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	510	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
110-75-8	2-Chloroethyl vinyl ether	510	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-Pentanone	510	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	510	U
79-00-5	1,1,2-Trichloroethane	510	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	510	U
126-48-1	Dibromochloromethane	510	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	510	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

110

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004277.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 8.4 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	770	U
1330-20-7	o-Xylene	510	U
100-42-5	Styrene	510	U
75-25-2	Bromoform	510	U
79-34-5	1,1,2,2-Tetrachloroethane	510	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **110**

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.17

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB004277.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 8.4 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 111

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.19

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VB004278.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 11.71 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID: 111

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.19

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VB004278.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 11.71 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 111

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.19

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VB004278.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 11.71 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.22	3400	J

1A

FIELD ID: 112

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.21

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004279.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 28.92 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2600	U
107131	Acrylonitrile	2600	U
75650	tert-Butyl alcohol	4800	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	740	U
	Dichlorodifluoromethane	1500	U
74-87-3	Chloromethane	370	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	740	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	740	U
75-35-4	1,1-Dichloroethene	370	U
67-64-1	Acetone	740	U
75-15-0	Carbon Disulfide	370	U
75-09-2	Methylene Chloride	1600	
156-60-5	trans-1,2-Dichloroethene	740	U
75-35-3	1,1-Dichloroethane	370	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	370	U
67-66-3	Chloroform	370	U
75-55-6	1,1,1-Trichloroethane	370	U
56-23-5	Carbon Tetrachloride	740	U
71-43-2	Benzene	370	U
107-06-2	1,2-Dichloroethane	740	U
79-01-6	Trichloroethene	370	U
78-87-5	1,2-Dichloropropane	370	U
75-27-4	Bromodichloromethane	370	U
110-75-8	2-Chloroethyl vinyl ether	740	U
10061-01-5	cis-1,3-Dichloropropene	370	U
108-10-1	4-Methyl-2-Pentanone	740	U
108-88-3	Toluene	370	U
10061-02-6	trans-1,3-Dichloropropene	740	U
79-00-5	1,1,2-Trichloroethane	740	U
127-18-4	Tetrachloroethene	370	U
591-78-6	2-Hexanone	740	U
126-48-1	Dibromochloromethane	740	U
108-90-7	Chlorobenzene	370	U
100-41-4	Ethylbenzene	740	U

1A

FIELD ID: 112

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.21

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004279.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 28.92 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	740	U
100-42-5	Styrene	740	U
75-25-2	Bromoform	740	U
79-34-5	1,1,2,2-Tetrachloroethane	740	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 112

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.21

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VB004279.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 28.92 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID: 113

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004280.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.19 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

113

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004280.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.19 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 113

Lab Name: FMETL NJDEP#: 13461

Project: 980211 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VB004280.D

Level: (low/med) MED Date Received: 9/7/99

% Moisture: not dec. 15.19 Date Analyzed: 9/9/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

114

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000808.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.87 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

114

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000808.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.87 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

114

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.03

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000808.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.87 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

115

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.05

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000809.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 8.19 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

115

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.05

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000809.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 8.19 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

115

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.05

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC000809.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 8.19 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

116

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000810.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.73 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	570	U
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

116

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000810.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.73 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 116

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000810.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.73 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

117

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000811.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 10.51 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

117

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000811.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 10.51 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

117

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000811.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 10.51 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

118

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.11

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000812.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 17.05 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

118

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.11

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000812.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 17.05 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

118

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.11

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000812.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 17.05 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

119

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000813.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.22 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

119

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000813.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.22 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 119

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000813.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.22 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

120

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.15

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000814.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 6.39 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	830	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	830	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	830	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	290	J
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	830	U
78-93-3	2-Butanone	830	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

120

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.15

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000814.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 6.39 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 120

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.15

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000814.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 6.39 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

121

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000815.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.33 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	360	J
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

121

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000815.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.33 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

121

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4777.17

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000815.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.33 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

122

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000816.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 15.42 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	860	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	860	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	860	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	350	J
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	860	U
78-93-3	2-Butanone	860	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

122

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000816.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 15.42 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 122

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.19

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VC000816.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 15.42 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

123

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.21

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000817.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.37 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	2500	
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

123

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.21

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000817.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.37 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

123

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.21

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000817.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 14.37 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

124

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000818.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.26 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	1200	
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

124

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000818.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.26 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

124

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.23

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC000818.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12.26 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

125

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VC000819.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.06 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3400	U
1634044	Methyl-tert-Butyl ether	790	U
108203	Di-isopropyl ether	530	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	790	U
74-83-9	Bromomethane	530	U
75-00-3	Chloroethane	790	U
75-69-4	Trichlorofluoromethane	530	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	530	U
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	710	
156-60-5	trans-1,2-Dichloroethene	530	U
75-35-3	1,1-Dichloroethane	260	U
108-05-4	Vinyl Acetate	790	U
78-93-3	2-Butanone	790	U
	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
75-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	530	U
71-43-2	Benzene	260	U
107-06-2	1,2-Dichloroethane	530	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
110-75-8	2-Chloroethyl vinyl ether	530	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-Pentanone	530	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	530	U
79-00-5	1,1,2-Trichloroethane	530	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	530	U
126-48-1	Dibromochloromethane	530	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	530	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

125

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VC000819.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.06 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	790	U
1330-20-7	o-Xylene	530	U
100-42-5	Styrene	530	U
75-25-2	Bromoform	530	U
79-34-5	1,1,2,2-Tetrachloroethane	530	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 125

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.25

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VC000819.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 9.06 Date Analyzed: 9/15/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

126

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000828.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3700	U
1634044	Methyl-tert-Butyl ether	850	U
108203	Di-isopropyl ether	570	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	850	U
74-83-9	Bromomethane	570	U
75-00-3	Chloroethane	850	U
75-69-4	Trichlorofluoromethane	570	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	570	U
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	5700	
156-60-5	trans-1,2-Dichloroethene	570	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	850	U
78-93-3	2-Butanone	850	U
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	570	U
71-43-2	Benzene	280	U
107-06-2	1,2-Dichloroethane	570	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	570	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	570	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	570	U
79-00-5	1,1,2-Trichloroethane	570	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	570	U
126-48-1	Dibromochloromethane	570	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	570	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

126

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000828.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	850	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 126

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.27

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000828.D

Level: (low/med) MED Date Received: 9/8/99

% Moisture: not dec. 12 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

127

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000832.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.54 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

127

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000832.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.54 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

127

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.03

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC000832.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.54 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

128

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.05

Sample wt/vol: 9.0 (g/ml) G Lab File ID: VC000833.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 24.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2600	U
107131	Acrylonitrile	2600	U
75650	tert-Butyl alcohol	4800	U
1634044	Methyl-tert-Butyl ether	1100	U
108203	Di-isopropyl ether	730	U
	Dichlorodifluoromethane	1500	U
74-87-3	Chloromethane	370	U
75-01-4	Vinyl Chloride	1100	U
74-83-9	Bromomethane	730	U
75-00-3	Chloroethane	1100	U
75-69-4	Trichlorofluoromethane	730	U
75-35-4	1,1-Dichloroethene	370	U
67-64-1	Acetone	730	U
75-15-0	Carbon Disulfide	370	U
75-09-2	Methylene Chloride	730	U
156-60-5	trans-1,2-Dichloroethene	730	U
75-35-3	1,1-Dichloroethane	370	U
108-05-4	Vinyl Acetate	1100	U
78-93-3	2-Butanone	1100	U
	cis-1,2-Dichloroethene	370	U
67-66-3	Chloroform	370	U
75-55-6	1,1,1-Trichloroethane	370	U
56-23-5	Carbon Tetrachloride	730	U
71-43-2	Benzene	370	U
107-06-2	1,2-Dichloroethane	730	U
79-01-6	Trichloroethene	370	U
78-87-5	1,2-Dichloropropane	370	U
75-27-4	Bromodichloromethane	370	U
110-75-8	2-Chloroethyl vinyl ether	730	U
10061-01-5	cis-1,3-Dichloropropene	370	U
108-10-1	4-Methyl-2-Pentanone	730	U
108-88-3	Toluene	370	U
10061-02-6	trans-1,3-Dichloropropene	730	U
79-00-5	1,1,2-Trichloroethane	730	U
127-18-4	Tetrachloroethene	370	U
591-78-6	2-Hexanone	730	U
126-48-1	Dibromochloromethane	730	U
108-90-7	Chlorobenzene	370	U
100-41-4	Ethylbenzene	730	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

128

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.05

Sample wt/vol: 9.0 (g/ml) G Lab File ID: VC000833.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 24.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1100	U
1330-20-7	o-Xylene	730	U
100-42-5	Styrene	730	U
75-25-2	Bromoform	730	U
79-34-5	1,1,2,2-Tetrachloroethane	730	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

128

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.05

Sample wt/vol: 9.0 (g/ml) G Lab File ID: VC000833.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 24.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

129

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000834.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.82 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

129

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000834.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.82 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

129

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.07

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VC000834.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.82 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

130

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.09

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000835.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 16.52 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	650	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	650	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	650	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	650	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	650	U
156-60-5	trans-1,2-Dichloroethene	650	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	650	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	650	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	650	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	650	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	650	U
79-00-5	1,1,2-Trichloroethane	650	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	650	U
126-48-1	Dibromochloromethane	650	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	650	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

130

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.09

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000835.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 16.52 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	650	U
100-42-5	Styrene	650	U
75-25-2	Bromoform	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

130

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.09

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000835.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 16.52 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

131

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000836.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 14.96 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	960	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	960	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	960	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	640	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	640	U
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	960	U
78-93-3	2-Butanone	960	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	640	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

131

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000836.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 14.96 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	960	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

131

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4790.11

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000836.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 14.96 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

132

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.13

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000837.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.65 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	650	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	650	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	650	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	650	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	650	U
156-60-5	trans-1,2-Dichloroethene	650	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	650	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	650	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	650	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	650	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	650	U
79-00-5	1,1,2-Trichloroethane	650	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	650	U
126-48-1	Dibromochloromethane	650	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	650	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

132

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.13

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000837.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.65 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	650	U
100-42-5	Styrene	650	U
75-25-2	Bromoform	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

132

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.13

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000837.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.65 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

133

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.15

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000838.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.41 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

133

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.15

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000838.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.41 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

133

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.15

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000838.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.41 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

134

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.17

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000839.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	960	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	960	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	960	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	640	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	640	U
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	960	U
78-93-3	2-Butanone	960	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	640	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

134

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.17

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000839.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	960	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

134

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.17

Sample wt/vol: 9.2 (g/ml) G Lab File ID: VC000839.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 15.48 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

135

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.19

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000840.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.26 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	940	U
108203	Di-isopropyl ether	630	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	940	U
74-83-9	Bromomethane	630	U
75-00-3	Chloroethane	940	U
75-69-4	Trichlorofluoromethane	630	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	630	U
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	630	U
156-60-5	trans-1,2-Dichloroethene	630	U
75-35-3	1,1-Dichloroethane	310	U
108-05-4	Vinyl Acetate	940	U
78-93-3	2-Butanone	940	U
	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
75-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	630	U
71-43-2	Benzene	310	U
107-06-2	1,2-Dichloroethane	630	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
110-75-8	2-Chloroethyl vinyl ether	630	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-Pentanone	630	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	630	U
79-00-5	1,1,2-Trichloroethane	630	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	630	U
126-48-1	Dibromochloromethane	630	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	630	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

135

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.19

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000840.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.26 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	940	U
1330-20-7	o-Xylene	630	U
100-42-5	Styrene	630	U
75-25-2	Bromoform	630	U
79-34-5	1,1,2,2-Tetrachloroethane	630	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

135

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.19

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC000840.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 17.26 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

136

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.21

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000841.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 19.5 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4300	U
1634044	Methyl-tert-Butyl ether	990	U
108203	Di-isopropyl ether	660	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	990	U
74-83-9	Bromomethane	660	U
75-00-3	Chloroethane	990	U
75-69-4	Trichlorofluoromethane	660	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	660	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	660	U
156-60-5	trans-1,2-Dichloroethene	660	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	990	U
78-93-3	2-Butanone	990	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	660	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	660	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	660	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	660	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	660	U
79-00-5	1,1,2-Trichloroethane	660	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	660	U
126-48-1	Dibromochloromethane	660	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	660	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

136

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.21

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000841.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 19.5 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	990	U
1330-20-7	o-Xylene	660	U
100-42-5	Styrene	660	U
75-25-2	Bromoform	660	U
79-34-5	1,1,2,2-Tetrachloroethane	660	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

136

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.21

Sample wt/vol: 9.4 (g/ml) G Lab File ID: VC000841.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 19.5 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

137

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.23

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000842.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 12.44 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	550	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	550	U
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	820	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

137

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.23

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000842.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 12.44 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 137

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.23

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC000842.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 12.44 Date Analyzed: 9/20/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

138

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.25

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000854.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 13.61 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

138

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.25

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000854.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 13.61 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

138

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.25

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC000854.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 13.61 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

139

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.27

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000855.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 21.78 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4500	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	690	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	690	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	690	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	690	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	690	U
156-60-5	trans-1,2-Dichloroethene	690	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	690	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	690	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	690	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	690	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	690	U
79-00-5	1,1,2-Trichloroethane	690	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	690	U
126-48-1	Dibromochloromethane	690	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	690	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

139

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.27

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000855.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 21.78 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	690	U
100-42-5	Styrene	690	U
75-25-2	Bromoform	690	U
79-34-5	1,1,2,2-Tetrachloroethane	690	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

139

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.27

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC000855.D

Level: (low/med) MED Date Received: 9/15/99

% Moisture: not dec. 21.78 Date Analyzed: 9/21/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

140

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.03

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC001020.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 14.26 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	1500	
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	900	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

140

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.03

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC001020.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 14.26 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 140

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.03

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC001020.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 14.26 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

141

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.05

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001021.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.41 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	810	
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

141

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.05

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001021.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.41 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

141

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.05

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001021.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.41 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

142

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001022.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.72 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

142

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001022.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.72 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

142

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.07

Sample wt/vol: 10.3 (g/ml) G Lab File ID: VC001022.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.72 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

143

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC001023.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.17 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	500	J
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	610	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

143

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC001023.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.17 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	910	U
1330-20-7	o-Xylene	610	U
100-42-5	Styrene	610	U
75-25-2	Bromoform	610	U
79-34-5	1,1,2,2-Tetrachloroethane	610	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 143

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.09

Sample wt/vol: 9.8 (g/ml) G Lab File ID: VC001023.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.17 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

144

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC001024.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 12.31 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	410	J
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

144

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC001024.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 12.31 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 144

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.11

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC001024.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 12.31 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

145

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001025.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.11 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	590	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	590	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	590	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	590	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	590	U
156-60-5	trans-1,2-Dichloroethene	590	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	590	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	590	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	590	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	590	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	590	U
79-00-5	1,1,2-Trichloroethane	590	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	590	U
126-48-1	Dibromochloromethane	590	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	590	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

145

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001025.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.11 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	590	U
100-42-5	Styrene	590	U
75-25-2	Bromoform	590	U
79-34-5	1,1,2,2-Tetrachloroethane	590	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

145

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.13

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC001025.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 16.11 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

146

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC001026.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.16 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	890	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	890	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	890	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	600	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	U
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	890	U
78-93-3	2-Butanone	890	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	600	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

146

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC001026.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.16 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	890	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 146

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.15

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC001026.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 15.16 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

147

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.17

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC001027.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 10.45 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	880	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	880	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	880	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	580	U
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	880	U
78-93-3	2-Butanone	880	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

147

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.17

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC001027.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 10.45 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	880	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 147

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.17

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC001027.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 10.45 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

148

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.19

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC001028.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 17.84 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4300	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	660	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	660	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	660	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	660	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	340	J
156-60-5	trans-1,2-Dichloroethene	660	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	660	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	660	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	660	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	660	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	660	U
79-00-5	1,1,2-Trichloroethane	660	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	660	U
126-48-1	Dibromochloromethane	660	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	660	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

148

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.19

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC001028.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 17.84 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	660	U
100-42-5	Styrene	660	U
75-25-2	Bromoform	660	U
79-34-5	1,1,2,2-Tetrachloroethane	660	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

148

Lab Name: FMETL NJDEP # 13461

Project: 980211 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.19

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VC001028.D

Level: (low/med) MED Date Received: 9/20/99

% Moisture: not dec. 17.84 Date Analyzed: 9/29/99

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

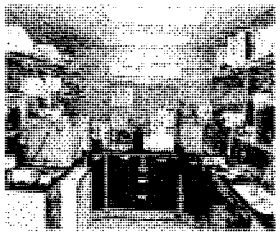
CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: M-12 LANDFILL

VOLUME II

Table of Contents

Section	Page No.
Volume I	
Sampling	1
Chain of Custody	2-32
GPS Maps	33-41
Landfill Cover	41A-41B
Boring Logs	42-189
Field Duplicate Identification	190-191
Method Summary	192-194
Case Narrative	195-196
Laboratory Chronicle	197-210
Soil Clean-Up Criteria	211-212
Qualifier Codes	213-214
Analytical Results	215
Volatiles	216
Method Blanks	217-262
Trip Blanks	263-302
Field Duplicates	322-763
Volume II	
Semi-Volatiles	764
Method Blanks	765-789
Field Duplicates	790-808
Samples	809-1251
Pest/PCB's	1252
Method Blanks	1253-1266
Field Duplicates	1267-1273
Samples	1274-1421
Metals	1422
Method blanks	1423-1427
Field Duplicates	1428-1434
Samples	1435-1582

SEMI-VOLATILE ORGANICS

METHOD BLANKS

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

SBLK 44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 44

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1332.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/01/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	150	U
62-75-9	N-nitroso-dimethylamine	100	U
62-53-3	Aniline	110	U
108-95-2	Phenol	170	U
111-44-4	bis(2-Chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	96	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	150	U
100-51-6	Benzyl alcohol	130	U
95-50-1	1,2-Dichlorobenzene	120	U
	2-Methylphenol	100	U
108-60-1	bis(2-chloroisopropyl)ether	130	U
	4-Methylphenol	130	U
621-64-7	n-Nitroso-di-n-propylamine	120	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	130	U
78-59-1	Isophorone	130	U
88-75-5	2-Nitrophenol	84	U
105-67-9	2,4-Dimethylphenol	150	U
111-91-1	bis(2-Chloroethoxy)methane	60	U
120-83-2	2,4-Dichlorophenol	79	U
65-85-0	Benzoic Acid	500	U
120-82-1	1,2,4-Trichlorobenzene	130	U
91-20-3	Naphthalene	120	U
106-47-8	4-Chloroaniline	150	U
87-68-3	Hexachlorobutadiene	120	U
59-50-7	4-Chloro-3-methylphenol	98	U
91-57-6	2-Methylnaphthalene	140	U
77-47-4	Hexachlorocyclopentadiene	28	U
88-06-2	2,4,6-Trichlorophenol	94	U
	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	88	U
88-74-4	2-Nitroaniline	83	U
131-11-3	Dimethylphthalate	76	U
208-96-8	Acenaphthylene	96	U
606-20-2	2,6-Dinitrotoluene	110	U
99-09-2	3-Nitroaniline	130	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

SBLK 44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 44

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1332.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/01/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	88	U
51-28-5	2,4-Dinitrophenol	500	U
132-64-9	Dibenzofuran	93	U
100-02-7	4-Nitrophenol	230	U
121-14-2	2,4-Dinitrotoluene	93	U
84-66-2	Diethylphthalate	100	U
86-73-7	Fluorene	96	U
7005-72-3	4-Chlorophenyl-phenylether	94	U
100-01-6	4-Nitroaniline	140	U
534-52-1	4,6-Dinitro-2-methylphenol	500	U
86-30-6	n-Nitrosodiphenylamine	92	U
103-33-3	Azobenzene	96	U
101-55-3	4-Bromophenyl-phenylether	86	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	150	U
85-01-8	Phenanthrene	96	U
120-12-7	Anthracene	96	U
84-74-2	Di-n-butylphthalate	1500	
206-44-0	Fluoranthene	97	U
92-87-5	Benzidine	450	U
129-00-0	Pyrene	110	U
85-68-7	Butylbenzylphthalate	130	U
56-55-3	Benzo[a]anthracene	98	U
91-94-1	3,3'-Dichlorobenzidine	170	U
218-01-9	Chrysene	130	U
117-81-7	bis(2-Ethylhexyl)phthalate	100	J
117-84-0	Di-n-octylphthalate	140	U
205-99-2	Benzo[b]fluoranthene	120	U
207-08-9	Benzo[k]fluoranthene	91	U
50-32-8	Benzo[a]pyrene	94	U
193-39-5	Indeno[1,2,3-cd]pyrene	100	U
53-70-3	Dibenz[a,h]anthracene	120	U
191-24-2	Benzo[g,h,i]perylene	120	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

SBLK 44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 44

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1332.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/01/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.91	470	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

SBLK 45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 45

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1399.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	150	U
62-75-9	N-nitroso-dimethylamine	100	U
62-53-3	Aniline	110	U
108-95-2	Phenol	170	U
111-44-4	bis(2-Chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	96	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	150	U
100-51-6	Benzyl alcohol	130	U
95-50-1	1,2-Dichlorobenzene	120	U
	2-Methylphenol	100	U
108-60-1	bis(2-chloroisopropyl)ether	130	U
	4-Methylphenol	130	U
621-64-7	n-Nitroso-di-n-propylamine	120	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	130	U
78-59-1	Isophorone	130	U
88-75-5	2-Nitrophenol	84	U
105-67-9	2,4-Dimethylphenol	150	U
111-91-1	bis(2-Chloroethoxy)methane	60	U
120-83-2	2,4-Dichlorophenol	79	U
65-85-0	Benzoic Acid	500	U
120-82-1	1,2,4-Trichlorobenzene	130	U
91-20-3	Naphthalene	120	U
106-47-8	4-Chloroaniline	150	U
87-68-3	Hexachlorobutadiene	120	U
59-50-7	4-Chloro-3-methylphenol	98	U
91-57-6	2-Methylnaphthalene	140	U
77-47-4	Hexachlorocyclopentadiene	28	U
88-06-2	2,4,6-Trichlorophenol	94	U
	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	88	U
88-74-4	2-Nitroaniline	83	U
131-11-3	Dimethylphthalate	76	U
208-96-8	Acenaphthylene	96	U
606-20-2	2,6-Dinitrotoluene	110	U
99-09-2	3-Nitroaniline	130	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

SBLK 45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 45

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1399.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	88	U
51-28-5	2,4-Dinitrophenol	500	U
132-64-9	Dibenzofuran	93	U
100-02-7	4-Nitrophenol	230	U
121-14-2	2,4-Dinitrotoluene	93	U
84-66-2	Diethylphthalate	100	U
86-73-7	Fluorene	96	U
7005-72-3	4-Chlorophenyl-phenylether	94	U
100-01-6	4-Nitroaniline	140	U
534-52-1	4,6-Dinitro-2-methylphenol	500	U
86-30-6	n-Nitrosodiphenylamine	92	U
103-33-3	Azobenzene	96	U
101-55-3	4-Bromophenyl-phenylether	86	U
118-74-1	Hexachlorobenzene	130	U
87-86-5	Pentachlorophenol	150	U
85-01-8	Phenanthrene	96	U
120-12-7	Anthracene	96	U
84-74-2	Di-n-butylphthalate	320	J
206-44-0	Fluoranthene	97	U
92-87-5	Benzidine	450	U
129-00-0	Pyrene	110	U
85-68-7	Butylbenzylphthalate	130	U
56-55-3	Benzo[a]anthracene	98	U
91-94-1	3,3'-Dichlorobenzidine	170	U
218-01-9	Chrysene	130	U
117-81-7	bis(2-Ethylhexyl)phthalate	210	
117-84-0	Di-n-octylphthalate	140	U
205-99-2	Benzo[b]fluoranthene	120	U
207-08-9	Benzo[k]fluoranthene	91	U
50-32-8	Benzo[a]pyrene	94	U
193-39-5	Indeno[1,2,3-cd]pyrene	100	U
53-70-3	Dibenz[a,h]anthracene	120	U
191-24-2	Benzo[g,h,i]perylene	120	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

SBLK 45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 45

Sample wt/vol: 20 (g/ml) G Lab File ID: BN1399.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	560	J
2. 000084-74-2	Dibutyl phthalate	19.19	620	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk291

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk291

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03666.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk291

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk291

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03666.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	920	J
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk291

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk291

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03666.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	018733-57-8	Silane, trichloroeicosyl-	24.77	1100	JN
2.		unknown	25.38	410	J
3.	000629-96-9	1-Eicosanol	27.21	3000	JN
4.	040710-42-7	1-Hentetracontanol	28.81	1500	JN
5.		unknown	28.98	490	J
6.		unknown	4.16	500	J
7.		unknown	4.28	700	J
8.		unknown	5.09	1400	J
9.		unknown	18.86	1200	J
10.	000057-10-3	Hexadecanoic acid	19.60	1300	JN
11.	001454-84-8	1-Nonadecanol	23.51	8000	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk292

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk292

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03685.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk292

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk292

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03685.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	220	J
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	170	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk292

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk292

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03685.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1600	J
2.	unknown	18.86	430	J
3. 000057-10-3	Hexadecanoic acid	19.60	1100	JN
4. 001454-84-8	1-Nonadecanol	23.51	5700	JN
5. 000629-96-9	1-Eicosanol	24.77	750	JN
6. 001599-67-3	1-Docosene	27.21	2200	JN
7.	unknown	27.96	430	J
8. 006624-79-9	1-Dotriacontanol	28.81	950	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk293

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk293

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03714.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk293

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk293

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03714.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	840	J
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk293

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk293

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03714.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1400	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	930	JN
3. 000057-10-3	Hexadecanoic acid	19.59	1000	JN
4. 001454-84-8	1-Nonadecanol	23.51	5400	JN
5. 006624-79-9	1-Dotriacontanol	24.77	600	JN
6. 000629-96-9	1-Eicosanol	27.21	1600	JN
7. 000112-88-9	1-Octadecene	28.82	740	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk296

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk296

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03751.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk296

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk296

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03751.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	940	J
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	170	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk296

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk296

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03751.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1300	J
2.	unknown	18.84	1300	J
3. 000057-10-3	Hexadecanoic acid	19.57	840	JN
4. 074685-30-6	5-Eicosene, (E)-	23.48	5800	JN
5. 000629-96-9	1-Eicosanol	24.75	620	JN
6. 006624-79-9	1-Dotriacontanol	27.18	1600	JN
7. 006971-40-0	17-Pentatriacontene	28.77	720	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk302

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk302

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03807.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk302

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk302

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03807.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	880	J
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk302

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk302

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03807.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 4 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1400	JN
2. 001454-84-8	1-Nonadecanol	23.49	3700	JN
3. 000629-96-9	1-Eicosanol	27.17	710	JN
4.	unknown	5.07	1000	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk303

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk303

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03841.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Sblk303

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk303

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03841.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 0 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	1100	
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Sblk303

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Sblk303

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03841.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 0 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	1500	JN
2. 000057-10-3	Hexadecanoic acid	19.58	1400	JN
3. 001454-84-8	1-Nonadecanol	23.48	6100	JN
4. 000661-19-8	1-Docosanol	24.75	620	JN
5. 000629-96-9	1-Eicosanol	27.18	1200	JN
6. 000661-19-8	1-Docosanol	28.77	450	JN

FIELD DUPLICATES

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

FIELD DUP 3/23/98

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.24

Sample wt/vol: 19.98 (g/ml) G Lab File ID: BN1397.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 10.87 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	94	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	560	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	99	U
88-74-4	2-Nitroaniline	93	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

FIELD DUP 2/23/98

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.24

Sample wt/vol: 19.98 (g/ml) G Lab File ID: BN1397.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 10.87 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	98	U
51-28-5	2,4-Dinitrophenol	560	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	84	J
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	560	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	97	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	110	U
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	110	U
92-87-5	Benzidine	510	U
129-00-0	Pyrene	130	U
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	B
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	110	U
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	130	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD DUP 312398

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.24

Sample wt/vol: 19.98 (g/ml) G Lab File ID: BN1397.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 10.87 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	730	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.19	2100	JN
3. 006971-40-0	17-Pentatriacontene	26.18	1400	JN
4. 000544-85-4	Dotriacontane	27.58	1300	JN
5. 000112-95-8	Eicosane	28.89	670	JN
6.	unknown	28.93	600	J
7.	unknown	29.62	520	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

FIELD DUP 3/24/98

Lab Name: FMETL NJDEP: 12461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.24

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN1415.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.73 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	350	U
62-75-9	N-nitroso-dimethylamine	230	U
62-53-3	Aniline	250	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	240	U
95-57-8	2-Chlorophenol	220	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	310	U
95-50-1	1,2-Dichlorobenzene	270	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	290	U
	4-Methylphenol	310	U
621-64-7	n-Nitroso-di-n-propylamine	280	U
67-72-1	Hexachloroethane	240	U
98-95-3	Nitrobenzene	310	U
78-59-1	Isophorone	300	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	300	U
91-20-3	Naphthalene	280	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	290	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	320	U
77-47-4	Hexachlorocyclopentadiene	66	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	240	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	220	U
606-20-2	2,6-Dinitrotoluene	260	U
99-09-2	3-Nitroaniline	290	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

FIELD DUP 3/24/98

Lab Name: FMETL NJDEP: 12461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.24

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN1415.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.73 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	530	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	240	U
86-73-7	Fluorene	220	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	210	U
103-33-3	Azobenzene	220	U
101-55-3	4-Bromophenyl-phenylether	200	U
118-74-1	Hexachlorobenzene	310	U
87-86-5	Pentachlorophenol	340	U
85-01-8	Phenanthrene	720	
120-12-7	Anthracene	180	J
84-74-2	Di-n-butylphthalate	650	JB
206-44-0	Fluoranthene	830	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	780	
85-68-7	Butylbenzylphthalate	290	U
56-55-3	Benzo[a]anthracene	350	
91-94-1	3,3'-Dichlorobenzidine	400	U
218-01-9	Chrysene	660	
117-81-7	bis(2-Ethylhexyl)phthalate	360	B
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo[b]fluoranthene	250	J
207-08-9	Benzo[k]fluoranthene	560	
50-32-8	Benzo[a]pyrene	400	
193-39-5	Indeno[1,2,3-cd]pyrene	210	J
53-70-3	Dibenz[a,h]anthracene	280	U
191-24-2	Benzo[g,h,i]perylene	220	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD DUP 3/24/98

Lab Name: FMETL NJDEP: 12461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.24

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN1415.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.73 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1500	J
2.	unknown	19.19	1100	J
3.	unknown	27.19	2500	J
4. 056554-90-6	13-Octadecenal	28.54	1400	JN
5. 007098-22-8	Tetratetracontane	28.89	2300	JN
6. 000544-76-3	Hexadecane	30.30	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 8/27/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.24

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03701.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.59 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 8/23/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.24

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03701.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.59 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Field Dupe 8/27/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.24

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03701.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.59 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.17	470	J
2.		unknown	4.31	530	J
3.		unknown	5.10	1800	J
4.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2400	JN
5.	000057-10-3	Hexadecanoic acid	19.58	650	JN
6.	000629-76-5	1-Pentadecanol	20.58	480	JN
7.	000629-78-7	Heptadecane	22.84	470	JN
8.	001454-84-8	1-Nonadecanol	23.49	5900	JN
9.	001653-33-4	4-Tetradecanol	24.76	880	JN
10.	001599-67-3	1-Docosene	27.20	1900	JN
11.	000629-96-9	1-Eicosanol	28.79	820	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 8/31/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.30

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03747.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.06 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 8/31/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.30

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03747.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.06 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1900	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Field Dupe 8/31/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.30

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03747.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.06 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.17	520	JN
2.	unknown	4.31	640	J
3.	unknown	5.09	1500	J
4.	unknown	17.07	2400	J
5.	unknown	18.85	2700	J
6. 000057-10-3	Hexadecanoic acid	19.58	1000	JN
7. 010544-50-0	Sulfur, mol. (S8)	20.56	3900	JN
8. 001454-84-8	1-Nonadecanol	23.49	7000	JN
9. 000629-96-9	1-Eicosanol	24.75	990	JN
10. 001599-67-3	1-Docosene	27.19	2100	JN
11.	unknown	28.77	1200	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 9/7/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.24

Sample wt/vol: 10.76 (g/ml) G Lab File ID: BN03762.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 10.59 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	100	J
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 9/7/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.24

Sample wt/vol: 10.76 (g/ml) G Lab File ID: BN03762.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 10.59 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	190	J
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	690	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	910	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	2100	
117-81-7	bis(2-Ethylhexyl)phthalate	380	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	2300	
207-08-9	Benzo[k]fluoranthene	1600	
50-32-8	Benzo[a]pyrene	930	J
193-39-5	Indeno[1,2,3-cd]pyrene	480	J
53-70-3	Dibenz[a,h]anthracene	140	J
191-24-2	Benzo[g,h,i]perylene	440	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Field Dupe 9/7/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.24

Sample wt/vol: 10.76 (g/ml) G Lab File ID: BN03762.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 10.59 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.16	630	JN
2.	unknown	4.30	990	J
3.	unknown	5.08	1700	J
4.	unknown	18.85	2500	J
5. 000057-10-3	Hexadecanoic acid	19.60	2000	JN
6. 010544-50-0	Sulfur, mol. (S8)	20.55	1900	JN
7. 000109-29-5	Oxacycloheptadecan-2-one	21.05	640	JN
8. 000057-11-4	Octadecanoic acid	21.18	520	JN
9. 056554-89-3	14-Octadecenal	23.07	590	JN
10. 000112-85-6	Docosanoic acid	23.96	790	JN
11. 025276-70-4	1-Pentadecanethiol	24.13	640	JN
12.	unknown	24.61	1100	J
13. 006624-79-9	1-Dotriacontanol	24.76	2900	JN
14. 000544-76-3	Hexadecane	25.92	1400	JN
15.	unknown	25.94	1400	J
16. 000192-97-2	Benzo[e]pyrene	26.05	1600	JN
17. 000638-66-4	Octadecanal	26.78	550	JN
18. 000630-07-9	Pentatriacontane	27.12	1200	JN
19. 000629-96-9	1-Eicosanol	27.19	2500	JN
20.	unknown	27.31	610	J
21.	unknown	27.94	590	J
22.	unknown	28.50	550	J
23.	unknown	28.79	2000	J
24. 000083-47-6	.gamma.-Sitosterol	29.35	2000	JN
25.	unknown	29.64	970	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 9/15/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.28

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03882.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.19 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field Dupe 9/15/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.28

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03882.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.19 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	440	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	160	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	2100	B
206-44-0	Fluoranthene	290	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	340	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	180	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	160	J
207-08-9	Benzo[k]fluoranthene	180	J
50-32-8	Benzo[a]pyrene	190	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	120	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Field Dupe 9/15/99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.28

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03882.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.19 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 13 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2500	JN
2.	007704-34-9	Sulfur	20.53	550	JN
3.	000112-92-5	1-Octadecanol	23.48	6700	JN
4.		unknown	24.13	470	J
5.		unknown	24.74	1200	J
6.	000630-06-8	Hexatriacontane	25.91	820	JN
7.	000297-03-0	Cyclotetracosane	25.94	1700	JN
8.	056554-87-1	16-Octadecenal	26.77	840	JN
9.	000629-62-9	Pentadecane	27.11	1600	JN
10.	000629-96-9	1-Eicosanol	27.18	1900	JN
11.	000124-25-4	Tetradecanal	28.24	860	JN
12.	000646-31-1	Tetracosane	28.64	780	JN
13.	000661-19-8	1-Docosanol	28.77	900	JN

SAMPLES

000809

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-1

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.01

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1334.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 11.02 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	160	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	180	U
111-44-4	bis(2-Chloroethyl)ether	110	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	110	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	130	U
67-72-1	Hexachloroethane	110	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	92	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	65	U
120-83-2	2,4-Dichlorophenol	86	U
65-85-0	Benzoic Acid	550	U
120-82-1	1,2,4-Trichlorobenzene	140	U
91-20-3	Naphthalene	130	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	31	U
88-06-2	2,4,6-Trichlorophenol	100	U
	2,4,5-Trichlorophenol	110	U
91-58-7	2-Chloronaphthalene	97	U
88-74-4	2-Nitroaniline	91	U
131-11-3	Dimethylphthalate	83	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	120	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-1

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.01

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1334.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 11.02 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	96	U
51-28-5	2,4-Dinitrophenol	550	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	150	U
534-52-1	4,6-Dinitro-2-methylphenol	550	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	100	U
101-55-3	4-Bromophenyl-phenylether	95	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	200	
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	4300	B
206-44-0	Fluoranthene	420	
92-87-5	Benzidine	500	U
129-00-0	Pyrene	300	
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	190	
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	280	
117-81-7	bis(2-Ethylhexyl)phthalate	170	B
117-84-0	Di-n-octylphthalate	150	U
205-99-2	Benzo[b]fluoranthene	100	J
207-08-9	Benzo[k]fluoranthene	200	
50-32-8	Benzo[a]pyrene	210	
193-39-5	Indeno[1,2,3-cd]pyrene	120	
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	95	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-1

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.01

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1334.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 11.02 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	4.90	480	JN
2. 056554-90-6	13-Octadecenal	27.23	900	JN
3.	unknown	27.69	980	J
4. 000638-66-4	Octadecanal	28.59	770	JN
5. 000630-06-8	Hexatriacontane	28.94	450	JN
6. 001454-84-8	1-Nonadecanol	29.02	590	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-2

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.03

Sample wt/vol: 19.73 (g/ml) G Lab File ID: BN1335.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.67 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	200	U
62-75-9	N-nitroso-dimethylamine	130	U
62-53-3	Aniline	140	U
108-95-2	Phenol	220	U
111-44-4	bis(2-Chloroethyl)ether	140	U
95-57-8	2-Chlorophenol	130	U
541-73-1	1,3-Dichlorobenzene	140	U
106-46-7	1,4-Dichlorobenzene	190	U
100-51-6	Benzyl alcohol	180	U
95-50-1	1,2-Dichlorobenzene	160	U
	2-Methylphenol	140	U
108-60-1	bis(2-chloroisopropyl)ether	170	U
	4-Methylphenol	180	U
621-64-7	n-Nitroso-di-n-propylamine	160	U
67-72-1	Hexachloroethane	140	U
98-95-3	Nitrobenzene	180	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	110	U
105-67-9	2,4-Dimethylphenol	190	U
111-91-1	bis(2-Chloroethoxy)methane	79	U
120-83-2	2,4-Dichlorophenol	100	U
65-85-0	Benzoic Acid	660	U
120-82-1	1,2,4-Trichlorobenzene	170	U
91-20-3	Naphthalene	160	U
106-47-8	4-Chloroaniline	190	U
87-68-3	Hexachlorobutadiene	170	U
59-50-7	4-Chloro-3-methylphenol	130	U
91-57-6	2-Methylnaphthalene	83	J
77-47-4	Hexachlorocyclopentadiene	38	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	140	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	110	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	87	J
606-20-2	2,6-Dinitrotoluene	150	U
99-09-2	3-Nitroaniline	170	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-2

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.03

Sample wt/vol: 19.73 (g/ml) G Lab File ID: BN1335.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.67 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	120	U
51-28-5	2,4-Dinitrophenol	660	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	300	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	130	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	190	U
534-52-1	4,6-Dinitro-2-methylphenol	660	U
86-30-6	n-Nitrosodiphenylamine	120	U
103-33-3	Azobenzene	130	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	180	U
87-86-5	Pentachlorophenol	200	U
85-01-8	Phenanthrene	460	
120-12-7	Anthracene	130	U
84-74-2	Di-n-butylphthalate	6500	B
206-44-0	Fluoranthene	460	
92-87-5	Benzidine	600	U
129-00-0	Pyrene	500	
85-68-7	Butylbenzylphthalate	170	U
56-55-3	Benzo[a]anthracene	270	
91-94-1	3,3'-Dichlorobenzidine	230	U
218-01-9	Chrysene	500	
117-81-7	bis(2-Ethylhexyl)phthalate	200	B
117-84-0	Di-n-octylphthalate	190	U
205-99-2	Benzo[b]fluoranthene	170	
207-08-9	Benzo[k]fluoranthene	280	
50-32-8	Benzo[a]pyrene	290	
193-39-5	Indeno[1,2,3-cd]pyrene	190	
53-70-3	Dibenz[a,h]anthracene	160	U
191-24-2	Benzo[g,h,i]perylene	190	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-2

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.03

Sample wt/vol: 19.73 (g/ml) G Lab File ID: BN1335.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.67 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	4.90	820	JN
2.	unknown	29.69	620	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-3

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.05

Sample wt/vol: 20.18 (g/ml) G Lab File ID: BN1336.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	190	U
62-75-9	N-nitroso-dimethylamine	130	U
62-53-3	Aniline	140	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	170	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	160	U
	4-Methylphenol	170	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	110	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	75	U
120-83-2	2,4-Dichlorophenol	99	U
65-85-0	Benzoic Acid	630	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	150	U
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	160	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	36	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	95	U
208-96-8	Acenaphthylene	110	J
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	160	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-3

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.05

Sample wt/vol: 20.18 (g/ml) G Lab File ID: BN1336.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	630	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	290	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	72	J
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	180	U
534-52-1	4,6-Dinitro-2-methylphenol	630	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	170	U
87-86-5	Pentachlorophenol	190	U
85-01-8	Phenanthrene	650	
120-12-7	Anthracene	94	J
84-74-2	Di-n-butylphthalate	2300	B
206-44-0	Fluoranthene	730	
92-87-5	Benzidine	570	U
129-00-0	Pyrene	750	
85-68-7	Butylbenzylphthalate	160	U
56-55-3	Benzo[a]anthracene	390	
91-94-1	3,3'-Dichlorobenzidine	220	U
218-01-9	Chrysene	800	
117-81-7	bis(2-Ethylhexyl)phthalate	88	JB
117-84-0	Di-n-octylphthalate	180	U
205-99-2	Benzo[b]fluoranthene	320	
207-08-9	Benzo[k]fluoranthene	290	
50-32-8	Benzo[a]pyrene	460	
193-39-5	Indeno[1,2,3-cd]pyrene	250	
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	250	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-3

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.05

Sample wt/vol: 20.18 (g/ml) G Lab File ID: BN1336.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.90	510	J
2.	000638-66-4	Octadecanal	27.24	1700	JN
3.	000544-76-3	Hexadecane	27.64	3400	JN
4.	000638-66-4	Octadecanal	28.60	1800	JN
5.	000544-76-3	Hexadecane	28.95	2400	JN
6.	006971-40-0	17-Pentatriacontene	29.02	1600	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-4

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.07 RD

Sample wt/vol: 20.06 (g/ml) G Lab File ID: BN1349.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 19.9 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	370	U
62-75-9	N-nitroso-dimethylamine	250	U
62-53-3	Aniline	270	U
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	260	U
95-57-8	2-Chlorophenol	240	U
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	260	U
108-60-1	bis(2-chloroisopropyl)ether	310	U
	4-Methylphenol	330	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	260	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	320	U
88-75-5	2-Nitrophenol	210	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	300	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	310	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	71	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	260	U
91-58-7	2-Chloronaphthalene	220	U
88-74-4	2-Nitroaniline	210	U
131-11-3	Dimethylphthalate	190	U
208-96-8	Acenaphthylene	240	U
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	310	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-4

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.07 RD

Sample wt/vol: 20.06 (g/ml) G Lab File ID: BN1349.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 19.9 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	220	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	230	U
100-02-7	4-Nitrophenol	570	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	240	U
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	350	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	230	U
103-33-3	Azobenzene	240	U
101-55-3	4-Bromophenyl-phenylether	220	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	240	U
120-12-7	Anthracene	240	U
84-74-2	Di-n-butylphthalate	7300	BD
206-44-0	Fluoranthene	240	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	280	U
85-68-7	Butylbenzylphthalate	310	U
56-55-3	Benzo[a]anthracene	240	U
91-94-1	3,3'-Dichlorobenzidine	430	U
218-01-9	Chrysene	310	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	300	U
207-08-9	Benzo[k]fluoranthene	230	U
50-32-8	Benzo[a]pyrene	230	U
193-39-5	Indeno[1,2,3-cd]pyrene	250	U
53-70-3	Dibenz[a,h]anthracene	300	U
191-24-2	Benzo[g,h,i]perylene	300	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-4

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.07 RD

Sample wt/vol: 20.06 (g/ml) G Lab File ID: BN1349.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 19.9 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 002136-70-1	Ethanol, 2-(tetradecyloxy)-	26.23	1200	JND
2. 000646-31-1	Tetracosane	27.62	1300	JND
3. 036653-82-4	1-Hexadecanol	27.66	1000	JND

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-5

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.09

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1342.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 18.63 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	99	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	70	U
120-83-2	2,4-Dichlorophenol	94	U
65-85-0	Benzoic Acid	590	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	160	U
77-47-4	Hexachlorocyclopentadiene	34	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	98	U
131-11-3	Dimethylphthalate	89	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-5

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.09

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1342.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 18.63 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	590	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	270	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	590	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	140	
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	3400	B
206-44-0	Fluoranthene	210	
92-87-5	Benzidine	540	U
129-00-0	Pyrene	170	
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	110	J
91-94-1	3,3'-Dichlorobenzidine	200	U
218-01-9	Chrysene	180	
117-81-7	bis(2-Ethylhexyl)phthalate	130	JB
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	66	J
207-08-9	Benzo[k]fluoranthene	140	
50-32-8	Benzo[a]pyrene	120	
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	78	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-5

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.09

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1342.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 18.63 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.91	640	J
2. 000089-19-0	1,2-Benzenedicarboxylic acid, bu	19.25	590	JN
3. 000544-76-3	Hexadecane	27.65	690	JN
4. 000630-06-8	Hexatriacontane	28.95	700	JN
5.	unknown	29.70	550	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-6

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.11 RD

Sample wt/vol: 20.61 (g/ml) G Lab File ID: BN1350.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21.24 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	370	U
62-75-9	N-nitroso-dimethylamine	250	U
62-53-3	Aniline	270	U
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	260	U
95-57-8	2-Chlorophenol	240	U
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	250	U
108-60-1	bis(2-chloroisopropyl)ether	310	U
	4-Methylphenol	330	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	260	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	320	U
88-75-5	2-Nitrophenol	210	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	320	U
91-20-3	Naphthalene	300	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	310	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	70	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	260	U
91-58-7	2-Chloronaphthalene	220	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	190	U
208-96-8	Acenaphthylene	240	U
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	310	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-6

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.11 RD

Sample wt/vol: 20.61 (g/ml) G Lab File ID: BN1350.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21.24 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	220	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	230	U
100-02-7	4-Nitrophenol	570	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	240	U
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	350	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	230	U
103-33-3	Azobenzene	240	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	360	U
85-01-8	Phenanthrene	190	JD
120-12-7	Anthracene	240	U
84-74-2	Di-n-butylphthalate	11000	BD
206-44-0	Fluoranthene	320	D
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	290	D
85-68-7	Butylbenzylphthalate	310	U
56-55-3	Benzo[a]anthracene	210	JD
91-94-1	3,3'-Dichlorobenzidine	420	U
218-01-9	Chrysene	340	D
117-81-7	bis(2-Ethylhexyl)phthalate	140	JBD
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	180	JD
207-08-9	Benzo[k]fluoranthene	210	JD
50-32-8	Benzo[a]pyrene	230	JD
193-39-5	Indeno[1,2,3-cd]pyrene	130	JD
53-70-3	Dibenz[a,h]anthracene	290	U
191-24-2	Benzo[g,h,i]perylene	130	JD

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-6

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.11 RD

Sample wt/vol: 20.61 (g/ml) G Lab File ID: BN1350.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 21.24 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 019047-85-9	Phosphonic acid, dioctadecyl est	26.23	1100	JND
2. 000544-76-3	Hexadecane	27.62	2100	JND
3. 000646-31-1	Tetracosane	28.92	1400	JND
4. 000514-07-8	D-Friedoolean-14-en-3-one	30.73	2200	JND
5. 000127-22-0	Taraxerol	31.01	3200	JND

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-7

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.13

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1344.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 20.71 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	73	U
120-83-2	2,4-Dichlorophenol	97	U
65-85-0	Benzoic Acid	610	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	140	J
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	77	J
77-47-4	Hexachlorocyclopentadiene	35	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	93	U
208-96-8	Acenaphthylene	210	
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-7

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.13

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1344.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 20.71 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	610	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	280	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	96	J
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	610	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	850	
120-12-7	Anthracene	120	J
84-74-2	Di-n-butylphthalate	3000	B
206-44-0	Fluoranthene	990	
92-87-5	Benzidine	560	U
129-00-0	Pyrene	1000	
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	470	
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	1100	
117-81-7	bis(2-Ethylhexyl)phthalate	88	JB
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	450	
207-08-9	Benzo[k]fluoranthene	380	
50-32-8	Benzo[a]pyrene	560	
193-39-5	Indeno[1,2,3-cd]pyrene	310	
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	290	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-7

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.13

Sample wt/vol: 20.53 (g/ml) G Lab File ID: BN1344.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 20.71 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.91	700	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.25	760	JN
3.	002461-18-9	Oxirane, [(dodecyloxy)methyl]-	26.26	720	JN
4.	056554-90-6	13-Octadecenal	27.25	1400	JN
5.	000000-00-0	10-Methylnonadecane	27.66	2500	JN
6.	002765-11-9	Pentadecanal-	28.61	920	JN
7.	000638-67-5	Tricosane	28.96	1600	JN
8.	005076-20-0	Oxirane, tetramethyl-	29.12	800	JN
9.		unknown	30.81	3000	J
10.	000127-22-0	Taraxerol	31.08	3100	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-8

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.15 RD

Sample wt/vol: 20.99 (g/ml) G Lab File ID: BN1351.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.61 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	370	U
62-75-9	N-nitroso-dimethylamine	250	U
62-53-3	Aniline	270	U
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	260	U
95-57-8	2-Chlorophenol	240	U
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	260	U
108-60-1	bis(2-chloroisopropyl)ether	310	U
	4-Methylphenol	330	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	260	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	320	U
88-75-5	2-Nitrophenol	210	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	1200	D
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	310	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	1100	D
77-47-4	Hexachlorocyclopentadiene	71	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	260	U
91-58-7	2-Chloronaphthalene	220	U
88-74-4	2-Nitroaniline	210	U
131-11-3	Dimethylphthalate	190	U
208-96-8	Acenaphthylene	320	D
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	310	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-8

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.15 RD

Sample wt/vol: 20.99 (g/ml) G Lab File ID: BN1351.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.61 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	610	D
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	560	D
100-02-7	4-Nitrophenol	570	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	1800	D
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	350	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	230	U
103-33-3	Azobenzene	240	U
101-55-3	4-Bromophenyl-phenylether	220	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	9000	D
120-12-7	Anthracene	1200	D
84-74-2	Di-n-butylphthalate	1900	BD
206-44-0	Fluoranthene	6400	D
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	5900	D
85-68-7	Butylbenzylphthalate	310	U
56-55-3	Benzo[a]anthracene	3000	D
91-94-1	3,3'-Dichlorobenzidine	430	U
218-01-9	Chrysene	4300	D
117-81-7	bis(2-Ethylhexyl)phthalate	140	JBD
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	1500	D
207-08-9	Benzo[k]fluoranthene	2800	D
50-32-8	Benzo[a]pyrene	2600	D
193-39-5	Indeno[1,2,3-cd]pyrene	1200	D
53-70-3	Dibenz[a,h]anthracene	300	U
191-24-2	Benzo[g,h,i]perylene	1300	D

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-8

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.15 RD

Sample wt/vol: 20.99 (g/ml) G Lab File ID: BN1351.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 23.61 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000090-12-0	Naphthalene, 1-methyl-	12.74	1200	JND
2. 000581-40-8	Naphthalene, 2,3-dimethyl-	14.19	1200	JND
3. 000132-65-0	Dibenzothiophene	18.14	1300	JND
4.	unknown	19.22	2100	JD
5. 000610-48-0	Anthracene, 1-methyl-	19.62	2600	JND
6. 000613-12-7	Anthracene, 2-methyl-	19.69	2700	JND
7. 000832-69-9	Phenanthrene, 1-methyl-	19.87	3000	JND
8. 000613-12-7	Anthracene, 2-methyl-	19.93	1800	JND
9. 000612-94-2	Naphthalene, 2-phenyl-	20.36	1300	JND
10. 003674-66-6	Phenanthrene, 2,5-dimethyl-	20.98	1400	JND
11. 000192-97-2	Benzo[e]pyrene	27.61	1700	JND

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-9

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.17

Sample wt/vol: 20.34 (g/ml) G Lab File ID: BN1346.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 25.5 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	200	U
62-75-9	N-nitroso-dimethylamine	130	U
62-53-3	Aniline	140	U
108-95-2	Phenol	220	U
111-44-4	bis(2-Chloroethyl)ether	140	U
95-57-8	2-Chlorophenol	130	U
541-73-1	1,3-Dichlorobenzene	140	U
106-46-7	1,4-Dichlorobenzene	190	U
100-51-6	Benzyl alcohol	180	U
95-50-1	1,2-Dichlorobenzene	160	U
	2-Methylphenol	140	U
108-60-1	bis(2-chloroisopropyl)ether	170	U
	4-Methylphenol	180	U
621-64-7	n-Nitroso-di-n-propylamine	160	U
67-72-1	Hexachloroethane	140	U
98-95-3	Nitrobenzene	180	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	110	U
105-67-9	2,4-Dimethylphenol	190	U
111-91-1	bis(2-Chloroethoxy)methane	79	U
120-83-2	2,4-Dichlorophenol	100	U
65-85-0	Benzoic Acid	660	U
120-82-1	1,2,4-Trichlorobenzene	170	U
91-20-3	Naphthalene	110	J
106-47-8	4-Chloroaniline	190	U
87-68-3	Hexachlorobutadiene	160	U
59-50-7	4-Chloro-3-methylphenol	130	U
91-57-6	2-Methylnaphthalene	74	J
77-47-4	Hexachlorocyclopentadiene	38	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	140	U
91-58-7	2-Chloronaphthalene	120	U
88-74-4	2-Nitroaniline	110	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	81	J
606-20-2	2,6-Dinitrotoluene	150	U
99-09-2	3-Nitroaniline	170	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-9

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.17

Sample wt/vol: 20.34 (g/ml) G Lab File ID: BN1346.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 25.5 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	Q	
83-32-9	Acenaphthene	93	J
51-28-5	2,4-Dinitrophenol	660	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	300	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	98	J
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	190	U
534-52-1	4,6-Dinitro-2-methylphenol	660	U
86-30-6	n-Nitrosodiphenylamine	120	U
103-33-3	Azobenzene	130	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	170	U
87-86-5	Pentachlorophenol	190	U
85-01-8	Phenanthrene	1100	
120-12-7	Anthracene	190	
84-74-2	Di-n-butylphthalate	500	JB
206-44-0	Fluoranthene	1600	
92-87-5	Benzidine	600	U
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	170	U
56-55-3	Benzo[a]anthracene	640	
91-94-1	3,3'-Dichlorobenzidine	230	U
218-01-9	Chrysene	1100	
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	190	U
205-99-2	Benzo[b]fluoranthene	610	
207-08-9	Benzo[k]fluoranthene	650	
50-32-8	Benzo[a]pyrene	740	
193-39-5	Indeno[1,2,3-cd]pyrene	370	
53-70-3	Dibenz[a,h]anthracene	160	U
191-24-2	Benzo[g,h,i]perylene	340	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-9

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3420 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3420.17

Sample wt/vol: 20.34 (g/ml) G Lab File ID: BN1346.D

Level: (low/med) LOW Date Received: 03/19/98

% Moisture: 25.5 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	4.91	650	JN
2. 000541-02-6	Cyclopentasiloxane, decamethyl-	10.39	580	JN
3. 000084-64-0	1,2-Benzenedicarboxylic acid, bu	19.25	900	JN
4. 056554-90-6	13-Octadecenal	27.25	1600	JN
5. 000544-76-3	Hexadecane	27.65	1800	JN
6. 000638-66-4	Octadecanal	28.61	630	JN
7. 000112-95-8	Eicosane	28.96	1400	JN
8.	unknown	29.71	1000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-10

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.02

Sample wt/vol: 20.28 (g/ml) G Lab File ID: BN1352.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 8.7 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	160	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	180	U
111-44-4	bis(2-Chloroethyl)ether	110	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	110	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	140	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	140	U
621-64-7	n-Nitroso-di-n-propylamine	130	U
67-72-1	Hexachloroethane	110	U
98-95-3	Nitrobenzene	140	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	91	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	64	U
120-83-2	2,4-Dichlorophenol	85	U
65-85-0	Benzoic Acid	540	U
120-82-1	1,2,4-Trichlorobenzene	140	U
91-20-3	Naphthalene	130	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	130	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	31	U
88-06-2	2,4,6-Trichlorophenol	100	U
	2,4,5-Trichlorophenol	110	U
91-58-7	2-Chloronaphthalene	96	U
88-74-4	2-Nitroaniline	90	U
131-11-3	Dimethylphthalate	82	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	120	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-10

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.02

Sample wt/vol: 20.28 (g/ml) G Lab File ID: BN1352.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 8.7 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	95	U
51-28-5	2,4-Dinitrophenol	540	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	150	U
534-52-1	4,6-Dinitro-2-methylphenol	540	U
86-30-6	n-Nitrosodiphenylamine	99	U
103-33-3	Azobenzene	100	U
101-55-3	4-Bromophenyl-phenylether	93	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	150	
120-12-7	Anthracene	100	U
84-74-2	Di-n-butylphthalate	170	JB
206-44-0	Fluoranthene	160	
92-87-5	Benzidine	490	U
129-00-0	Pyrene	160	
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	130	
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	260	
117-81-7	bis(2-Ethylhexyl)phthalate	98	JB
117-84-0	Di-n-octylphthalate	150	U
205-99-2	Benzo[b]fluoranthene	160	
207-08-9	Benzo[k]fluoranthene	300	
50-32-8	Benzo[a]pyrene	230	
193-39-5	Indeno[1,2,3-cd]pyrene	160	
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	180	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-10

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.02

Sample wt/vol: 20.28 (g/ml) G Lab File ID: BN1352.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 8.7 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	4.88	490	JN
2. 000629-78-7	Heptadecane	27.63	660	JN
3. 054833-23-7	Eicosane, 10-methyl-	28.93	460	JN
4. 000629-96-9	1-Eicosanol	29.00	800	JN
5.	unknown	29.68	1100	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-11

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.04

Sample wt/vol: 19.93 (g/ml) G Lab File ID: BN1353.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.55 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	94	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	560	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	280	
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	210	
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	99	U
88-74-4	2-Nitroaniline	93	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-11

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.04

Sample wt/vol: 19.93 (g/ml) G Lab File ID: BN1353.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.55 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	98	U
51-28-5	2,4-Dinitrophenol	560	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	560	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	97	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	120	
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	340	JB
206-44-0	Fluoranthene	96	J
92-87-5	Benzidine	510	U
129-00-0	Pyrene	79	J
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	95	J
117-81-7	bis(2-Ethylhexyl)phthalate	67	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	100	U
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	130	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-11

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.04

Sample wt/vol: 19.93 (g/ml) G Lab File ID: BN1353.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.55 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.88	520	J
2. 000108-38-3	Benzene, 1,3-dimethyl-	5.82	480	JN
3.	unknown	19.23	530	J
4.	unknown	27.22	450	J
5. 000630-06-8	Hexatriacontane	27.62	570	JN
6. 000000-00-0	10-Methylnonadecane	28.93	490	JN
7. 000629-96-9	1-Eicosanol	28.99	770	JN
8.	unknown	29.66	950	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-12

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.06

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1354.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 12.33 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	95	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	570	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	94	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-12

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.06

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1354.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 12.33 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	73	J
51-28-5	2,4-Dinitrophenol	570	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	58	J
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	570	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	98	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	540	
120-12-7	Anthracene	110	J
84-74-2	Di-n-butylphthalate	390	JB
206-44-0	Fluoranthene	700	
92-87-5	Benzidine	510	U
129-00-0	Pyrene	430	
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	220	
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	380	
117-81-7	bis(2-Ethylhexyl)phthalate	90	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	190	
207-08-9	Benzo[k]fluoranthene	190	
50-32-8	Benzo[a]pyrene	250	
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-12

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.06

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1354.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 12.33 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.88	520	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.23	750	JN
3. 021964-48-7	1,12-Tridecadiene	27.22	510	JN
4. 000544-76-3	Hexadecane	27.62	1600	JN
5. 000630-07-9	Pentatriacontane	28.93	670	JN
6. 000629-76-5	1-Pentadecanol	28.99	820	JN
7.	unknown	29.67	970	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-13

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.08

Sample wt/vol: 20.92 (g/ml) G Lab File ID: BN1355.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 15.57 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	95	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	570	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	94	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-13

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.08

Sample wt/vol: 20.92 (g/ml) G Lab File ID: BN1355.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 15.57 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	99	U
51-28-5	2,4-Dinitrophenol	570	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	570	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	98	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	110	U
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	370	JB
206-44-0	Fluoranthene	110	U
92-87-5	Benzidine	510	U
129-00-0	Pyrene	130	U
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	85	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	110	U
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-13

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.08

Sample wt/vol: 20.92 (g/ml) G Lab File ID: BN1355.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 15.57 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.89	540	J
2.	unknown	19.23	620	J
3. 000105-87-3	2,6-Octadien-1-ol, 3,7-dimethyl-,	27.17	510	JN
4.	unknown	27.21	520	J
5. 000630-06-8	Hexatriacontane	27.62	1900	JN
6. 002765-11-9	Pentadecanal-	28.57	760	JN
7. 000112-95-8	Eicosane	28.92	1400	JN
8. 000629-76-5	1-Pentadecanol	28.99	980	JN
9.	unknown	29.67	1100	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-14

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.10

Sample wt/vol: 20.47 (g/ml) G Lab File ID: BN1356.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.16 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	160	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	180	U
111-44-4	bis(2-Chloroethyl)ether	110	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	110	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	130	U
67-72-1	Hexachloroethane	110	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	91	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	65	U
120-83-2	2,4-Dichlorophenol	86	U
65-85-0	Benzoic Acid	540	U
120-82-1	1,2,4-Trichlorobenzene	140	U
91-20-3	Naphthalene	130	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	31	U
88-06-2	2,4,6-Trichlorophenol	100	U
	2,4,5-Trichlorophenol	110	U
91-58-7	2-Chloronaphthalene	96	U
88-74-4	2-Nitroaniline	90	U
131-11-3	Dimethylphthalate	82	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	120	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-14

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.10

Sample wt/vol: 20.47 (g/ml) G Lab File ID: BN1356.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.16 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	95	U
51-28-5	2,4-Dinitrophenol	540	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	150	U
534-52-1	4,6-Dinitro-2-methylphenol	540	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	100	U
101-55-3	4-Bromophenyl-phenylether	94	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	57	J
120-12-7	Anthracene	100	U
84-74-2	Di-n-butylphthalate	320	JB
206-44-0	Fluoranthene	110	
92-87-5	Benzidine	490	U
129-00-0	Pyrene	80	J
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	96	J
117-81-7	bis(2-Ethylhexyl)phthalate	73	JB
117-84-0	Di-n-octylphthalate	150	U
205-99-2	Benzo[b]fluoranthene	130	U
207-08-9	Benzo[k]fluoranthene	65	J
50-32-8	Benzo[a]pyrene	100	U
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	130	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-14

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.10

Sample wt/vol: 20.47 (g/ml) G Lab File ID: BN1356.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 10.16 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	4.88	550	JN
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.23	570	JN
3. 000638-66-4	Octadecanal	27.22	870	JN
4. 000630-06-8	Hexatriacontane	27.62	690	JN
5. 007390-81-0	Oxirane, hexadecyl-	28.57	570	JN
6. 000646-31-1	Tetracosane	28.92	880	JN
7. 006971-40-0	17-Pentatriacontene	28.99	1000	JN
8.	unknown	29.67	1200	J
9. 001235-39-8	1-Naphthalenecarboxylic acid, de	30.14	1500	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. **B-15**

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3742 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.12

Sample wt/vol: 20.42 (g/ml) G Lab File ID: BN1357.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 18.87 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	72	U
120-83-2	2,4-Dichlorophenol	95	U
65-85-0	Benzoic Acid	600	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	51	J
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	60	J
77-47-4	Hexachlorocyclopentadiene	34	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	91	U
208-96-8	Acenaphthylene	18	J
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-15

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3742 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.12

Sample wt/vol: 20.42 (g/ml) G Lab File ID: BN1357.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 18.87 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	600	U
132-64-9	Dibenzofuran	21	J
100-02-7	4-Nitrophenol	280	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	18	J
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	600	U
86-30-6	n-Nitrosodiphenylamine	56	J
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	120	
120-12-7	Anthracene	17	J
84-74-2	Di-n-butylphthalate	610	B
206-44-0	Fluoranthene	140	
92-87-5	Benzidine	550	U
129-00-0	Pyrene	140	
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	63	J
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	160	
117-81-7	bis(2-Ethylhexyl)phthalate	230	B
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	160	
207-08-9	Benzo[k]fluoranthene	180	
50-32-8	Benzo[a]pyrene	72	J
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-15

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3742 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.12

Sample wt/vol: 20.42 (g/ml) G Lab File ID: BN1357.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 18.87 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.23	970	JN
2. 000638-67-5	Tricosane	26.93	500	JN
3.	unknown	27.17	560	J
4. 007098-22-8	Tetratetracontane	28.93	1900	JN
5.	unknown	29.67	870	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-16

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.14

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1358.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.87 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	190	U
62-75-9	N-nitroso-dimethylamine	130	U
62-53-3	Aniline	140	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	190	U
100-51-6	Benzyl alcohol	170	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	160	U
	4-Methylphenol	170	U
621-64-7	n-Nitroso-di-n-propylamine	160	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	110	U
105-67-9	2,4-Dimethylphenol	190	U
111-91-1	bis(2-Chloroethoxy)methane	76	U
120-83-2	2,4-Dichlorophenol	100	U
65-85-0	Benzoic Acid	640	U
120-82-1	1,2,4-Trichlorobenzene	170	U
91-20-3	Naphthalene	160	U
106-47-8	4-Chloroaniline	190	U
87-68-3	Hexachlorobutadiene	160	U
59-50-7	4-Chloro-3-methylphenol	130	U
91-57-6	2-Methylnaphthalene	180	U
77-47-4	Hexachlorocyclopentadiene	37	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	110	U
131-11-3	Dimethylphthalate	97	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	150	U
99-09-2	3-Nitroaniline	160	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-16

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.14

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1358.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.87 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	640	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	300	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	180	U
534-52-1	4,6-Dinitro-2-methylphenol	640	U
86-30-6	n-Nitrosodiphenylamine	120	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	170	U
87-86-5	Pentachlorophenol	190	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	120	U
84-74-2	Di-n-butylphthalate	450	JB
206-44-0	Fluoranthene	84	J
92-87-5	Benzidine	580	U
129-00-0	Pyrene	73	J
85-68-7	Butylbenzylphthalate	160	U
56-55-3	Benzo[a]anthracene	130	U
91-94-1	3,3'-Dichlorobenzidine	220	U
218-01-9	Chrysene	160	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	B
117-84-0	Di-n-octylphthalate	180	U
205-99-2	Benzo[b]fluoranthene	160	U
207-08-9	Benzo[k]fluoranthene	120	U
50-32-8	Benzo[a]pyrene	120	U
193-39-5	Indeno[1,2,3-cd]pyrene	130	U
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	150	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-16

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.14

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1358.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.87 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/02/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.23	710	JN
2. 000105-87-3	2,6-Octadien-1-ol, 3,7-dimethyl-,	27.17	990	JN
3.	unknown	29.67	730	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-17

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.16 R

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1368.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 20.08 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	190	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	140	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	170	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	160	U
	4-Methylphenol	170	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	74	U
120-83-2	2,4-Dichlorophenol	98	U
65-85-0	Benzoic Acid	620	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	150	U
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	35	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	94	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	160	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-17

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.16 R

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1368.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 20.08 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	620	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	280	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	620	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	120	U
84-74-2	Di-n-butylphthalate	510	JB
206-44-0	Fluoranthene	120	U
92-87-5	Benzidine	560	U
129-00-0	Pyrene	140	U
85-68-7	Butylbenzylphthalate	65	J
56-55-3	Benzo[a]anthracene	120	U
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	74	J
117-81-7	bis(2-Ethylhexyl)phthalate	350	B
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	150	U
207-08-9	Benzo[k]fluoranthene	62	J
50-32-8	Benzo[a]pyrene	120	U
193-39-5	Indeno[1,2,3-cd]pyrene	130	U
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	150	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-17

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.16 R

Sample wt/vol: 20.17 (g/ml) G Lab File ID: BN1368.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 20.08 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	500	J
2.	unknown	19.19	900	J
3. 006624-79-9	1-Dotriacontanol	26.19	710	JN
4. 019047-85-9	Phosphonic acid, dioctadecyl est	28.94	710	JN
5.	unknown	29.62	930	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-18

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.18 R

Sample wt/vol: 20.21 (g/ml) G Lab File ID: BN1369.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.59 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	190	U
62-75-9	N-nitroso-dimethylamine	130	U
62-53-3	Aniline	140	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	190	U
100-51-6	Benzyl alcohol	170	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	160	U
	4-Methylphenol	170	U
621-64-7	n-Nitroso-di-n-propylamine	160	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	110	U
105-67-9	2,4-Dimethylphenol	190	U
111-91-1	bis(2-Chloroethoxy)methane	76	U
120-83-2	2,4-Dichlorophenol	100	U
65-85-0	Benzoic Acid	640	U
120-82-1	1,2,4-Trichlorobenzene	170	U
91-20-3	Naphthalene	160	U
106-47-8	4-Chloroaniline	190	U
87-68-3	Hexachlorobutadiene	160	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	36	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	110	U
131-11-3	Dimethylphthalate	97	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	150	U
99-09-2	3-Nitroaniline	160	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-18

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.18 R

Sample wt/vol: 20.21 (g/ml) G Lab File ID: BN1369.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.59 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	640	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	290	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	180	U
534-52-1	4,6-Dinitro-2-methylphenol	640	U
86-30-6	n-Nitrosodiphenylamine	120	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	170	U
87-86-5	Pentachlorophenol	190	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	120	U
84-74-2	Di-n-butylphthalate	560	B
206-44-0	Fluoranthene	120	U
92-87-5	Benzidine	580	U
129-00-0	Pyrene	85	J
85-68-7	Butylbenzylphthalate	160	U
56-55-3	Benzo[a]anthracene	130	U
91-94-1	3,3'-Dichlorobenzidine	220	U
218-01-9	Chrysene	69	J
117-81-7	bis(2-Ethylhexyl)phthalate	220	B
117-84-0	Di-n-octylphthalate	180	U
205-99-2	Benzo[b]fluoranthene	160	U
207-08-9	Benzo[k]fluoranthene	120	U
50-32-8	Benzo[a]pyrene	120	U
193-39-5	Indeno[1,2,3-cd]pyrene	130	U
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	150	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-18

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.18 R

Sample wt/vol: 20.21 (g/ml) G Lab File ID: BN1369.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 22.59 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	510	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.19	1000	JN
3. 006971-40-0	17-Pentatriacontene	26.18	520	JN
4. 000629-96-9	1-Eicosanol	28.93	580	JN
5.	unknown	29.61	760	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-19

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.20 R

Sample wt/vol: 20.6 (g/ml) G Lab File ID: BN1370.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 21.37 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	73	U
120-83-2	2,4-Dichlorophenol	98	U
65-85-0	Benzoic Acid	620	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	150	U
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	35	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	93	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-19

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.20 R

Sample wt/vol: 20.6 (g/ml) G Lab File ID: BN1370.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 21.37 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	620	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	280	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	620	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	120	U
84-74-2	Di-n-butylphthalate	330	JB
206-44-0	Fluoranthene	120	U
92-87-5	Benzidine	560	U
129-00-0	Pyrene	64	J
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	120	U
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	310	B
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	150	U
207-08-9	Benzo[k]fluoranthene	110	U
50-32-8	Benzo[a]pyrene	120	U
193-39-5	Indeno[1,2,3-cd]pyrene	130	U
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	150	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-19

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3424 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3424.20 R

Sample wt/vol: 20.6 (g/ml) G Lab File ID: BN1370.D

Level: (low/med) LOW Date Received: 03/20/98

% Moisture: 21.37 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	19.19	570	J
2.	002136-70-1	Ethanol, 2-(tetradecyloxy)-	26.18	870	JN
3.	000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.13	690	JN
4.	019047-85-9	Phosphonic acid, dioctadecyl est	27.60	970	JN
5.	000629-96-9	1-Eicosanol	28.93	800	JN
6.		unknown	29.62	960	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-20

Lab Name: FMETL NJDEP:

Project: 13461 Case No: 3425 Location: 98-021 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.02

Sample wt/vol: 21.59 (g/ml) G Lab File ID: BN1371.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 13.78 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	160	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	180	U
111-44-4	bis(2-Chloroethyl)ether	110	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	110	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	140	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	130	U
	4-Methylphenol	140	U
621-64-7	n-Nitroso-di-n-propylamine	130	U
67-72-1	Hexachloroethane	110	U
98-95-3	Nitrobenzene	140	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	90	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	64	U
120-83-2	2,4-Dichlorophenol	85	U
65-85-0	Benzoic Acid	540	U
120-82-1	1,2,4-Trichlorobenzene	140	U
91-20-3	Naphthalene	130	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	130	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	31	U
88-06-2	2,4,6-Trichlorophenol	100	U
	2,4,5-Trichlorophenol	110	U
91-58-7	2-Chloronaphthalene	95	U
88-74-4	2-Nitroaniline	89	U
131-11-3	Dimethylphthalate	81	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	120	U
99-09-2	3-Nitroaniline	130	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-20

Lab Name: FMETL NJDEP:

Project: 13461 Case No: 3425 Location: 98-021 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.02

Sample wt/vol: 21.59 (g/ml) G Lab File ID: BN1371.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 13.78 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	94	U
51-28-5	2,4-Dinitrophenol	540	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	150	U
534-52-1	4,6-Dinitro-2-methylphenol	540	U
86-30-6	n-Nitrosodiphenylamine	98	U
103-33-3	Azobenzene	100	U
101-55-3	4-Bromophenyl-phenylether	93	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	100	U
120-12-7	Anthracene	100	U
84-74-2	Di-n-butylphthalate	340	JB
206-44-0	Fluoranthene	72	J
92-87-5	Benzidine	490	U
129-00-0	Pyrene	80	J
85-68-7	Butylbenzylphthalate	130	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	180	U
218-01-9	Chrysene	68	J
117-81-7	bis(2-Ethylhexyl)phthalate	390	B
117-84-0	Di-n-octylphthalate	150	U
205-99-2	Benzo[b]fluoranthene	130	U
207-08-9	Benzo[k]fluoranthene	57	J
50-32-8	Benzo[a]pyrene	100	U
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	130	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-20

Lab Name: FMETL NJDEP:

Project: 13461 Case No: 3425 Location: 98-021 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.02

Sample wt/vol: 21.59 (g/ml) G Lab File ID: BN1371.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 13.78 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/03/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	19.19	610	J
2. 000629-96-9	1-Eicosanol	26.18	840	JN
3.	unknown	27.13	550	J
4. 000630-06-8	Hexatriacontane	27.58	740	JN
5. 000112-95-8	Eicosane	28.89	590	JN
6. 000629-76-5	1-Pentadecanol	28.93	700	JN
7.	unknown	29.62	780	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-21

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.04

Sample wt/vol: 21.09 (g/ml) G Lab File ID: BN1372.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.42 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1700	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1900	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1700	U
100-51-6	Benzyl alcohol	1500	U
95-50-1	1,2-Dichlorobenzene	1300	U
	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1400	U
	4-Methylphenol	1500	U
621-64-7	n-Nitroso-di-n-propylamine	1400	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1500	U
78-59-1	Isophorone	1500	U
88-75-5	2-Nitrophenol	950	U
105-67-9	2,4-Dimethylphenol	1700	U
111-91-1	bis(2-Chloroethoxy)methane	680	U
120-83-2	2,4-Dichlorophenol	900	U
65-85-0	Benzoic Acid	5700	U
120-82-1	1,2,4-Trichlorobenzene	1500	U
91-20-3	Naphthalene	1400	U
106-47-8	4-Chloroaniline	1700	U
87-68-3	Hexachlorobutadiene	1400	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1500	U
77-47-4	Hexachlorocyclopentadiene	320	U
88-06-2	2,4,6-Trichlorophenol	1100	U
	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	860	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	1400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-21

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.04

Sample wt/vol: 21.09 (g/ml) G Lab File ID: BN1372.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.42 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	990	U
51-28-5	2,4-Dinitrophenol	5700	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	2600	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	5700	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	980	U
118-74-1	Hexachlorobenzene	1500	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	5100	U
129-00-0	Pyrene	750	J
85-68-7	Butylbenzylphthalate	1400	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
218-01-9	Chrysene	740	J
117-81-7	bis(2-Ethylhexyl)phthalate	770	JB
117-84-0	Di-n-octylphthalate	1600	U
205-99-2	Benzo[b]fluoranthene	1400	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	790	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1400	U
191-24-2	Benzo[g,h,i]perylene	1400	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-21

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.04

Sample wt/vol: 21.09 (g/ml) G Lab File ID: BN1372.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.42 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-22

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: 980211 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.06

Sample wt/vol: 21.33 (g/ml) G Lab File ID: BN1373.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.17 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	94	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	88	U
65-85-0	Benzoic Acid	560	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	99	U
88-74-4	2-Nitroaniline	93	U
131-11-3	Dimethylphthalate	84	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

FIELD ID.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-22

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: 980211 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.06

Sample wt/vol: 21.33 (g/ml) G Lab File ID: BN1373.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.17 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	98	U
51-28-5	2,4-Dinitrophenol	560	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	560	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	97	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	120	
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	300	JB
206-44-0	Fluoranthene	170	
92-87-5	Benzidine	510	U
129-00-0	Pyrene	200	
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	88	J
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	160	
117-81-7	bis(2-Ethylhexyl)phthalate	110	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	60	J
207-08-9	Benzo[k]fluoranthene	100	J
50-32-8	Benzo[a]pyrene	80	J
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	63	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-22

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: 980211 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.06

Sample wt/vol: 21.33 (g/ml) G Lab File ID: BN1373.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 16.17 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.19	480	JN
2. 000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	23.02	800	JN
3. 002461-18-9	Oxirane, [(dodecyloxy)methyl]-	26.19	1700	JN
4.	unknown	27.13	690	J
5. 000124-25-4	Tetradecanal	27.18	720	JN
6. 056554-89-3	14-Octadecenal	28.53	910	JN
7. 000646-31-1	Tetracosane	28.89	1100	JN
8.	unknown	28.95	810	J
9.	unknown	29.63	710	J
10.	unknown	30.29	460	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-23

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.08

Sample wt/vol: 20.27 (g/ml) G Lab File ID: BN1374.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 20.6 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	190	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	140	U
108-95-2	Phenol	210	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	170	U
95-50-1	1,2-Dichlorobenzene	150	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	160	U
	4-Methylphenol	170	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	74	U
120-83-2	2,4-Dichlorophenol	98	U
65-85-0	Benzoic Acid	620	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	150	U
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	35	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	94	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	160	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-23

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.08

Sample wt/vol: 20.27 (g/ml) G Lab File ID: BN1374.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 20.6 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	620	U
132-64-9	Dibenzofuran	120	U
100-02-7	4-Nitrophenol	290	U
121-14-2	2,4-Dinitrotoluene	120	U
84-66-2	Diethylphthalate	130	U
86-73-7	Fluorene	68	J
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	180	U
534-52-1	4,6-Dinitro-2-methylphenol	620	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	850	
120-12-7	Anthracene	120	
84-74-2	Di-n-butylphthalate	140	JB
206-44-0	Fluoranthene	1200	
92-87-5	Benzidine	560	U
129-00-0	Pyrene	1200	
85-68-7	Butylbenzylphthalate	160	U
56-55-3	Benzo[a]anthracene	540	
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	950	
117-81-7	bis(2-Ethylhexyl)phthalate	190	B
117-84-0	Di-n-octylphthalate	180	U
205-99-2	Benzo[b]fluoranthene	490	
207-08-9	Benzo[k]fluoranthene	420	
50-32-8	Benzo[a]pyrene	550	
193-39-5	Indeno[1,2,3-cd]pyrene	330	
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	340	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-23

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.08

Sample wt/vol: 20.27 (g/ml) G Lab File ID: BN1374.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 20.6 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000544-76-3	Hexadecane	26.20	790	JN
2.	unknown	27.14	640	J
3.	unknown	27.19	1300	J
4. 056554-89-3	14-Octadecenal	28.54	950	JN
5. 000629-78-7	Heptadecane	28.90	1200	JN
6. 000112-92-5	1-Octadecanol	28.95	740	JN
7.	unknown	29.63	710	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-24

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.10

Sample wt/vol: 20.52 (g/ml) G Lab File ID: BN1375.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 17.38 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	99	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	70	U
120-83-2	2,4-Dichlorophenol	93	U
65-85-0	Benzoic Acid	590	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	160	U
77-47-4	Hexachlorocyclopentadiene	34	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	98	U
131-11-3	Dimethylphthalate	89	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-24

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.10

Sample wt/vol: 20.52 (g/ml) G Lab File ID: BN1375.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 17.38 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	590	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	270	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	590	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	80	J
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	130	JB
206-44-0	Fluoranthene	120	
92-87-5	Benzidine	530	U
129-00-0	Pyrene	150	
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	65	J
91-94-1	3,3'-Dichlorobenzidine	200	U
218-01-9	Chrysene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	B
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	68	J
207-08-9	Benzo[k]fluoranthene	81	J
50-32-8	Benzo[a]pyrene	60	J
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-24

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.10

Sample wt/vol: 20.52 (g/ml) G Lab File ID: BN1375.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 17.38 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/06/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 006624-79-9	1-Dotriacontanol	26.19	990	JN
2. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.14	900	JN
3. 000630-06-8	Hexatriacontane	27.59	920	JN
4. 000630-06-8	Hexatriacontane	28.89	720	JN
5. 001454-84-8	1-Nonadecanol	28.94	560	JN
6.	unknown	29.63	660	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-25

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.12

Sample wt/vol: 21.93 (g/ml) G Lab File ID: BN1420.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.85 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	160	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	180	U
111-44-4	bis(2-Chloroethyl)ether	110	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	110	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	140	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	110	U
108-60-1	bis(2-chloroisopropyl)ether	130	U
	4-Methylphenol	140	U
621-64-7	n-Nitroso-di-n-propylamine	130	U
67-72-1	Hexachloroethane	110	U
98-95-3	Nitrobenzene	140	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	90	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	64	U
120-83-2	2,4-Dichlorophenol	85	U
65-85-0	Benzoic Acid	540	U
120-82-1	1,2,4-Trichlorobenzene	140	U
91-20-3	Naphthalene	82	J
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	130	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	97	J
77-47-4	Hexachlorocyclopentadiene	31	U
88-06-2	2,4,6-Trichlorophenol	100	U
	2,4,5-Trichlorophenol	110	U
91-58-7	2-Chloronaphthalene	95	U
88-74-4	2-Nitroaniline	89	U
131-11-3	Dimethylphthalate	81	U
208-96-8	Acenaphthylene	480	
606-20-2	2,6-Dinitrotoluene	120	U
99-09-2	3-Nitroaniline	130	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-25

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.12

Sample wt/vol: 21.93 (g/ml) G Lab File ID: BN1420.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.85 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	94	U
51-28-5	2,4-Dinitrophenol	540	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	250	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	250	
7005-72-3	4-Chlorophenyl-phenylether	100	U
100-01-6	4-Nitroaniline	150	U
534-52-1	4,6-Dinitro-2-methylphenol	540	U
86-30-6	n-Nitrosodiphenylamine	98	U
103-33-3	Azobenzene	100	U
101-55-3	4-Bromophenyl-phenylether	93	U
118-74-1	Hexachlorobenzene	140	U
87-86-5	Pentachlorophenol	160	U
85-01-8	Phenanthrene	2100	
120-12-7	Anthracene	540	
84-74-2	Di-n-butylphthalate	99	JB
206-44-0	Fluoranthene	3700	
92-87-5	Benzidine	490	U
129-00-0	Pyrene	3800	
85-68-7	Butylbenzylphthalate	130	U
56-55-3	Benzo[a]anthracene	1900	
91-94-1	3,3'-Dichlorobenzidine	180	U
218-01-9	Chrysene	3200	
117-81-7	bis(2-Ethylhexyl)phthalate	55	JB
117-84-0	Di-n-octylphthalate	150	U
205-99-2	Benzo[b]fluoranthene	1100	
207-08-9	Benzo[k]fluoranthene	1900	
50-32-8	Benzo[a]pyrene	1900	
193-39-5	Indeno[1,2,3-cd]pyrene	890	
53-70-3	Dibenz[a,h]anthracene	620	
191-24-2	Benzo[g,h,i]perylene	1000	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-25

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.12

Sample wt/vol: 21.93 (g/ml) G Lab File ID: BN1420.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.85 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000610-48-0	Anthracene, 1-methyl-	19.59	500	JN
2. 000613-12-7	Anthracene, 2-methyl-	19.65	570	JN
3. 000203-64-5	4H-Cyclopenta[def]phenanthrene	19.83	740	JN
4. 003674-66-6	Phenanthrene, 2,5-dimethyl-	20.93	470	JN
5. 000206-44-0	Fluoranthene	21.45	530	JN
6. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.13	610	JN
7. 000192-97-2	Benzo[e]pyrene	27.57	1300	JN
8. 000295-17-0	Cyclotetradecane	28.93	550	JN
9.	unknown	29.61	530	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-26

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.14

Sample wt/vol: 21.56 (g/ml) G Lab File ID: BN1390.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	95	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	570	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	94	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-26

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.14

Sample wt/vol: 21.56 (g/ml) G Lab File ID: BN1390.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	99	U
51-28-5	2,4-Dinitrophenol	570	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	570	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	98	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	70	J
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	120	JB
206-44-0	Fluoranthene	67	J
92-87-5	Benzidine	510	U
129-00-0	Pyrene	96	J
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	99	J
117-81-7	bis(2-Ethylhexyl)phthalate	89	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	110	U
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-26

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.14

Sample wt/vol: 21.56 (g/ml) G Lab File ID: BN1390.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	460	J
2.	unknown	27.13	740	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-27

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.16

Sample wt/vol: 20.67 (g/ml) G Lab File ID: BN1391.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 15.69 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	130	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	96	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	68	U
120-83-2	2,4-Dichlorophenol	91	U
65-85-0	Benzoic Acid	570	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	160	U
77-47-4	Hexachlorocyclopentadiene	33	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	95	U
131-11-3	Dimethylphthalate	87	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-27

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.16

Sample wt/vol: 20.67 (g/ml) G Lab File ID: BN1391.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 15.69 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	570	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	570	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	99	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	110	U
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	140	JB
206-44-0	Fluoranthene	64	J
92-87-5	Benzidine	520	U
129-00-0	Pyrene	68	J
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	200	U
218-01-9	Chrysene	66	J
117-81-7	bis(2-Ethylhexyl)phthalate	93	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	110	U
193-39-5	Indeno[1,2,3-cd]pyrene	120	U
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	140	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-27

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.16

Sample wt/vol: 20.67 (g/ml) G Lab File ID: BN1391.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 15.69 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	27.13	2500	J
2.	unknown	29.62	480	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-28

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.18

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1392.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.15 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	170	U
62-75-9	N-nitroso-dimethylamine	110	U
62-53-3	Aniline	120	U
108-95-2	Phenol	190	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	160	U
100-51-6	Benzyl alcohol	150	U
95-50-1	1,2-Dichlorobenzene	130	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	140	U
	4-Methylphenol	150	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	150	U
78-59-1	Isophorone	140	U
88-75-5	2-Nitrophenol	94	U
105-67-9	2,4-Dimethylphenol	160	U
111-91-1	bis(2-Chloroethoxy)methane	67	U
120-83-2	2,4-Dichlorophenol	89	U
65-85-0	Benzoic Acid	560	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	160	U
87-68-3	Hexachlorobutadiene	140	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	150	U
77-47-4	Hexachlorocyclopentadiene	32	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	99	U
88-74-4	2-Nitroaniline	93	U
131-11-3	Dimethylphthalate	85	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	140	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-28

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.18

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1392.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.15 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	98	U
51-28-5	2,4-Dinitrophenol	560	U
132-64-9	Dibenzofuran	100	U
100-02-7	4-Nitrophenol	260	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	110	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	160	U
534-52-1	4,6-Dinitro-2-methylphenol	560	U
86-30-6	n-Nitrosodiphenylamine	100	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	97	U
118-74-1	Hexachlorobenzene	150	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	110	U
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	130	JB
206-44-0	Fluoranthene	110	U
92-87-5	Benzidine	510	U
129-00-0	Pyrene	130	U
85-68-7	Butylbenzylphthalate	140	U
56-55-3	Benzo[a]anthracene	110	U
91-94-1	3,3'-Dichlorobenzidine	190	U
218-01-9	Chrysene	140	U
117-81-7	bis(2-Ethylhexyl)phthalate	110	JB
117-84-0	Di-n-octylphthalate	160	U
205-99-2	Benzo[b]fluoranthene	140	U
207-08-9	Benzo[k]fluoranthene	100	U
50-32-8	Benzo[a]pyrene	100	U
193-39-5	Indeno[1,2,3-cd]pyrene	110	U
53-70-3	Dibenz[a,h]anthracene	130	U
191-24-2	Benzo[g,h,i]perylene	130	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-28

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.18

Sample wt/vol: 20.76 (g/ml) G Lab File ID: BN1392.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 14.15 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	450	J
2. 002461-18-9	Oxirane, [(dodecyloxy)methyl]-	26.19	480	JN
3. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.14	5300	JN
4.	unknown	29.61	590	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. B-29

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.20

Sample wt/vol: 19.89 (g/ml) G Lab File ID: BN1393.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18.12 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	130	U
95-57-8	2-Chlorophenol	120	U
541-73-1	1,3-Dichlorobenzene	130	U
106-46-7	1,4-Dichlorobenzene	180	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	130	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	150	U
67-72-1	Hexachloroethane	130	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	160	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	180	U
111-91-1	bis(2-Chloroethoxy)methane	73	U
120-83-2	2,4-Dichlorophenol	97	U
65-85-0	Benzoic Acid	610	U
120-82-1	1,2,4-Trichlorobenzene	160	U
91-20-3	Naphthalene	150	U
106-47-8	4-Chloroaniline	180	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	120	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	35	U
88-06-2	2,4,6-Trichlorophenol	120	U
	2,4,5-Trichlorophenol	130	U
91-58-7	2-Chloronaphthalene	110	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	93	U
208-96-8	Acenaphthylene	120	U
606-20-2	2,6-Dinitrotoluene	140	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-29

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.20

Sample wt/vol: 19.89 (g/ml) G Lab File ID: BN1393.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18.12 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	110	U
51-28-5	2,4-Dinitrophenol	610	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	280	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	120	U
7005-72-3	4-Chlorophenyl-phenylether	120	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	610	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	120	U
101-55-3	4-Bromophenyl-phenylether	110	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	180	U
85-01-8	Phenanthrene	120	U
120-12-7	Anthracene	120	U
84-74-2	Di-n-butylphthalate	140	JB
206-44-0	Fluoranthene	120	U
92-87-5	Benzidine	560	U
129-00-0	Pyrene	140	U
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	120	U
91-94-1	3,3'-Dichlorobenzidine	210	U
218-01-9	Chrysene	150	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	150	U
207-08-9	Benzo[k]fluoranthene	110	U
50-32-8	Benzo[a]pyrene	110	U
193-39-5	Indeno[1,2,3-cd]pyrene	130	U
53-70-3	Dibenz[a,h]anthracene	150	U
191-24-2	Benzo[g,h,i]perylene	150	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-29

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.20

Sample wt/vol: 19.89 (g/ml) G Lab File ID: BN1393.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 18.12 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	520	J
2. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.13	3100	JN
3. 000629-96-9	1-Eicosanol	28.94	540	JN
4.	unknown	29.62	630	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-30

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.22

Sample wt/vol: 19.52 (g/ml) G Lab File ID: BN1396.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 12.98 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	180	U
62-75-9	N-nitroso-dimethylamine	120	U
62-53-3	Aniline	130	U
108-95-2	Phenol	200	U
111-44-4	bis(2-Chloroethyl)ether	120	U
95-57-8	2-Chlorophenol	110	U
541-73-1	1,3-Dichlorobenzene	120	U
106-46-7	1,4-Dichlorobenzene	170	U
100-51-6	Benzyl alcohol	160	U
95-50-1	1,2-Dichlorobenzene	140	U
	2-Methylphenol	120	U
108-60-1	bis(2-chloroisopropyl)ether	150	U
	4-Methylphenol	160	U
621-64-7	n-Nitroso-di-n-propylamine	140	U
67-72-1	Hexachloroethane	120	U
98-95-3	Nitrobenzene	160	U
78-59-1	Isophorone	150	U
88-75-5	2-Nitrophenol	99	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	bis(2-Chloroethoxy)methane	70	U
120-83-2	2,4-Dichlorophenol	93	U
65-85-0	Benzoic Acid	590	U
120-82-1	1,2,4-Trichlorobenzene	150	U
91-20-3	Naphthalene	140	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	150	U
59-50-7	4-Chloro-3-methylphenol	110	U
91-57-6	2-Methylnaphthalene	160	U
77-47-4	Hexachlorocyclopentadiene	34	U
88-06-2	2,4,6-Trichlorophenol	110	U
	2,4,5-Trichlorophenol	120	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	98	U
131-11-3	Dimethylphthalate	89	U
208-96-8	Acenaphthylene	110	U
606-20-2	2,6-Dinitrotoluene	130	U
99-09-2	3-Nitroaniline	150	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-30

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.22

Sample wt/vol: 19.52 (g/ml) G Lab File ID: BN1396.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 12.98 decanted:(Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	100	U
51-28-5	2,4-Dinitrophenol	590	U
132-64-9	Dibenzofuran	110	U
100-02-7	4-Nitrophenol	270	U
121-14-2	2,4-Dinitrotoluene	110	U
84-66-2	Diethylphthalate	120	U
86-73-7	Fluorene	110	U
7005-72-3	4-Chlorophenyl-phenylether	110	U
100-01-6	4-Nitroaniline	170	U
534-52-1	4,6-Dinitro-2-methylphenol	590	U
86-30-6	n-Nitrosodiphenylamine	110	U
103-33-3	Azobenzene	110	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	160	U
87-86-5	Pentachlorophenol	170	U
85-01-8	Phenanthrene	150	
120-12-7	Anthracene	110	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	210	
92-87-5	Benzidine	530	U
129-00-0	Pyrene	240	
85-68-7	Butylbenzylphthalate	150	U
56-55-3	Benzo[a]anthracene	97	J
91-94-1	3,3'-Dichlorobenzidine	200	U
218-01-9	Chrysene	330	
117-81-7	bis(2-Ethylhexyl)phthalate	110	JB
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo[b]fluoranthene	91	J
207-08-9	Benzo[k]fluoranthene	160	
50-32-8	Benzo[a]pyrene	110	J
193-39-5	Indeno[1,2,3-cd]pyrene	75	J
53-70-3	Dibenz[a,h]anthracene	140	U
191-24-2	Benzo[g,h,i]perylene	85	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-30

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3425 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3425.22

Sample wt/vol: 19.52 (g/ml) G Lab File ID: BN1396.D

Level: (low/med) LOW Date Received: 03/23/98

% Moisture: 12.98 decanted: (Y/N) N Date Extracted: 03/24/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 12 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	730	J
2.	unknown	19.19	720	J
3.	unknown	26.18	1600	J
4. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.13	2200	JN
5. 000638-66-4	Octadecanal	27.18	2000	JN
6. 000506-52-5	1-Hexacosanol	27.60	3300	JN
7. 056554-89-3	14-Octadecenal	28.53	720	JN
8. 000646-31-1	Tetracosane	28.88	1200	JN
9.	unknown	28.94	930	J
10.	unknown	29.62	950	J
11.	unknown	29.88	570	J
12. 000112-95-8	Eicosane	30.28	520	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-31

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.02

Sample wt/vol: 11.11 (g/ml) G Lab File ID: BN1400.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.22 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	320	U
62-75-9	N-nitroso-dimethylamine	210	U
62-53-3	Aniline	230	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	220	U
106-46-7	1,4-Dichlorobenzene	310	U
100-51-6	Benzyl alcohol	290	U
95-50-1	1,2-Dichlorobenzene	250	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	290	U
621-64-7	n-Nitroso-di-n-propylamine	260	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	290	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	310	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	280	U
91-20-3	Naphthalene	260	U
106-47-8	4-Chloroaniline	310	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	290	U
77-47-4	Hexachlorocyclopentadiene	61	U
88-06-2	2,4,6-Trichlorophenol	200	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	160	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	240	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-31

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.02

Sample wt/vol: 11.11 (g/ml) G Lab File ID: BN1400.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.22 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	490	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	220	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	200	U
100-01-6	4-Nitroaniline	300	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	280	U
87-86-5	Pentachlorophenol	320	U
85-01-8	Phenanthrene	120	J
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	170	J
92-87-5	Benzidine	970	U
129-00-0	Pyrene	220	J
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	210	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	300	U
205-99-2	Benzo[b]fluoranthene	260	U
207-08-9	Benzo[k]fluoranthene	180	J
50-32-8	Benzo[a]pyrene	200	U
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-31

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.02

Sample wt/vol: 11.11 (g/ml) G Lab File ID: BN1400.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 16.22 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	1200	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.19	2200	JN
3.	unknown	26.19	2300	J
4.	unknown	27.17	1600	J
5. 000630-06-8	Hexatriacontane	27.59	3600	JN
6. 000629-97-0	Docosane	28.89	2400	JN
7. 000112-95-8	Eicosane	30.29	1300	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-32

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN1403.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 20.72 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	360	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	250	U
95-57-8	2-Chlorophenol	230	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	320	U
95-50-1	1,2-Dichlorobenzene	280	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	320	U
621-64-7	n-Nitroso-di-n-propylamine	290	U
67-72-1	Hexachloroethane	250	U
98-95-3	Nitrobenzene	320	U
78-59-1	Isophorone	300	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	310	U
91-20-3	Naphthalene	290	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	300	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	320	U
77-47-4	Hexachlorocyclopentadiene	68	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	320	
606-20-2	2,6-Dinitrotoluene	270	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-32

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN1403.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 20.72 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	550	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	120	J
86-73-7	Fluorene	230	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	230	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	310	U
87-86-5	Pentachlorophenol	350	U
85-01-8	Phenanthrene	700	
120-12-7	Anthracene	170	J
84-74-2	Di-n-butylphthalate	4300	B
206-44-0	Fluoranthene	720	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	690	
91-94-1	3,3'-Dichlorobenzidine	410	U
218-01-9	Chrysene	1300	
117-81-7	bis(2-Ethylhexyl)phthalate	630	B
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	470	
207-08-9	Benzo[k]fluoranthene	580	
50-32-8	Benzo[a]pyrene	830	
193-39-5	Indeno[1,2,3-cd]pyrene	390	
53-70-3	Dibenz[a,h]anthracene	280	U
191-24-2	Benzo[g,h,i]perylene	550	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-32

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN1403.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 20.72 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 14 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.86	1100	J
2.	000102-76-1	Triacetin	13.16	2600	JN
3.	000629-78-7	Heptadecane	17.36	1300	JN
4.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.21	11000	JN
5.	000629-92-5	Nonadecane	19.45	1000	JN
6.	000112-95-8	Eicosane	20.41	1100	JN
7.	000629-92-5	Nonadecane	21.35	1500	JN
8.	000112-95-8	Eicosane	23.08	1400	JN
9.	000629-78-7	Heptadecane	26.19	1700	JN
10.		unknown	27.13	2300	J
11.	000638-66-4	Octadecanal	27.18	2000	JN
12.	000629-94-7	Heneicosane	28.89	4800	JN
13.	000057-88-5	Cholesterol	29.21	2200	JN
14.	000629-94-7	Heneicosane	30.29	1800	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-33

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN1418.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.99 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	360	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	260	U
95-57-8	2-Chlorophenol	230	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	320	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	250	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	320	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	260	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	310	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	320	U
91-20-3	Naphthalene	300	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	300	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	69	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	260	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	280	
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-33

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN1418.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.99 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	230	U
100-02-7	4-Nitrophenol	560	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	230	U
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	230	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	320	U
87-86-5	Pentachlorophenol	360	U
85-01-8	Phenanthrene	580	
120-12-7	Anthracene	160	J
84-74-2	Di-n-butylphthalate	790	JB
206-44-0	Fluoranthene	800	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1500	
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	700	
91-94-1	3,3'-Dichlorobenzidine	420	U
218-01-9	Chrysene	1400	
117-81-7	bis(2-Ethylhexyl)phthalate	360	B
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	380	
207-08-9	Benzo[k]fluoranthene	750	
50-32-8	Benzo[a]pyrene	840	
193-39-5	Indeno[1,2,3-cd]pyrene	470	
53-70-3	Dibenz[a,h]anthracene	290	U
191-24-2	Benzo[g,h,i]perylene	600	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-33

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN1418.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.99 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.87	1400	J
2.	unknown	19.19	1200	J
3. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	27.12	1200	JN
4. 000544-76-3	Hexadecane	27.58	3200	JN
5. 000646-31-1	Tetracosane	28.87	1700	JN
6.	unknown	28.93	1300	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-34

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.08

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN1419.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	360	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	250	U
95-57-8	2-Chlorophenol	230	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	320	U
95-50-1	1,2-Dichlorobenzene	280	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	320	U
621-64-7	n-Nitroso-di-n-propylamine	290	U
67-72-1	Hexachloroethane	250	U
98-95-3	Nitrobenzene	320	U
78-59-1	Isophorone	310	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	310	U
91-20-3	Naphthalene	290	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	300	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	68	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	230	U
606-20-2	2,6-Dinitrotoluene	270	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. B-34

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.08

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN1419.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	550	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	240	U
86-73-7	Fluorene	230	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	230	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	320	U
87-86-5	Pentachlorophenol	350	U
85-01-8	Phenanthrene	800	
120-12-7	Anthracene	190	J
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	1100	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	450	
91-94-1	3,3'-Dichlorobenzidine	410	U
218-01-9	Chrysene	910	
117-81-7	bis(2-Ethylhexyl)phthalate	300	JB
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	340	
207-08-9	Benzo[k]fluoranthene	590	
50-32-8	Benzo[a]pyrene	510	
193-39-5	Indeno[1,2,3-cd]pyrene	320	
53-70-3	Dibenz[a,h]anthracene	290	U
191-24-2	Benzo[g,h,i]perylene	350	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-34

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.08

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN1419.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 18 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/08/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 019047-85-9	Phosphonic acid, dioctadecyl est	28.93	1500	JN
2.	unknown	4.86	1300	J
3.	unknown	16.24	960	J
4.	unknown	19.19	1800	J
5.	unknown	27.12	1200	J
6.	unknown	27.17	960	J
7. 000544-76-3	Hexadecane	27.57	3500	JN
8. 000646-31-1	Tetracosane	28.87	2000	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-35

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.10

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN1408.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.88 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	350	U
62-75-9	N-nitroso-dimethylamine	230	U
62-53-3	Aniline	250	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	240	U
95-57-8	2-Chlorophenol	220	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	310	U
95-50-1	1,2-Dichlorobenzene	270	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	290	U
	4-Methylphenol	310	U
621-64-7	n-Nitroso-di-n-propylamine	280	U
67-72-1	Hexachloroethane	240	U
98-95-3	Nitrobenzene	310	U
78-59-1	Isophorone	300	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	300	U
91-20-3	Naphthalene	280	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	290	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	320	U
77-47-4	Hexachlorocyclopentadiene	66	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	240	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	220	U
606-20-2	2,6-Dinitrotoluene	260	U
99-09-2	3-Nitroaniline	290	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-35

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.10

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN1408.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.88 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	530	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	240	U
86-73-7	Fluorene	220	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	210	U
103-33-3	Azobenzene	220	U
101-55-3	4-Bromophenyl-phenylether	200	U
118-74-1	Hexachlorobenzene	310	U
87-86-5	Pentachlorophenol	340	U
85-01-8	Phenanthrene	170	J
120-12-7	Anthracene	220	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	320	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	440	
85-68-7	Butylbenzylphthalate	290	U
56-55-3	Benzo[a]anthracene	200	J
91-94-1	3,3'-Dichlorobenzidine	400	U
218-01-9	Chrysene	450	
117-81-7	bis(2-Ethylhexyl)phthalate	510	B
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo[b]fluoranthene	150	J
207-08-9	Benzo[k]fluoranthene	250	
50-32-8	Benzo[a]pyrene	250	
193-39-5	Indeno[1,2,3-cd]pyrene	160	J
53-70-3	Dibenz[a,h]anthracene	280	U
191-24-2	Benzo[g,h,i]perylene	280	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-35

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.10

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN1408.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.88 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1300	J
2.	unknown	16.25	960	J
3. 000084-78-6	1,2-Benzenedicarboxylic acid, bu	19.20	2600	JN
4. 015965-99-8	Oxirane, [(hexadecyloxy)methyl]-	26.19	1100	JN
5.	unknown	27.13	1500	J
6.	unknown	27.18	1200	J
7. 000630-06-8	Hexatriacontane	27.60	4000	JN
8. 000112-95-8	Eicosane	28.89	2300	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-36

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.12

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN1409.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 7.03 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	320	U
62-75-9	N-nitroso-dimethylamine	210	U
62-53-3	Aniline	230	U
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	220	U
95-57-8	2-Chlorophenol	200	U
541-73-1	1,3-Dichlorobenzene	220	U
106-46-7	1,4-Dichlorobenzene	310	U
100-51-6	Benzyl alcohol	280	U
95-50-1	1,2-Dichlorobenzene	250	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	280	U
621-64-7	n-Nitroso-di-n-propylamine	260	U
67-72-1	Hexachloroethane	220	U
98-95-3	Nitrobenzene	280	U
78-59-1	Isophorone	270	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	310	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	280	U
91-20-3	Naphthalene	260	U
106-47-8	4-Chloroaniline	310	U
87-68-3	Hexachlorobutadiene	260	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	290	U
77-47-4	Hexachlorocyclopentadiene	61	U
88-06-2	2,4,6-Trichlorophenol	200	U
	2,4,5-Trichlorophenol	220	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	160	U
208-96-8	Acenaphthylene	200	U
606-20-2	2,6-Dinitrotoluene	240	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-36

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.12

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN1409.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 7.03 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	490	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	220	U
86-73-7	Fluorene	200	U
7005-72-3	4-Chlorophenyl-phenylether	200	U
100-01-6	4-Nitroaniline	300	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	190	U
103-33-3	Azobenzene	200	U
101-55-3	4-Bromophenyl-phenylether	180	U
118-74-1	Hexachlorobenzene	280	U
87-86-5	Pentachlorophenol	310	U
85-01-8	Phenanthrene	210	U
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	590	JB
206-44-0	Fluoranthene	210	U
92-87-5	Benzidine	960	U
129-00-0	Pyrene	240	U
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	210	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	270	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	300	U
205-99-2	Benzo[b]fluoranthene	260	U
207-08-9	Benzo[k]fluoranthene	190	U
50-32-8	Benzo[a]pyrene	200	U
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	250	U
191-24-2	Benzo[g,h,i]perylene	250	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-36

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.12

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN1409.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 7.03 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1200	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.20	1000	JN
3. 000630-06-8	Hexatriacontane	27.58	920	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-37

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.14

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN1410.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 25.29 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	370	U
62-75-9	N-nitroso-dimethylamine	250	U
62-53-3	Aniline	270	U
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	260	U
95-57-8	2-Chlorophenol	240	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	250	U
108-60-1	bis(2-chloroisopropyl)ether	310	U
	4-Methylphenol	330	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	260	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	320	U
88-75-5	2-Nitrophenol	210	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	150	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	320	U
91-20-3	Naphthalene	300	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	310	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	70	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	260	U
91-58-7	2-Chloronaphthalene	220	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	190	U
208-96-8	Acenaphthylene	240	U
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	310	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-37

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.14

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN1410.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 25.29 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	220	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	230	U
100-02-7	4-Nitrophenol	570	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	240	U
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	350	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	230	U
103-33-3	Azobenzene	240	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	360	U
85-01-8	Phenanthrene	240	U
120-12-7	Anthracene	240	U
84-74-2	Di-n-butylphthalate	720	JB
206-44-0	Fluoranthene	240	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	280	U
85-68-7	Butylbenzylphthalate	310	U
56-55-3	Benzo[a]anthracene	240	U
91-94-1	3,3'-Dichlorobenzidine	420	U
218-01-9	Chrysene	310	U
117-81-7	bis(2-Ethylhexyl)phthalate	320	JB
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	300	U
207-08-9	Benzo[k]fluoranthene	220	U
50-32-8	Benzo[a]pyrene	230	U
193-39-5	Indeno[1,2,3-cd]pyrene	250	U
53-70-3	Dibenz[a,h]anthracene	290	U
191-24-2	Benzo[g,h,i]perylene	290	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-37

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.14

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN1410.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 25.29 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1300	J
2. 000084-74-2	Dibutyl phthalate	19.20	1300	JN
3.	unknown	27.14	1200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-38

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.16

Sample wt/vol: 10.89 (g/ml) G Lab File ID: BN1411.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.19 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	330	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	320	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	280	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	270	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	300	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	320	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	290	U
91-20-3	Naphthalene	270	U
106-47-8	4-Chloroaniline	320	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	300	U
77-47-4	Hexachlorocyclopentadiene	63	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	280	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-38

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.16

Sample wt/vol: 10.89 (g/ml) G Lab File ID: BN1411.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.19 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	510	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	310	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	290	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	2200	B
206-44-0	Fluoranthene	160	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	180	J
85-68-7	Butylbenzylphthalate	280	U
56-55-3	Benzo[a]anthracene	220	U
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	410	B
117-84-0	Di-n-octylphthalate	310	U
205-99-2	Benzo[b]fluoranthene	270	U
207-08-9	Benzo[k]fluoranthene	170	J
50-32-8	Benzo[a]pyrene	210	U
193-39-5	Indeno[1,2,3-cd]pyrene	230	U
53-70-3	Dibenz[a,h]anthracene	270	U
191-24-2	Benzo[g,h,i]perylene	270	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-38

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.16

Sample wt/vol: 10.89 (g/ml) G Lab File ID: BN1411.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 17.19 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 4 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1300	J
2.	unknown	19.20	3700	J
3. 000638-68-6	Triacontane	27.59	2000	JN
4. 000630-06-8	Hexatriacontane	28.89	1400	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-39

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.18

Sample wt/vol: 10.53 (g/ml) G Lab File ID: BN1412.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 14.34 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	330	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	320	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	280	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	270	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	300	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	320	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	290	U
91-20-3	Naphthalene	270	U
106-47-8	4-Chloroaniline	320	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	300	U
77-47-4	Hexachlorocyclopentadiene	63	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	280	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-39

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.18

Sample wt/vol: 10.53 (g/ml) G Lab File ID: BN1412.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 14.34 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	510	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	310	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	290	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	210	U
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	660	JB
206-44-0	Fluoranthene	220	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	250	U
85-68-7	Butylbenzylphthalate	280	U
56-55-3	Benzo[a]anthracene	220	U
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	110	J
117-81-7	bis(2-Ethylhexyl)phthalate	660	B
117-84-0	Di-n-octylphthalate	310	U
205-99-2	Benzo[b]fluoranthene	270	U
207-08-9	Benzo[k]fluoranthene	200	U
50-32-8	Benzo[a]pyrene	210	U
193-39-5	Indeno[1,2,3-cd]pyrene	230	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-39

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.18

Sample wt/vol: 10.53 (g/ml) G Lab File ID: BN1412.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 14.34 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1200	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.20	1100	JN
3.	unknown	27.14	3700	J
4. 000629-94-7	Heneicosane	27.59	2300	JN
5. 000630-06-8	Hexatriacontane	28.89	2200	JN
6.	unknown hydrocarbon	30.29	950	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-40

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN1413.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.54 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	330	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	280	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	270	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	300	U
78-59-1	Isophorone	290	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	290	U
91-20-3	Naphthalene	270	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	300	U
77-47-4	Hexachlorocyclopentadiene	64	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	280	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-40

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN1413.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.54 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	510	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	310	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	290	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	220	
120-12-7	Anthracene	220	U
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	390	
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	470	
85-68-7	Butylbenzylphthalate	280	U
56-55-3	Benzo[a]anthracene	220	
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	530	
117-81-7	bis(2-Ethylhexyl)phthalate	340	B
117-84-0	Di-n-octylphthalate	310	U
205-99-2	Benzo[b]fluoranthene	210	J
207-08-9	Benzo[k]fluoranthene	330	
50-32-8	Benzo[a]pyrene	300	
193-39-5	Indeno[1,2,3-cd]pyrene	190	J
53-70-3	Dibenz[a,h]anthracene	270	U
191-24-2	Benzo[g,h,i]perylene	270	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-40

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN1413.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.54 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1500	J
2.	unknown	16.25	920	J
3.	unknown	19.20	2600	J
4. 056554-90-6	13-Octadecenal	27.18	3000	JN
5. 001454-84-8	1-Nonadecanol	27.61	4900	JN
6. 056554-91-7	12-Octadecenal	28.54	1200	JN
7. 007098-22-8	Tetratetracontane	28.89	2700	JN
8. 000630-06-8	Hexatriacontane	30.29	1300	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-41

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.22

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1414.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.27 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	330	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	320	U
100-51-6	Benzyl alcohol	290	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	290	U
621-64-7	n-Nitroso-di-n-propylamine	270	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	290	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	320	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	290	U
91-20-3	Naphthalene	270	U
106-47-8	4-Chloroaniline	320	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	300	U
77-47-4	Hexachlorocyclopentadiene	62	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-41

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.22

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1414.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.27 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	500	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	220	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	310	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	290	U
87-86-5	Pentachlorophenol	320	U
85-01-8	Phenanthrene	220	
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	670	JB
206-44-0	Fluoranthene	230	
92-87-5	Benzidine	990	U
129-00-0	Pyrene	300	
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	130	J
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	380	
117-81-7	bis(2-Ethylhexyl)phthalate	350	B
117-84-0	Di-n-octylphthalate	310	U
205-99-2	Benzo[b]fluoranthene	110	J
207-08-9	Benzo[k]fluoranthene	210	
50-32-8	Benzo[a]pyrene	130	J
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-41

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3428 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3428.22

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1414.D

Level: (low/med) LOW Date Received: 03/24/98

% Moisture: 15.27 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/07/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.86	1400	J
2.	unknown	19.19	1200	J
3.	unknown	27.18	2600	J
4. 006624-79-9	1-Dotriacontanol	27.60	3200	JN
5. 056554-89-3	14-Octadecenal	28.54	890	JN
6. 000544-85-4	Dotriacontane	28.89	2000	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-42

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.02

Sample wt/vol: 10.35 (g/ml) G Lab File ID: BN1441.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.83 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	340	U
62-75-9	N-nitroso-dimethylamine	230	U
62-53-3	Aniline	250	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	240	U
95-57-8	2-Chlorophenol	220	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	270	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	280	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	280	U
67-72-1	Hexachloroethane	240	U
98-95-3	Nitrobenzene	300	U
78-59-1	Isophorone	290	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	300	U
91-20-3	Naphthalene	280	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	310	U
77-47-4	Hexachlorocyclopentadiene	65	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	240	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	220	U
606-20-2	2,6-Dinitrotoluene	260	U
99-09-2	3-Nitroaniline	280	U

1C

FIELD ID.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-42

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.02

Sample wt/vol: 10.35 (g/ml) G Lab File ID: BN1441.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.83 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	520	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	220	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	320	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	210	U
103-33-3	Azobenzene	220	U
101-55-3	4-Bromophenyl-phenylether	200	U
118-74-1	Hexachlorobenzene	300	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	720	
120-12-7	Anthracene	120	J
84-74-2	Di-n-butylphthalate	560	JB
206-44-0	Fluoranthene	1600	
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1500	
85-68-7	Butylbenzylphthalate	280	U
56-55-3	Benzo[a]anthracene	690	
91-94-1	3,3'-Dichlorobenzidine	390	U
218-01-9	Chrysene	1800	
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	320	U
205-99-2	Benzo[b]fluoranthene	840	
207-08-9	Benzo[k]fluoranthene	990	
50-32-8	Benzo[a]pyrene	1000	
193-39-5	Indeno[1,2,3-cd]pyrene	560	
53-70-3	Dibenz[a,h]anthracene	390	
191-24-2	Benzo[g,h,i]perylene	550	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-42

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.02

Sample wt/vol: 10.35 (g/ml) G Lab File ID: BN1441.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.83 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	1100	J
2. 004602-84-0	2,6,10-Dodecatrien-1-ol, 3,7,11-tr	27.11	1400	JN
3.	unknown hydrocarbon	27.57	2300	J
4. 000630-06-8	Hexatriacontane	28.87	1400	JN
5. 000629-96-9	1-Eicosanol	28.93	1100	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-43

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.04

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN1429.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 16.02 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	350	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	250	U
95-57-8	2-Chlorophenol	220	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	310	U
95-50-1	1,2-Dichlorobenzene	280	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	310	U
621-64-7	n-Nitroso-di-n-propylamine	290	U
67-72-1	Hexachloroethane	250	U
98-95-3	Nitrobenzene	320	U
78-59-1	Isophorone	300	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	310	U
91-20-3	Naphthalene	290	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	290	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	320	U
77-47-4	Hexachlorocyclopentadiene	67	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	230	U
606-20-2	2,6-Dinitrotoluene	270	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-43

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.04

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN1429.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 16.02 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	540	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	240	U
86-73-7	Fluorene	220	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	220	U
101-55-3	4-Bromophenyl-phenylether	200	U
118-74-1	Hexachlorobenzene	310	U
87-86-5	Pentachlorophenol	350	U
85-01-8	Phenanthrene	230	U
120-12-7	Anthracene	230	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	290	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	290	
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	330	
91-94-1	3,3'-Dichlorobenzidine	400	U
218-01-9	Chrysene	820	
117-81-7	bis(2-Ethylhexyl)phthalate	420	B
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo[b]fluoranthene	470	
207-08-9	Benzo[k]fluoranthene	670	
50-32-8	Benzo[a]pyrene	350	
193-39-5	Indeno[1,2,3-cd]pyrene	240	U
53-70-3	Dibenz[a,h]anthracene	280	U
191-24-2	Benzo[g,h,i]perylene	280	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-43

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.04

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN1429.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 16.02 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	1600	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.18	2600	JN
3.	unknown	27.12	5200	J
4. 000593-45-3	Octadecane	27.57	4500	JN
5. 002765-11-9	Pentadecanal-	28.52	1100	JN
6. 007098-22-8	Tetratetracontane	28.87	3200	JN
7.	unknown	29.88	1100	J
8.	unknown	30.28	2200	J
9.	unknown	30.71	1300	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.06

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN1442.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.49 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	330	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	230	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	280	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	270	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	300	U
78-59-1	Isophorone	290	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	290	U
91-20-3	Naphthalene	270	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	310	U
77-47-4	Hexachlorocyclopentadiene	64	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	260	U
99-09-2	3-Nitroaniline	280	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.06

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN1442.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.49 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	510	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	320	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	300	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	320	
120-12-7	Anthracene	220	U
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	580	
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	530	
85-68-7	Butylbenzylphthalate	280	U
56-55-3	Benzo[a]anthracene	240	
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	530	
117-81-7	bis(2-Ethylhexyl)phthalate	140	JB
117-84-0	Di-n-octylphthalate	320	U
205-99-2	Benzo[b]fluoranthene	160	J
207-08-9	Benzo[k]fluoranthene	350	
50-32-8	Benzo[a]pyrene	300	
193-39-5	Indeno[1,2,3-cd]pyrene	190	J
53-70-3	Dibenz[a,h]anthracene	270	U
191-24-2	Benzo[g,h,i]perylene	270	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-44

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.06

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN1442.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.49 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	1300	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.18	2100	JN
3. 000638-66-4	Octadecanal	27.16	990	JN
4. 000630-06-8	Hexatriacontane	27.57	2400	JN
5. 000112-95-8	Eicosane	28.87	1500	JN
6.	unknown	28.93	1300	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.08

Sample wt/vol: 10.32 (g/ml) G Lab File ID: BN1431.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 18.59 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	360	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	250	U
95-57-8	2-Chlorophenol	230	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	320	U
95-50-1	1,2-Dichlorobenzene	280	U
	2-Methylphenol	240	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	320	U
621-64-7	n-Nitroso-di-n-propylamine	290	U
67-72-1	Hexachloroethane	250	U
98-95-3	Nitrobenzene	320	U
78-59-1	Isophorone	300	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	310	U
91-20-3	Naphthalene	290	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	300	U
59-50-7	4-Chloro-3-methylphenol	230	U
91-57-6	2-Methylnaphthalene	320	U
77-47-4	Hexachlorocyclopentadiene	68	U
88-06-2	2,4,6-Trichlorophenol	220	U
	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	230	U
606-20-2	2,6-Dinitrotoluene	270	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.08

Sample wt/vol: 10.32 (g/ml) G Lab File ID: BN1431.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 18.59 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	220	U
100-02-7	4-Nitrophenol	550	U
121-14-2	2,4-Dinitrotoluene	220	U
84-66-2	Diethylphthalate	240	U
86-73-7	Fluorene	230	U
7005-72-3	4-Chlorophenyl-phenylether	220	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	230	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	310	U
87-86-5	Pentachlorophenol	350	U
85-01-8	Phenanthrene	200	J
120-12-7	Anthracene	230	U
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	180	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	260	J
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	230	U
91-94-1	3,3'-Dichlorobenzidine	410	U
218-01-9	Chrysene	300	U
117-81-7	bis(2-Ethylhexyl)phthalate	170	JB
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	290	U
207-08-9	Benzo[k]fluoranthene	160	J
50-32-8	Benzo[a]pyrene	220	U
193-39-5	Indeno[1,2,3-cd]pyrene	240	U
53-70-3	Dibenz[a,h]anthracene	280	U
191-24-2	Benzo[g,h,i]perylene	280	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-45

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.08

Sample wt/vol: 10.32 (g/ml) G Lab File ID: BN1431.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 18.59 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	1400	J
2.	unknown	19.18	2600	J
3. 000630-06-8	Hexatriacontane	27.57	1200	JN
4.	unknown	28.94	980	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-46

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.10

Sample wt/vol: 10.98 (g/ml) G Lab File ID: BN1432.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	320	U
62-75-9	N-nitroso-dimethylamine	210	U
62-53-3	Aniline	230	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	220	U
106-46-7	1,4-Dichlorobenzene	310	U
100-51-6	Benzyl alcohol	290	U
95-50-1	1,2-Dichlorobenzene	250	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	290	U
621-64-7	n-Nitroso-di-n-propylamine	260	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	290	U
78-59-1	Isophorone	270	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	310	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	280	U
91-20-3	Naphthalene	260	U
106-47-8	4-Chloroaniline	310	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	290	U
77-47-4	Hexachlorocyclopentadiene	61	U
88-06-2	2,4,6-Trichlorophenol	200	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	160	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	240	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-46

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.10

Sample wt/vol: 10.98 (g/ml) G Lab File ID: BN1432.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	490	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	220	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	200	U
100-01-6	4-Nitroaniline	300	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	280	U
87-86-5	Pentachlorophenol	320	U
85-01-8	Phenanthrene	210	U
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	1100	B
206-44-0	Fluoranthene	210	U
92-87-5	Benzidine	970	U
129-00-0	Pyrene	240	U
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	210	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	270	U
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	300	U
205-99-2	Benzo[b]fluoranthene	260	U
207-08-9	Benzo[k]fluoranthene	200	U
50-32-8	Benzo[a]pyrene	200	U
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-46

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.10

Sample wt/vol: 10.98 (g/ml) G Lab File ID: BN1432.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.18 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/09/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.85	1200	J
2.	unknown	19.19	2300	J
3.	unknown	27.12	860	J

1B

FIELD ID.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-47

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.12

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1452.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.02 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	320	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	220	U
106-46-7	1,4-Dichlorobenzene	320	U
100-51-6	Benzyl alcohol	290	U
95-50-1	1,2-Dichlorobenzene	250	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	290	U
621-64-7	n-Nitroso-di-n-propylamine	260	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	290	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	320	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	280	U
91-20-3	Naphthalene	260	U
106-47-8	4-Chloroaniline	320	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	290	U
77-47-4	Hexachlorocyclopentadiene	61	U
88-06-2	2,4,6-Trichlorophenol	200	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	160	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-47

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.12

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1452.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.02 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	500	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	220	U
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	200	U
100-01-6	4-Nitroaniline	300	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	280	U
87-86-5	Pentachlorophenol	320	U
85-01-8	Phenanthrene	170	J
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	2100	B
206-44-0	Fluoranthene	210	J
92-87-5	Benzidine	980	U
129-00-0	Pyrene	230	J
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	210	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	270	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	300	U
205-99-2	Benzo[b]fluoranthene	120	J
207-08-9	Benzo[k]fluoranthene	140	J
50-32-8	Benzo[a]pyrene	200	U
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-47

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.12

Sample wt/vol: 10.78 (g/ml) G Lab File ID: BN1452.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 14.02 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	1400	J
2.	unknown	13.21	860	J
3.	unknown	17.72	2100	J
4.	unknown	17.86	1900	J
5. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.18	4000	JN
6. 000000-00-0	1-Hexacosanal	27.16	900	JN
7. 006624-79-9	1-Dotriacontanol	27.59	2000	JN
8. 000112-95-8	Eicosane	28.87	1100	JN
9. 001454-85-9	1-Heptadecanol	28.93	1500	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-48

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.14

Sample wt/vol: 10.41 (g/ml) G Lab File ID: BN1443.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 11.18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	320	U
62-75-9	N-nitroso-dimethylamine	220	U
62-53-3	Aniline	240	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	230	U
95-57-8	2-Chlorophenol	210	U
541-73-1	1,3-Dichlorobenzene	220	U
106-46-7	1,4-Dichlorobenzene	320	U
100-51-6	Benzyl alcohol	290	U
95-50-1	1,2-Dichlorobenzene	260	U
	2-Methylphenol	220	U
108-60-1	bis(2-chloroisopropyl)ether	270	U
	4-Methylphenol	290	U
621-64-7	n-Nitroso-di-n-propylamine	260	U
67-72-1	Hexachloroethane	230	U
98-95-3	Nitrobenzene	290	U
78-59-1	Isophorone	280	U
88-75-5	2-Nitrophenol	180	U
105-67-9	2,4-Dimethylphenol	320	U
111-91-1	bis(2-Chloroethoxy)methane	130	U
120-83-2	2,4-Dichlorophenol	170	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	280	U
91-20-3	Naphthalene	260	U
106-47-8	4-Chloroaniline	320	U
87-68-3	Hexachlorobutadiene	270	U
59-50-7	4-Chloro-3-methylphenol	210	U
91-57-6	2-Methylnaphthalene	300	U
77-47-4	Hexachlorocyclopentadiene	62	U
88-06-2	2,4,6-Trichlorophenol	200	U
	2,4,5-Trichlorophenol	230	U
91-58-7	2-Chloronaphthalene	190	U
88-74-4	2-Nitroaniline	180	U
131-11-3	Dimethylphthalate	160	U
208-96-8	Acenaphthylene	210	U
606-20-2	2,6-Dinitrotoluene	250	U
99-09-2	3-Nitroaniline	270	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-48

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.14

Sample wt/vol: 10.41 (g/ml) G Lab File ID: BN1443.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 11.18 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	200	U
100-02-7	4-Nitrophenol	500	U
121-14-2	2,4-Dinitrotoluene	200	U
84-66-2	Diethylphthalate	140	J
86-73-7	Fluorene	210	U
7005-72-3	4-Chlorophenyl-phenylether	200	U
100-01-6	4-Nitroaniline	300	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	200	U
103-33-3	Azobenzene	210	U
101-55-3	4-Bromophenyl-phenylether	190	U
118-74-1	Hexachlorobenzene	290	U
87-86-5	Pentachlorophenol	320	U
85-01-8	Phenanthrene	210	U
120-12-7	Anthracene	210	U
84-74-2	Di-n-butylphthalate	2000	B
206-44-0	Fluoranthene	140	J
92-87-5	Benzidine	980	U
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	270	U
56-55-3	Benzo[a]anthracene	210	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	170	JB
117-84-0	Di-n-octylphthalate	300	U
205-99-2	Benzo[b]fluoranthene	260	U
207-08-9	Benzo[k]fluoranthene	200	U
50-32-8	Benzo[a]pyrene	200	U
193-39-5	Indeno[1,2,3-cd]pyrene	220	U
53-70-3	Dibenz[a,h]anthracene	260	U
191-24-2	Benzo[g,h,i]perylene	260	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-48

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.14

Sample wt/vol: 10.41 (g/ml) G Lab File ID: BN1443.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 11.18 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	1300	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.18	3500	JN
3. 000124-25-4	Tetradecanal	27.16	1200	JN
4.	unknown	27.58	4400	J
5. 007098-22-8	Tetratetracontane	28.87	3300	JN
6.	unknown	28.93	1600	J
7. 000646-31-1	Tetracosane	30.27	2100	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-49

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.16

Sample wt/vol: 11.68 (g/ml) G Lab File ID: BN1444.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.86 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	300	U
62-75-9	N-nitroso-dimethylamine	200	U
62-53-3	Aniline	220	U
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	210	U
95-57-8	2-Chlorophenol	190	U
541-73-1	1,3-Dichlorobenzene	210	U
106-46-7	1,4-Dichlorobenzene	300	U
100-51-6	Benzyl alcohol	270	U
95-50-1	1,2-Dichlorobenzene	240	U
	2-Methylphenol	210	U
108-60-1	bis(2-chloroisopropyl)ether	260	U
	4-Methylphenol	270	U
621-64-7	n-Nitroso-di-n-propylamine	250	U
67-72-1	Hexachloroethane	210	U
98-95-3	Nitrobenzene	270	U
78-59-1	Isophorone	260	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	300	U
111-91-1	bis(2-Chloroethoxy)methane	120	U
120-83-2	2,4-Dichlorophenol	160	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	270	U
91-20-3	Naphthalene	250	U
106-47-8	4-Chloroaniline	300	U
87-68-3	Hexachlorobutadiene	250	U
59-50-7	4-Chloro-3-methylphenol	200	U
91-57-6	2-Methylnaphthalene	280	U
77-47-4	Hexachlorocyclopentadiene	58	U
88-06-2	2,4,6-Trichlorophenol	190	U
	2,4,5-Trichlorophenol	210	U
91-58-7	2-Chloronaphthalene	180	U
88-74-4	2-Nitroaniline	170	U
131-11-3	Dimethylphthalate	150	U
208-96-8	Acenaphthylene	200	U
606-20-2	2,6-Dinitrotoluene	230	U
99-09-2	3-Nitroaniline	260	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-49

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.16

Sample wt/vol: 11.68 (g/ml) G Lab File ID: BN1444.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.86 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	180	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	190	U
100-02-7	4-Nitrophenol	470	U
121-14-2	2,4-Dinitrotoluene	190	U
84-66-2	Diethylphthalate	210	U
86-73-7	Fluorene	190	U
7005-72-3	4-Chlorophenyl-phenylether	190	U
100-01-6	4-Nitroaniline	290	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	190	U
103-33-3	Azobenzene	190	U
101-55-3	4-Bromophenyl-phenylether	180	U
118-74-1	Hexachlorobenzene	270	U
87-86-5	Pentachlorophenol	300	U
85-01-8	Phenanthrene	200	U
120-12-7	Anthracene	200	U
84-74-2	Di-n-butylphthalate	400	JB
206-44-0	Fluoranthene	200	U
92-87-5	Benzidine	920	U
129-00-0	Pyrene	230	U
85-68-7	Butylbenzylphthalate	260	U
56-55-3	Benzo[a]anthracene	200	U
91-94-1	3,3'-Dichlorobenzidine	350	U
218-01-9	Chrysene	260	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	U
117-84-0	Di-n-octylphthalate	290	U
205-99-2	Benzo[b]fluoranthene	250	U
207-08-9	Benzo[k]fluoranthene	190	U
50-32-8	Benzo[a]pyrene	190	U
193-39-5	Indeno[1,2,3-cd]pyrene	210	U
53-70-3	Dibenz[a,h]anthracene	240	U
191-24-2	Benzo[g,h,i]perylene	240	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-49

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.16

Sample wt/vol: 11.68 (g/ml) G Lab File ID: BN1444.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 15.86 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000638-66-4	Octadecanal	27.16	1000	JN
2. 007098-22-8	Tetratetracontane	27.57	2300	JN
3. 000646-31-1	Tetracosane	28.87	1800	JN
4. 006971-40-0	17-Pentatriacontene	28.93	830	JN
5. 000630-02-4	Octacosane	30.27	1000	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-50

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.18

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN1445.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 17.49 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	360	U
62-75-9	N-nitroso-dimethylamine	240	U
62-53-3	Aniline	260	U
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	250	U
95-57-8	2-Chlorophenol	230	U
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	320	U
95-50-1	1,2-Dichlorobenzene	290	U
	2-Methylphenol	250	U
108-60-1	bis(2-chloroisopropyl)ether	300	U
	4-Methylphenol	320	U
621-64-7	n-Nitroso-di-n-propylamine	300	U
67-72-1	Hexachloroethane	250	U
98-95-3	Nitrobenzene	320	U
78-59-1	Isophorone	310	U
88-75-5	2-Nitrophenol	200	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	190	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	320	U
91-20-3	Naphthalene	300	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	300	U
59-50-7	4-Chloro-3-methylphenol	240	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	69	U
88-06-2	2,4,6-Trichlorophenol	230	U
	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	210	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	180	U
208-96-8	Acenaphthylene	230	U
606-20-2	2,6-Dinitrotoluene	280	U
99-09-2	3-Nitroaniline	300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-50

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.18

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN1445.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 17.49 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	210	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	230	U
100-02-7	4-Nitrophenol	560	U
121-14-2	2,4-Dinitrotoluene	230	U
84-66-2	Diethylphthalate	250	U
86-73-7	Fluorene	230	U
7005-72-3	4-Chlorophenyl-phenylether	230	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	220	U
103-33-3	Azobenzene	230	U
101-55-3	4-Bromophenyl-phenylether	210	U
118-74-1	Hexachlorobenzene	320	U
87-86-5	Pentachlorophenol	360	U
85-01-8	Phenanthrene	230	U
120-12-7	Anthracene	230	U
84-74-2	Di-n-butylphthalate	960	JB
206-44-0	Fluoranthene	160	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	160	J
85-68-7	Butylbenzylphthalate	300	U
56-55-3	Benzo[a]anthracene	240	U
91-94-1	3,3'-Dichlorobenzidine	420	U
218-01-9	Chrysene	180	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	300	U
207-08-9	Benzo[k]fluoranthene	220	U
50-32-8	Benzo[a]pyrene	230	U
193-39-5	Indeno[1,2,3-cd]pyrene	250	U
53-70-3	Dibenz[a,h]anthracene	290	U
191-24-2	Benzo[g,h,i]perylene	290	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-50

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.18

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN1445.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 17.49 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 14 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	19.18	1700	JN
2.	unknown	27.12	1700	J
3.	unknown	27.16	3800	J
4. 000112-88-9	1-Octadecene	27.58	9800	JN
5. 007390-81-0	Oxirane, hexadecyl-	28.52	2300	JN
6. 007098-22-8	Tetratetracontane	28.87	6000	JN
7. 000629-96-9	1-Eicosanol	28.93	5000	JN
8.	unknown	29.04	1900	J
9. 000057-88-5	Cholesterol	29.20	25000	JN
10.	unknown	29.53	1300	J
11.	unknown	29.61	1800	J
12.	unknown	29.88	2200	J
13. 004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	29.97	2300	JN
14.	unknown	30.51	1500	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-51

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.20

Sample wt/vol: 10.03 (g/ml) G Lab File ID: BN1446.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 12.6 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	340	U
62-75-9	N-nitroso-dimethylamine	230	U
62-53-3	Aniline	250	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	240	U
95-57-8	2-Chlorophenol	220	U
541-73-1	1,3-Dichlorobenzene	240	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	300	U
95-50-1	1,2-Dichlorobenzene	270	U
	2-Methylphenol	230	U
108-60-1	bis(2-chloroisopropyl)ether	290	U
	4-Methylphenol	300	U
621-64-7	n-Nitroso-di-n-propylamine	280	U
67-72-1	Hexachloroethane	240	U
98-95-3	Nitrobenzene	310	U
78-59-1	Isophorone	290	U
88-75-5	2-Nitrophenol	190	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	140	U
120-83-2	2,4-Dichlorophenol	180	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	300	U
91-20-3	Naphthalene	280	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	280	U
59-50-7	4-Chloro-3-methylphenol	220	U
91-57-6	2-Methylnaphthalene	310	U
77-47-4	Hexachlorocyclopentadiene	65	U
88-06-2	2,4,6-Trichlorophenol	210	U
	2,4,5-Trichlorophenol	240	U
91-58-7	2-Chloronaphthalene	200	U
88-74-4	2-Nitroaniline	190	U
131-11-3	Dimethylphthalate	170	U
208-96-8	Acenaphthylene	220	U
606-20-2	2,6-Dinitrotoluene	260	U
99-09-2	3-Nitroaniline	290	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

B-51

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.20

Sample wt/vol: 10.03 (g/ml) G Lab File ID: BN1446.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 12.6 decanted:(Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	200	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	210	U
100-02-7	4-Nitrophenol	520	U
121-14-2	2,4-Dinitrotoluene	210	U
84-66-2	Diethylphthalate	230	U
86-73-7	Fluorene	220	U
7005-72-3	4-Chlorophenyl-phenylether	210	U
100-01-6	4-Nitroaniline	320	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	210	U
103-33-3	Azobenzene	220	U
101-55-3	4-Bromophenyl-phenylether	200	U
118-74-1	Hexachlorobenzene	300	U
87-86-5	Pentachlorophenol	340	U
85-01-8	Phenanthrene	220	U
120-12-7	Anthracene	220	U
84-74-2	Di-n-butylphthalate	360	JB
206-44-0	Fluoranthene	220	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	260	U
85-68-7	Butylbenzylphthalate	290	U
56-55-3	Benzo[a]anthracene	220	U
91-94-1	3,3'-Dichlorobenzidine	390	U
218-01-9	Chrysene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	440	B
117-84-0	Di-n-octylphthalate	320	U
205-99-2	Benzo[b]fluoranthene	280	U
207-08-9	Benzo[k]fluoranthene	210	U
50-32-8	Benzo[a]pyrene	210	U
193-39-5	Indeno[1,2,3-cd]pyrene	230	U
53-70-3	Dibenz[a,h]anthracene	270	U
191-24-2	Benzo[g,h,i]perylene	270	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

B-51

Lab Name: FMETL NJDEP: 13461

Project: 980211 Case No: 3432 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3432.20

Sample wt/vol: 10.03 (g/ml) G Lab File ID: BN1446.D

Level: (low/med) LOW Date Received: 03/25/98

% Moisture: 12.6 decanted: (Y/N) N Date Extracted: 03/26/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/10/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.84	980	J
2.	unknown	27.12	970	J
3. 000638-68-6	Triacontane	27.56	1300	JN
4. 000630-06-8	Hexatriacontane	28.88	1000	JN
5. 001454-84-8	1-Nonadecanol	28.93	970	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-52

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.02

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03668.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 15.48 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-52

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.02

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03668.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 15.48 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	490	JB
206-44-0	Fluoranthene	280	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	230	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	120	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	130	J
117-81-7	bis(2-Ethylhexyl)phthalate	210	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-52

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.02

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03668.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 15.48 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	670	JN
2. 000057-10-3	Hexadecanoic acid	19.60	1600	JN
3. 000057-11-4	Octadecanoic acid	21.19	520	JN
4. 000629-96-9	1-Eicosanol	24.77	1500	JN
5. 001599-67-3	1-Docosene	27.21	3600	JN
6. 006624-79-9	1-Dotriacontanol	28.81	2000	JN
7.	unknown	28.97	640	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-53

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.04

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03671.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.61 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-53

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.04

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03671.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.61 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	120	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-53

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.04

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03671.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.61 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 22 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.14	500	J
2.	unknown	4.28	610	J
3.	unknown	5.09	1500	J
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1400	JN
5. 000057-10-3	Hexadecanoic acid	19.60	2100	JN
6. 000544-63-8	Tetradecanoic acid	21.19	620	JN
7. 001454-84-8	1-Nonadecanol	23.51	9000	JN
8. 000057-11-4	Octadecanoic acid	23.98	660	JN
9. 006624-79-9	1-Dotriacontanol	24.78	1900	JN
10. 000057-11-4	Octadecanoic acid	25.22	460	JN
11.	unknown	25.59	800	J
12. 000630-06-8	Hexatriacontane	25.93	520	JN
13. 000629-96-9	1-Eicosanol	25.96	960	JN
14. 007390-81-0	Oxirane, hexadecyl-	26.80	630	JN
15. 000629-99-2	Pentacosane	27.14	730	JN
16. 001599-67-3	1-Docosene	27.21	3700	JN
17. 000000-00-0	2-Heptacosanone	27.32	520	JN
18.	unknown	27.97	510	J
19. 056554-93-9	15-Octadecenal	28.27	760	JN
20. 006624-79-9	1-Dotriacontanol	28.81	2600	JN
21.	unknown	28.98	910	J
22. 006971-40-0	17-Pentatriacontene	31.02	570	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-54

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03672.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 22.84 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1300	U
62-75-9	N-nitroso-dimethylamine	1300	U
62-53-3	Aniline	1300	U
108-95-2	Phenol	1300	U
111-44-4	bis(2-Chloroethyl)ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1,3-Dichlorobenzene	1300	U
106-46-7	1,4-Dichlorobenzene	1300	U
100-51-6	Benzyl alcohol	1300	U
95-50-1	1,2-Dichlorobenzene	1300	U
95-48-7	2-Methylphenol	1300	U
108-60-1	bis(2-chloroisopropyl)ether	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	n-Nitroso-di-n-propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
111-91-1	bis(2-Chloroethoxy)methane	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
65-85-0	Benzoic Acid	1300	U
120-82-1	1,2,4-Trichlorobenzene	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	1300	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethylphthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	1300	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-54

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03672.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 22.84 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1300	U
51-28-5	2,4-Dinitrophenol	1300	U
132-64-9	Dibenzofuran	1300	U
100-02-7	4-Nitrophenol	1300	U
121-14-2	2,4-Dinitrotoluene	1300	U
84-66-2	Diethylphthalate	1300	U
86-73-7	Fluorene	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
100-01-6	4-Nitroaniline	1300	U
534-52-1	4,6-Dinitro-2-methylphenol	1300	U
86-30-6	n-Nitrosodiphenylamine	1300	U
103-33-3	Azobenzene	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	1300	U
87-86-5	Pentachlorophenol	1300	U
85-01-8	Phenanthrene	330	J
120-12-7	Anthracene	1300	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	920	J
92-87-5	Benzidine	1300	U
129-00-0	Pyrene	790	J
85-68-7	Butylbenzylphthalate	1300	U
56-55-3	Benzo[a]anthracene	390	J
91-94-1	3,3'-Dichlorobenzidine	1300	U
218-01-9	Chrysene	590	J
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1300	U
205-99-2	Benzo[b]fluoranthene	500	J
207-08-9	Benzo[k]fluoranthene	380	J
50-32-8	Benzo[a]pyrene	320	J
193-39-5	Indeno[1,2,3-cd]pyrene	220	J
53-70-3	Dibenz[a,h]anthracene	1300	U
191-24-2	Benzo[g,h,i]perylene	220	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-54

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03672.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 22.84 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 18

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.09	1400	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1900	JN
3.	000057-10-3	Hexadecanoic acid	19.60	2100	JN
4.		unknown	20.55	860	J
5.	000057-11-4	Octadecanoic acid	21.18	580	JN
6.	001002-84-2	Pentadecanoic acid	23.98	660	JN
7.	040710-42-7	1-Hentetracontanol	24.77	1600	JN
8.		unknown	25.22	710	J
9.	000629-78-7	Heptadecane	25.92	1300	JN
10.		unknown	25.96	1200	J
11.	000629-92-5	Nonadecane	27.14	1900	JN
12.	000629-96-9	1-Eicosanol	27.21	3500	JN
13.	004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	28.52	700	JN
14.	014021-23-9	D-Friedoolean-14-ene, 3-methoxy	28.70	1500	JN
15.	006971-40-0	17-Pentatriacontene	28.81	2800	JN
16.		unknown	28.97	920	J
17.		unknown	29.36	780	J
18.	000661-19-8	1-Docosanol	31.03	800	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-55

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.08

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03682.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 17.44 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-55

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.08

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03682.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 17.44 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	180	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	160	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-55

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.08

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03682.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 17.44 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1700	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1400	JN
3. 000057-10-3	Hexadecanoic acid	19.60	2200	JN
4. 000112-95-8	Eicosane	22.16	1100	JN
5. 001454-84-8	1-Nonadecanol	23.51	8400	JN
6. 000112-85-6	Docosanoic acid	23.99	2300	JN
7.	unknown	24.78	5000	J
8. 000057-11-4	Octadecanoic acid	25.25	4700	JN
9. 000638-66-4	Octadecanal	25.61	2400	JN
10. 002363-71-5	Heneicosanoic acid	25.82	1100	JN
11. 000629-97-0	Docosane	25.94	6000	JN
12.	unknown	25.98	4000	J
13. 002363-71-5	Heneicosanoic acid	26.42	2800	JN
14. 000638-66-4	Octadecanal	26.80	2200	JN
15. 000629-78-7	Heptadecane	27.15	4100	JN
16. 001599-67-3	1-Docosene	27.23	3800	JN
17. 000000-00-0	2-Heptacosanone	27.34	2600	JN
18. 077899-10-6	(Z)14-Tricosenyl formate	28.29	2600	JN
19. 000629-78-7	Heptadecane	28.69	1600	JN
20. 000661-19-8	1-Docosanol	28.84	2200	JN
21. 001192-22-9	Oxirane, 3-ethyl-2,2-dimethyl-	28.99	3000	JN
22. 000083-47-6	.gamma.-Sitosterol	29.40	2500	JN
23.	unknown	29.50	1300	J
24.	unknown	29.95	1100	J
25.	unknown	31.25	1200	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-56

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.10

Sample wt/vol: 9.94 (g/ml) G Lab File ID: BN03673.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.36 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-56

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.10

Sample wt/vol: 9.94 (g/ml) G Lab File ID: BN03673.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.36 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	320	JB
206-44-0	Fluoranthene	330	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	320	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	200	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	130	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	350	J
207-08-9	Benzo[k]fluoranthene	250	J
50-32-8	Benzo[a]pyrene	250	J
193-39-5	Indeno[1,2,3-cd]pyrene	150	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	170	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-56

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.10

Sample wt/vol: 9.94 (g/ml) G Lab File ID: BN03673.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 13.36 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1200	J
2.	unknown	17.52	620	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2800	JN
4. 000057-10-3	Hexadecanoic acid	19.60	1400	JN
5. 007704-34-9	Sulfur	20.58	4200	JN
6.	unknown	24.77	1700	J
7. 002363-71-5	Heneicosanoic acid	25.22	500	JN
8. 000629-78-7	Heptadecane	25.94	2300	JN
9.	unknown	25.96	1600	J
10. 077899-10-6	(Z)14-Tricosenyl formate	26.81	1100	JN
11. 007225-64-1	Heptadecane, 9-octyl-	27.15	2300	JN
12. 001599-67-3	1-Docosene	27.22	2900	JN
13.	unknown	27.34	560	J
14. 000638-68-6	Triacontane	28.70	800	JN
15. 006971-40-0	17-Pentatriacontene	28.83	2900	JN
16.	unknown	28.98	860	J
17. 000083-47-6	.gamma.-Sitosterol	29.38	1800	JN
18.	unknown	30.09	640	J
19. 001058-61-3	Stigmast-4-en-3-one	30.89	640	JN
20.	unknown	31.04	520	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-57

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.12

Sample wt/vol: 9.97 (g/ml) G Lab File ID: BN03674.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 16.04 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-57

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.12

Sample wt/vol: 9.97 (g/ml) G Lab File ID: BN03674.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 16.04 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-57

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.12

Sample wt/vol: 9.97 (g/ml) G Lab File ID: BN03674.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 16.04 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.29	580	J
2.	unknown	5.09	1700	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1400	JN
4. 000057-10-3	Hexadecanoic acid	19.60	1700	JN
5. 018435-45-5	1-Nonadecene	23.50	8000	JN
6. 000661-19-8	1-Docosanol	24.77	1200	JN
7. 000629-96-9	1-Eicosanol	27.21	3300	JN
8. 001653-33-4	4-Tetradecanol	28.81	1800	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-58

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.14

Sample wt/vol: 10.93 (g/ml) G Lab File ID: BN03680.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 14.18 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-58

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.14

Sample wt/vol: 10.93 (g/ml) G Lab File ID: BN03680.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 14.18 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-58

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.14

Sample wt/vol: 10.93 (g/ml) G Lab File ID: BN03680.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 14.18 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1300	J
2.	unknown	18.86	2100	J
3. 000057-10-3	Hexadecanoic acid	19.59	1000	JN
4. 001454-84-8	1-Nonadecanol	23.51	8100	JN
5. 006971-40-0	17-Pentatriacontene	24.15	440	JN
6. 000629-96-9	1-Eicosanol	24.77	1100	JN
7. 006624-79-9	1-Dotriacontanol	27.20	2700	JN
8. 001454-84-8	1-Nonadecanol	28.81	1500	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-59

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.16

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03681.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.78 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-59

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.16

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03681.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.78 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	120	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	510	JB
206-44-0	Fluoranthene	260	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	240	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	150	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	250	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	200	J
207-08-9	Benzo[k]fluoranthene	150	J
50-32-8	Benzo[a]pyrene	130	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-59

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.16

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03681.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.78 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000107-88-0	1,3-Butanediol	4.30	450	JN
2.	unknown	5.10	1500	J
3.	unknown	18.86	680	J
4. 000057-10-3	Hexadecanoic acid	19.60	1600	JN
5. 000057-11-4	Octadecanoic acid	21.19	490	JN
6. 006624-79-9	1-Dotriacontanol	24.15	460	JN
7. 000506-52-5	1-Hexacosanol	24.77	1600	JN
8. 001599-67-3	1-Docosene	27.21	3100	JN
9.	unknown	27.96	770	J
10. 000629-96-9	1-Eicosanol	28.81	1500	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-60

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.18

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03683.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.56 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-60

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.18

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03683.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.56 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	800	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-60

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.18

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03683.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 8.56 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.11	1100	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	980	JN
3.	000057-10-3	Hexadecanoic acid	19.59	570	JN
4.	000629-96-9	1-Eicosanol	23.50	4700	JN
5.	001454-85-9	1-Heptadecanol	24.77	600	JN
6.	000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	25.59	450	JN
7.	000629-96-9	1-Eicosanol	27.21	1200	JN
8.	006971-40-0	17-Pentatriacontene	28.82	520	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-61

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.20

Sample wt/vol: 11 (g/ml) G Lab File ID: BN03684.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 9.74 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-61

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.20

Sample wt/vol: 11 (g/ml) G Lab File ID: BN03684.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 9.74 decanted:(Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	1800	B
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-61

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4748 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4748.20

Sample wt/vol: 11 (g/ml) G Lab File ID: BN03684.D

Level: (low/med) LOW Date Received: 8/26/99

% Moisture: 9.74 decanted: (Y/N) N Date Extracted: 8/27/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.17	570	J
2.		unknown	4.31	800	J
3.		unknown	5.10	1500	J
4.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2800	JN
5.	000057-10-3	Hexadecanoic acid	19.61	1800	JN
6.	000112-92-5	1-Octadecanol	20.59	430	JN
7.	000057-11-4	Octadecanoic acid	21.19	420	JN
8.	001454-84-8	1-Nonadecanol	23.51	7200	JN
9.	000661-19-8	1-Docosanol	24.77	1100	JN
10.		unknown	25.60	1400	J
11.	000629-96-9	1-Eicosanol	27.21	2500	JN
12.		unknown	27.96	520	J
13.	000629-96-9	1-Eicosanol	28.81	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-63

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.02

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03687.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.07 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-63

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.02

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03687.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.07 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	2200	B
206-44-0	Fluoranthene	310	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	260	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	150	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	160	J
117-81-7	bis(2-Ethylhexyl)phthalate	400	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	130	J
207-08-9	Benzo[k]fluoranthene	120	J
50-32-8	Benzo[a]pyrene	130	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-63

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.02

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03687.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.07 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 20 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.30	520	J
2.		unknown	5.10	1600	J
3.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.87	4100	JN
4.	000057-10-3	Hexadecanoic acid	19.60	1500	JN
5.	010544-50-0	Sulfur, mol. (S8)	20.57	4200	JN
6.		unknown	22.42	480	J
7.	001928-30-9	Tricosane, 2-methyl-	22.86	740	JN
8.	040710-42-7	1-Hentetracontanol	24.15	590	JN
9.	006971-40-0	17-Pentatriacontene	24.77	2600	JN
10.	000629-92-5	Nonadecane	25.93	960	JN
11.	000297-03-0	Cyclotetracosane	25.97	1200	JN
12.	056554-89-3	14-Octadecenal	26.80	740	JN
13.	000629-78-7	Heptadecane	27.14	830	JN
14.	001599-67-3	1-Docosene	27.21	3500	JN
15.		unknown	27.33	830	J
16.		unknown	27.97	770	J
17.	007390-81-0	Oxirane, hexadecyl-	28.27	810	JN
18.	000629-96-9	1-Eicosanol	28.82	1800	JN
19.		unknown	28.98	640	J
20.	000083-47-6	.gamma.-Sitosterol	29.37	630	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-64

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.04

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN03690.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 18.56 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-64

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.04

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN03690.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 18.56 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	970	JB
206-44-0	Fluoranthene	720	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1000	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	580	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	780	J
117-81-7	bis(2-Ethylhexyl)phthalate	140	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	510	J
207-08-9	Benzo[k]fluoranthene	390	J
50-32-8	Benzo[a]pyrene	490	J
193-39-5	Indeno[1,2,3-cd]pyrene	210	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	240	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-64

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4754.04

Sample wt/vol: 10.22 (g/ml) G Lab File ID: BN03690.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 18.56 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.16	630	JN
2.	unknown	4.30	630	J
3.	unknown	5.09	1700	J
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1700	JN
5. 000057-10-3	Hexadecanoic acid	19.59	860	JN
6. 000544-76-3	Hexadecane	22.85	560	JN
7. 000629-96-9	1-Eicosanol	24.77	910	JN
8. 000205-82-3	Benzo[j]fluoranthene	26.05	530	JN
9. 001454-84-8	1-Nonadecanol	27.21	2100	JN
10. 000112-92-5	1-Octadecanol	28.82	690	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-65

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03691.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.94 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-65

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03691.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.94 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-65

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.06

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03691.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.94 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1400	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2100	JN
3. 000629-96-9	1-Eicosanol	23.51	7600	JN
4. 001454-84-8	1-Nonadecanol	24.78	1000	JN
5. 001599-67-3	1-Docosene	27.21	2400	JN
6. 000629-96-9	1-Eicosanol	28.81	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-66

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03692.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.09 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-66

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03692.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.09 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	200	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	280	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	120	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-66

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03692.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.09 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/2/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.29	470	J
2.	unknown	5.09	1600	J
3.	unknown	18.86	520	J
4. 000057-10-3	Hexadecanoic acid	19.59	670	JN
5. 000112-88-9	1-Octadecene	23.51	7400	JN
6. 001454-84-8	1-Nonadecanol	24.78	1100	JN
7. 000629-96-9	1-Eicosanol	27.21	2500	JN
8. 006624-79-9	1-Dotriacontanol	28.82	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-67

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.10

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03695.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 11.89 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-67

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.10

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03695.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 11.89 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	140	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	290	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-67

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.10

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03695.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 11.89 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1300	J
2.	unknown	18.85	640	J
3. 000057-10-3	Hexadecanoic acid	19.59	1000	JN
4. 000112-88-9	1-Octadecene	23.50	7400	JN
5. 000661-19-8	1-Docosanol	24.76	1200	JN
6.	unknown	25.58	540	J
7. 000629-96-9	1-Eicosanol	27.19	2100	JN
8. 006971-40-0	17-Pentatriacontene	28.80	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-68

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.12

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03696.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 7.48 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-68

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.12

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03696.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 7.48 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	720	JB
206-44-0	Fluoranthene	130	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-68

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.12

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03696.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 7.48 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1300	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1500	JN
3. 010544-50-0	Sulfur, mol. (S8)	20.55	1800	JN
4. 000112-88-9	1-Octadecene	23.50	7200	JN
5. 001599-67-3	1-Docosene	24.76	1300	JN
6. 000629-96-9	1-Eicosanol	27.20	2400	JN
7. 006971-40-0	17-Pentatriacontene	28.80	1300	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-69

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.14

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN03697.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 10.44 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-69

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.14

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN03697.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 10.44 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	840	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	120	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-69

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.14

Sample wt/vol: 10.01 (g/ml) G Lab File ID: BN03697.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 10.44 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.31	450	J
2.	unknown	5.10	1400	J
3.	unknown	18.85	1300	J
4. 000057-10-3	Hexadecanoic acid	19.58	490	JN
5. 001454-84-8	1-Nonadecanol	23.50	7200	JN
6. 000629-96-9	1-Eicosanol	24.76	1100	JN
7. 001599-67-3	1-Docosene	27.19	2600	JN
8. 000629-96-9	1-Eicosanol	28.79	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-70

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03698.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 14.03 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-70

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03698.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 14.03 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1300	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-70

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03698.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 14.03 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 21 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000107-88-0	1,3-Butanediol	4.30	500	JN
2.		unknown	5.10	1100	J
3.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	2700	JN
4.	000057-10-3	Hexadecanoic acid	19.58	950	JN
5.	007206-21-5	5-Octadecene, (E)-	20.58	560	JN
6.	001454-84-8	1-Nonadecanol	23.49	6700	JN
7.	006971-40-0	17-Pentatriacontene	24.76	1800	JN
8.	000000-00-0	1-Hexacosanal	25.59	820	JN
9.	000630-06-8	Hexatriacontane	25.91	850	JN
10.	000297-03-0	Cyclotetracosane	25.95	1300	JN
11.	056554-89-3	14-Octadecenal	26.78	1100	JN
12.	055045-08-4	Dodecane, 2-methyl-6-propyl-	27.12	1000	JN
13.	001599-67-3	1-Docosene	27.20	3000	JN
14.	000000-00-0	2-Heptacosanone	27.32	680	JN
15.	056554-86-0	17-Octadecenal	28.25	1200	JN
16.	014167-59-0	Tetratriacontane	28.66	490	JN
17.	006971-40-0	17-Pentatriacontene	28.79	1900	JN
18.		unknown	28.94	970	J
19.	000083-47-6	.gamma.-Sitosterol	29.33	470	JN
20.		unknown	31.00	460	J
21.		unknown	31.21	470	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-71

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.18

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03707.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.04 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-71

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.18

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03707.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.04 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1800	
120-12-7	Anthracene	520	J
84-74-2	Di-n-butylphthalate	460	JB
206-44-0	Fluoranthene	3400	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	2500	
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1400	
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1400	
117-81-7	bis(2-Ethylhexyl)phthalate	290	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1200	
207-08-9	Benzo[k]fluoranthene	1100	
50-32-8	Benzo[a]pyrene	1300	
193-39-5	Indeno[1,2,3-cd]pyrene	620	J
53-70-3	Dibenz[a,h]anthracene	180	J
191-24-2	Benzo[g,h,i]perylene	610	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-71

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.18

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03707.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 15.04 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1600	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	690	JN
3. 000057-10-3	Hexadecanoic acid	19.59	1100	JN
4. 000057-11-4	Octadecanoic acid	21.18	510	JN
5.	unknown	23.08	470	J
6. 000112-85-6	Docosanoic acid	23.97	620	JN
7. 000112-88-9	1-Octadecene	24.77	980	JN
8. 000205-82-3	Benzo[j]fluoranthene	26.04	920	JN
9. 000629-96-9	1-Eicosanol	27.21	2100	JN
10.	unknown	28.80	1100	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-72

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.20

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03699.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.64 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-72

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.20

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03699.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.64 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	940	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-72

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.20

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03699.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 13.64 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.17	470	J
2.	000513-85-9	2,3-Butanediol	4.31	500	JN
3.		unknown	5.10	1700	J
4.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	1400	JN
5.	000057-10-3	Hexadecanoic acid	19.58	720	JN
6.	001454-84-8	1-Nonadecanol	23.49	6700	JN
7.	001454-85-9	1-Heptadecanol	24.76	970	JN
8.	000629-96-9	1-Eicosanol	27.19	2000	JN
9.	000506-52-5	1-Hexacosanol	28.79	960	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-73

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.22

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03700.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 5.41 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-73

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.22

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03700.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 5.41 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	670	JB
206-44-0	Fluoranthene	120	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	120	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	110	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-73

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4754 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4754.22

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03700.D

Level: (low/med) LOW Date Received: 8/27/99

% Moisture: 5.41 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	940	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	1100	JN
3.	000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	22.19	540	JN
4.	000629-96-9	1-Eicosanol	23.50	6300	JN
5.		unknown	24.14	460	J
6.	000629-96-9	1-Eicosanol	24.76	2300	JN
7.	056554-89-3	14-Octadecenal	25.60	810	JN
8.	000630-07-9	Pentatriacontane	25.92	890	JN
9.		unknown	25.95	1300	J
10.	056554-89-3	14-Octadecenal	26.79	1000	JN
11.	000630-06-8	Hexatriacontane	27.13	950	JN
12.	000629-96-9	1-Eicosanol	27.20	2400	JN
13.	000000-00-0	2-Heptacosanone	27.31	530	JN
14.		unknown	28.26	1300	J
15.	000661-19-8	1-Docosanol	28.80	2200	JN
16.		unknown	28.96	820	J
17.	000083-47-6	.gamma.-Sitosterol	29.35	1400	JN
18.	077899-10-6	(Z)14-Tricosenyl formate	30.25	890	JN
19.	001599-67-3	1-Docosene	31.01	630	JN
20.		unknown	31.22	440	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-74

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.02

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03702.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 10.46 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-74

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.02

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03702.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 10.46 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	340	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-74

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.02

Sample wt/vol: 10.25 (g/ml) G Lab File ID: BN03702.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 10.46 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 13 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1600	J
2.	unknown	18.85	640	J
3. 000057-10-3	Hexadecanoic acid	19.59	810	JN
4. 001454-84-8	1-Nonadecanol	23.49	6000	JN
5. 000629-96-9	1-Eicosanol	24.76	1000	JN
6.	unknown	25.95	630	J
7. 000629-78-7	Heptadecane	27.13	600	JN
8. 001599-67-3	1-Docosene	27.19	2000	JN
9.	unknown	28.26	510	J
10. 014021-23-9	D-Friedoolean-14-ene, 3-methoxy	28.69	1000	JN
11. 006971-40-0	17-Pentatriacontene	28.80	1600	JN
12. 000083-47-6	.gamma.-Sitosterol	29.34	530	JN
13. 006624-79-9	1-Dotriacontanol	31.01	460	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-75

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.04

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN03703.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.79 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-75

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.04

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN03703.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.79 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	450	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1300	B
206-44-0	Fluoranthene	820	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	710	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	400	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	500	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	420	J
207-08-9	Benzo[k]fluoranthene	430	J
50-32-8	Benzo[a]pyrene	390	J
193-39-5	Indeno[1,2,3-cd]pyrene	230	J
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	230	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-75

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.04

Sample wt/vol: 10.58 (g/ml) G Lab File ID: BN03703.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.79 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	1700	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2000	JN
3.	000057-10-3	Hexadecanoic acid	19.58	1000	JN
4.	000593-45-3	Octadecane	22.85	550	JN
5.	025276-70-4	1-Pentadecanethiol	24.14	440	JN
6.	006624-79-9	1-Dotriacontanol	24.76	1300	JN
7.	000629-78-7	Heptadecane	25.92	570	JN
8.	036653-82-4	1-Hexadecanol	25.95	670	JN
9.	000198-55-0	Perylene	26.03	530	JN
10.	000630-06-8	Hexatriacontane	27.12	650	JN
11.	001599-67-3	1-Docosene	27.20	2200	JN
12.	006971-40-0	17-Pentatriacontene	28.80	990	JN
13.		unknown	28.94	1200	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-76

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.06

Sample wt/vol: 10.69 (g/ml) G Lab File ID: BN03704.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.45 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-76

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.06

Sample wt/vol: 10.69 (g/ml) G Lab File ID: BN03704.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.45 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	240	JB
206-44-0	Fluoranthene	230	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	260	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	230	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	320	J
207-08-9	Benzo[k]fluoranthene	320	J
50-32-8	Benzo[a]pyrene	300	J
193-39-5	Indeno[1,2,3-cd]pyrene	170	J
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	170	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-76

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.06

Sample wt/vol: 10.69 (g/ml) G Lab File ID: BN03704.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.45 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 24 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	1400	J
2.		unknown	18.85	480	J
3.	000057-10-3	Hexadecanoic acid	19.59	1500	JN
4.	007704-34-9	Sulfur	20.55	1300	JN
5.	000057-11-4	Octadecanoic acid	21.18	460	JN
6.	000124-25-4	Tetradecanal	23.08	410	JN
7.	000112-85-6	Docosanoic acid	23.97	540	JN
8.	006971-40-0	17-Pentatriacontene	24.13	510	JN
9.	006971-40-0	17-Pentatriacontene	24.77	2500	JN
10.	002363-71-5	Heneicosanoic acid	25.22	580	JN
11.	000629-92-5	Nonadecane	25.92	1300	JN
12.	000297-03-0	Cyclotetracosane	25.96	1400	JN
13.		unknown	26.05	680	J
14.	056554-86-0	17-Octadecenal	26.79	1200	JN
15.	000629-94-7	Heneicosane	27.13	1200	JN
16.	001599-67-3	1-Docosene	27.21	2900	JN
17.		unknown	27.33	770	J
18.	004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	28.53	960	JN
19.		unknown	28.73	6200	J
20.		unknown	28.81	1900	J
21.		unknown	28.96	950	J
22.	000083-47-6	.gamma.-Sitosterol	29.36	1000	JN
23.		unknown	29.79	550	J
24.		unknown	31.23	420	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-77

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.08

Sample wt/vol: 10.15 (g/ml) G Lab File ID: BN03705.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.41 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-77

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.08

Sample wt/vol: 10.15 (g/ml) G Lab File ID: BN03705.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.41 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	120	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	230	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	180	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-77

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.08

Sample wt/vol: 10.15 (g/ml) G Lab File ID: BN03705.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.41 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1300	J
2.	unknown	18.85	480	J
3. 000057-10-3	Hexadecanoic acid	19.59	1200	JN
4. 074685-30-6	5-Eicosene, (E)-	23.49	6800	JN
5. 000661-19-8	1-Docosanol	24.76	950	JN
6.	unknown	25.58	670	J
7. 006971-40-0	17-Pentatriacontene	27.20	2000	JN
8. 000629-96-9	1-Eicosanol	28.80	950	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-78

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.10

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03706.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.18 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-78

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.10

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03706.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.18 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1000	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-78

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.10

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03706.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.18 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/3/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	1300	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	1700	JN
3.	000057-10-3	Hexadecanoic acid	19.59	1200	JN
4.	000112-88-9	1-Octadecene	23.50	7300	JN
5.	006624-79-9	1-Dotriacontanol	24.76	1100	JN
6.	000629-96-9	1-Eicosanol	27.20	2500	JN
7.	000661-19-8	1-Docosanol	28.80	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-79

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.12

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03727.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.9 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-79

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.12

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03727.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.9 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	140	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	210	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	260	JB
206-44-0	Fluoranthene	310	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	300	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	140	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	210	J
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	140	J
207-08-9	Benzo[k]fluoranthene	130	J
50-32-8	Benzo[a]pyrene	140	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-79

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.12

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03727.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.9 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 19 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.18	630	J
2.	unknown	4.31	590	J
3.	unknown	5.11	1600	J
4. 000057-10-3	Hexadecanoic acid	19.61	2400	JN
5. 010544-50-0	Sulfur, mol. (S8)	20.57	2300	JN
6. 000057-11-4	Octadecanoic acid	21.20	680	JN
7. 000112-85-6	Docosanoic acid	23.99	660	JN
8.	unknown	24.16	660	J
9. 006971-40-0	17-Pentatriacontene	24.78	1400	JN
10. 000630-03-5	Nonacosane	25.94	670	JN
11.	unknown	25.97	750	J
12. 000000-00-0	1-Hexacosanal	26.81	1000	JN
13. 000629-94-7	Heneicosane	27.15	1100	JN
14. 000629-96-9	1-Eicosanol	27.22	3000	JN
15.	unknown	27.34	590	J
16.	unknown	27.98	690	J
17.	unknown	28.29	910	J
18. 000629-96-9	1-Eicosanol	28.83	1500	JN
19. 000083-47-6	.gamma.-Sitosterol	29.38	690	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-80

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.14

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03716.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.92 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-80

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.14

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03716.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.92 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	440	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-80

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.14

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03716.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.92 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1800	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	790	JN
3. 000057-10-3	Hexadecanoic acid	19.59	780	JN
4. 018435-45-5	1-Nonadecene	23.51	7100	JN
5. 001599-67-3	1-Docosene	24.78	930	JN
6. 000629-96-9	1-Eicosanol	27.21	2200	JN
7. 006624-79-9	1-Dotriacontanol	28.81	1300	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-81

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.16

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03717.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 18.54 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-81

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.16

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03717.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 18.54 decanted:(Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	150	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1000	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-81

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.16

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03717.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 18.54 decanted: (Y/N) N Date Extracted: 8/31/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 18 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1700	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1800	JN
3. 000057-10-3	Hexadecanoic acid	19.60	1500	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.55	600	JN
5. 001454-84-8	1-Nonadecanol	23.51	6100	JN
6. 006624-79-9	1-Dotriacontanol	24.77	1200	JN
7.	unknown	25.60	1100	J
8. 000646-31-1	Tetracosane	25.93	770	JN
9.	unknown	25.97	840	J
10. 056554-87-1	16-Octadecenal	26.80	550	JN
11. 000630-06-8	Hexatriacontane	27.14	980	JN
12. 001599-67-3	1-Docosene	27.21	2300	JN
13. 000638-66-4	Octadecanal	28.28	770	JN
14.	unknown	28.71	1000	J
15. 000629-96-9	1-Eicosanol	28.82	2000	JN
16.	unknown	28.96	1500	J
17.	unknown	29.15	740	J
18. 000083-47-6	.gamma.-Sitosterol	29.36	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-82

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.18

Sample wt/vol: 10.99 (g/ml) G Lab File ID: BN03718.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 20.67 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-82

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4760.18

Sample wt/vol: 10.99 (g/ml) G Lab File ID: BN03718.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 20.67 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	860	JB
206-44-0	Fluoranthene	130	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	130	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-82

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.18

Sample wt/vol: 10.99 (g/ml) G Lab File ID: BN03718.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 20.67 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.19	510	J
2.		unknown	4.31	520	J
3.		unknown	5.10	1700	J
4.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1200	JN
5.	000057-10-3	Hexadecanoic acid	19.60	1900	JN
6.	000057-11-4	Octadecanoic acid	21.19	760	JN
7.	056554-89-3	14-Octadecenal	23.09	470	JN
8.	001454-84-8	1-Nonadecanol	23.51	8100	JN
9.	000112-85-6	Docosanoic acid	23.99	760	JN
10.	002490-48-4	1-Hexadecanol, 2-methyl-	24.15	650	JN
11.		unknown	24.78	3800	J
12.	000112-85-6	Docosanoic acid	25.23	610	JN
13.	000000-00-0	1-Hexacosanal	25.61	1500	JN
14.	000646-31-1	Tetracosane	25.94	2800	JN
15.	000297-03-0	Cyclotetracosane	25.97	2000	JN
16.	000000-00-0	2-Heptacosanone	26.07	510	JN
17.	056554-87-1	16-Octadecenal	26.80	1600	JN
18.	000629-92-5	Nonadecane	27.14	2200	JN
19.	001599-67-3	1-Docosene	27.23	3600	JN
20.	000000-00-0	2-Heptacosanone	27.34	1100	JN
21.	000000-00-0	1-Hexacosanal	28.29	1600	JN
22.	000638-68-6	Triacontane	28.70	940	JN
23.	000629-96-9	1-Eicosanol	28.83	2200	JN
24.		unknown	28.99	1300	J
25.	000083-47-6	.gamma.-Sitosterol	29.39	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-83

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.20

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03721.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.27 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-83

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.20

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03721.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.27 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	3100	B
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-83

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.20

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03721.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 14.27 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.11	1200	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	1800	JN
3. 000057-10-3	Hexadecanoic acid	19.61	1500	JN
4. 001002-84-2	Pentadecanoic acid	21.19	490	JN
5. 001454-84-8	1-Nonadecanol	23.51	7600	JN
6. 000629-96-9	1-Eicosanol	24.78	1000	JN
7.	unknown	25.33	680	J
8.	unknown	25.60	580	J
9. 000629-96-9	1-Eicosanol	27.22	2100	JN
10.	unknown	27.97	680	J
11. 006624-79-9	1-Dotriacontanol	28.82	1000	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-84

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.22

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03722.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.82 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-84

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.22

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03722.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.82 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	240	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	2200	B
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-84

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.22

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03722.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 17.82 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 12 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.19	510	J
2.	unknown	4.32	550	J
3.	unknown	5.11	1600	J
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.87	3500	JN
5. 000057-10-3	Hexadecanoic acid	19.60	1400	JN
6. 000112-95-8	Eicosane	22.86	560	JN
7. 001454-84-8	1-Nonadecanol	23.51	8700	JN
8. 006971-40-0	17-Pentatriacontene	24.16	500	JN
9. 000629-96-9	1-Eicosanol	24.78	1300	JN
10. 001454-84-8	1-Nonadecanol	27.22	2700	JN
11.	unknown	27.97	640	J
12. 000629-96-9	1-Eicosanol	28.82	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-85

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.24

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN03723.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 6.36 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	980	U
62-75-9	N-nitroso-dimethylamine	980	U
62-53-3	Aniline	980	U
108-95-2	Phenol	980	U
111-44-4	bis(2-Chloroethyl)ether	980	U
95-57-8	2-Chlorophenol	980	U
541-73-1	1,3-Dichlorobenzene	980	U
106-46-7	1,4-Dichlorobenzene	980	U
100-51-6	Benzyl alcohol	980	U
95-50-1	1,2-Dichlorobenzene	980	U
95-48-7	2-Methylphenol	980	U
108-60-1	bis(2-chloroisopropyl)ether	980	U
106-44-5	4-Methylphenol	980	U
621-64-7	n-Nitroso-di-n-propylamine	980	U
67-72-1	Hexachloroethane	980	U
98-95-3	Nitrobenzene	980	U
78-59-1	Isophorone	980	U
88-75-5	2-Nitrophenol	980	U
105-67-9	2,4-Dimethylphenol	980	U
111-91-1	bis(2-Chloroethoxy)methane	980	U
120-83-2	2,4-Dichlorophenol	980	U
65-85-0	Benzoic Acid	980	U
120-82-1	1,2,4-Trichlorobenzene	980	U
91-20-3	Naphthalene	980	U
106-47-8	4-Chloroaniline	980	U
87-68-3	Hexachlorobutadiene	980	U
59-50-7	4-Chloro-3-methylphenol	980	U
91-57-6	2-Methylnaphthalene	980	U
77-47-4	Hexachlorocyclopentadiene	980	U
88-06-2	2,4,6-Trichlorophenol	980	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	980	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	980	U
208-96-8	Acenaphthylene	980	U
606-20-2	2,6-Dinitrotoluene	980	U
99-09-2	3-Nitroaniline	980	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-85

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.24

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN03723.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 6.36 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	980	U
51-28-5	2,4-Dinitrophenol	980	U
132-64-9	Dibenzofuran	980	U
100-02-7	4-Nitrophenol	980	U
121-14-2	2,4-Dinitrotoluene	980	U
84-66-2	Diethylphthalate	980	U
86-73-7	Fluorene	980	U
7005-72-3	4-Chlorophenyl-phenylether	980	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	n-Nitrosodiphenylamine	980	U
103-33-3	Azobenzene	980	U
101-55-3	4-Bromophenyl-phenylether	980	U
118-74-1	Hexachlorobenzene	980	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	980	U
120-12-7	Anthracene	980	U
84-74-2	Di-n-butylphthalate	1300	B
206-44-0	Fluoranthene	980	U
92-87-5	Benzidine	980	U
129-00-0	Pyrene	980	U
85-68-7	Butylbenzylphthalate	980	U
56-55-3	Benzo[a]anthracene	980	U
91-94-1	3,3'-Dichlorobenzidine	980	U
218-01-9	Chrysene	980	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	980	U
205-99-2	Benzo[b]fluoranthene	980	U
207-08-9	Benzo[k]fluoranthene	980	U
50-32-8	Benzo[a]pyrene	980	U
193-39-5	Indeno[1,2,3-cd]pyrene	980	U
53-70-3	Dibenz[a,h]anthracene	980	U
191-24-2	Benzo[g,h,i]perylene	980	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-85

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.24

Sample wt/vol: 10.87 (g/ml) G Lab File ID: BN03723.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 6.36 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 19 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.32	500	JN
2.	unknown	5.10	1400	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.86	2100	JN
4. 000057-10-3	Hexadecanoic acid	19.61	1500	JN
5. 000112-88-9	1-Octadecene	20.60	430	JN
6. 000057-11-4	Octadecanoic acid	21.19	460	JN
7. 074685-30-6	5-Eicosene, (E)-	23.51	7000	JN
8. 000506-30-9	Eicosanoic acid	23.99	490	JN
9.	unknown	24.16	410	J
10. 006624-79-9	1-Dotriacontanol	24.78	950	JN
11.	unknown	25.60	500	J
12. 000629-97-0	Docosane	27.15	630	JN
13. 001599-67-3	1-Docosene	27.22	2100	JN
14.	unknown	27.97	500	J
15. 000638-66-4	Octadecanal	28.28	420	JN
16.	unknown	28.53	630	J
17. 007206-19-1	3-Octadecene, (E)-	28.82	1800	JN
18.	unknown	28.96	780	J
19. 000083-47-6	.gamma.-Sitosterol	29.36	890	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-86

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.26

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03724.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.76 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-86

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.26

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03724.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.76 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-86

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.26

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03724.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 8.76 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1200	J
2.	unknown	18.87	2200	J
3. 000057-10-3	Hexadecanoic acid	19.59	770	JN
4. 036653-82-4	1-Hexadecanol	20.59	430	JN
5. 001454-84-8	1-Nonadecanol	23.51	7200	JN
6. 006624-79-9	1-Dotriacontanol	24.15	500	JN
7. 006624-79-9	1-Dotriacontanol	24.77	940	JN
8. 001599-67-3	1-Docosene	27.21	2400	JN
9. 006971-40-0	17-Pentatriacontene	28.82	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-87

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.28

Sample wt/vol: 10.68 (g/ml) G Lab File ID: BN03725.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.33 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-87

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.28

Sample wt/vol: 10.68 (g/ml) G Lab File ID: BN03725.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.33 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	310	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	250	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-87

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.28

Sample wt/vol: 10.68 (g/ml) G Lab File ID: BN03725.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 13.33 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1500	J
2.	unknown	18.86	510	J
3. 000057-10-3	Hexadecanoic acid	19.60	1200	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.60	5500	JN
5. 074685-30-6	5-Eicosene, (E)-	23.51	6800	JN
6. 000629-96-9	1-Eicosanol	24.78	890	JN
7. 001454-84-8	1-Nonadecanol	27.22	2200	JN
8.	unknown	27.97	490	J
9.	unknown	28.71	1600	J
10. 006971-40-0	17-Pentatriacontene	28.82	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-88

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.30

Sample wt/vol: 10.73 (g/ml) G Lab File ID: BN03726.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.1 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-88

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.30

Sample wt/vol: 10.73 (g/ml) G Lab File ID: BN03726.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.1 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	200	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	680	JB
206-44-0	Fluoranthene	280	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	270	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	120	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	190	J
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	160	J
207-08-9	Benzo[k]fluoranthene	130	J
50-32-8	Benzo[a]pyrene	130	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-88

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4760 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4760.30

Sample wt/vol: 10.73 (g/ml) G Lab File ID: BN03726.D

Level: (low/med) LOW Date Received: 8/30/99

% Moisture: 12.1 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	4.19	480	J
2.	000513-85-9	2,3-Butanediol	4.32	560	JN
3.		unknown	5.10	1500	J
4.		unknown	18.87	790	J
5.	000057-10-3	Hexadecanoic acid	19.62	1700	JN
6.	000057-11-4	Octadecanoic acid	21.20	660	JN
7.	000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	22.20	490	JN
8.	056554-86-0	17-Octadecenal	23.09	460	JN
9.	000112-85-6	Docosanoic acid	23.98	670	JN
10.	002136-70-1	Ethanol, 2-(tetradecyloxy)-	24.16	650	JN
11.	006971-40-0	17-Pentatriacontene	24.78	2600	JN
12.		unknown	24.90	430	J
13.	000593-45-3	Octadecane	25.94	2300	JN
14.		unknown	25.97	2400	J
15.	056554-89-3	14-Octadecenal	26.81	1300	JN
16.	000629-97-0	Docosane	27.15	3000	JN
17.	001599-67-3	1-Docosene	27.23	3600	JN
18.		unknown	27.34	910	J
19.		unknown	27.98	700	J
20.	077899-10-6	(Z)14-Tricosenyl formate	28.30	1600	JN
21.	004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	28.55	520	JN
22.		unknown	28.73	3900	J
23.		unknown	28.84	3600	J
24.		unknown	28.98	1800	J
25.	000083-47-6	.gamma.-Sitosterol	29.40	2200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-89

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.02

Sample wt/vol: 10.8 (g/ml) G Lab File ID: BN03734.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.67 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-89

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.02

Sample wt/vol: 10.8 (g/ml) G Lab File ID: BN03734.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.67 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	350	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-89

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.02

Sample wt/vol: 10.8 (g/ml) G Lab File ID: BN03734.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.67 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 19 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	930	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	580	JN
3.	000057-10-3	Hexadecanoic acid	19.58	1700	JN
4.	000057-11-4	Octadecanoic acid	21.17	470	JN
5.	000112-88-9	1-Octadecene	23.49	8400	JN
6.	000661-19-8	1-Docosanol	24.12	530	JN
7.	006624-79-9	1-Dotriacontanol	24.76	2100	JN
8.		unknown	25.58	660	J
9.	000629-97-0	Docosane	25.90	820	JN
10.		unknown	25.94	1200	J
11.	000000-00-0	1-Hexacosanal	26.77	650	JN
12.	000112-95-8	Eicosane	27.11	950	JN
13.	000629-96-9	1-Eicosanol	27.19	3200	JN
14.	000000-00-0	2-Heptacosanone	27.30	720	JN
15.		unknown	28.23	590	J
16.	014021-23-9	D-Friedoolean-14-ene, 3-methoxy	28.67	2100	JN
17.	000661-19-8	1-Docosanol	28.78	1900	JN
18.	000000-00-0	2-Pentacosanone	28.93	790	JN
19.		unknown	29.35	950	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-90

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.04

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03735.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 5.42 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-90

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.04

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03735.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 5.42 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	250	JB
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	590	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-90

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.04

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03735.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 5.42 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.08	570	J
2.	unknown	18.84	530	J
3. 000057-10-3	Hexadecanoic acid	19.57	570	JN
4. 001454-84-8	1-Nonadecanol	23.49	5500	JN
5. 006971-40-0	17-Pentatriacontene	24.75	770	JN
6.	unknown	25.25	530	J
7. 000502-62-5	.Psi.,.psi.-Carotene, 7,7',8,8',11,1	25.57	840	JN
8. 000629-96-9	1-Eicosanol	27.18	1900	JN
9. 006624-79-9	1-Dotriacontanol	28.78	1100	JN
10.	unknown	28.92	490	J
11. 002550-84-7	Cholestan-3-ol, 4,4-dimethyl-, (3.	29.18	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-91

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.06

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03736.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 12.69 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-91

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.06

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03736.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 12.69 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	360	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	210	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-91

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.06

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03736.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 12.69 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 18 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1200	J
2.	unknown	18.84	740	J
3. 000057-10-3	Hexadecanoic acid	19.59	1400	JN
4.	unknown	21.44	620	J
5. 001599-67-3	1-Docosene	23.49	7800	JN
6. 006971-40-0	17-Pentatriacontene	24.75	2700	JN
7.	unknown	25.36	490	J
8.	unknown	25.58	970	J
9. 055045-08-4	Dodecane, 2-methyl-6-propyl-	25.91	760	JN
10.	unknown	25.94	1100	J
11. 056554-89-3	14-Octadecenal	26.78	620	JN
12. 055045-08-4	Dodecane, 2-methyl-6-propyl-	27.12	750	JN
13. 001599-67-3	1-Docosene	27.19	2800	JN
14. 000000-00-0	2-Heptacosanone	27.30	630	JN
15.	unknown	28.24	930	J
16. 000506-52-5	1-Hexacosanol	28.79	1600	JN
17.	unknown	28.93	660	J
18.	unknown	29.62	570	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-92

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.08

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03737.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.7 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-92

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.08

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03737.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.7 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	840	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-92

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.08

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03737.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.7 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1400	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1400	JN
3. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.54	3000	JN
5. 000112-88-9	1-Octadecene	23.49	7500	JN
6. 006624-79-9	1-Dotriacontanol	24.13	490	JN
7. 000506-52-5	1-Hexacosanol	24.75	1100	JN
8.	unknown	25.57	540	J
9. 000630-03-5	Nonacosane	25.91	600	JN
10. 000629-96-9	1-Eicosanol	27.19	2200	JN
11. 006971-40-0	17-Pentatriacontene	28.78	1300	JN

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-93

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03738.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.15 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-93

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03738.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.15 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	130	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	290	JB
206-44-0	Fluoranthene	340	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	500	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	360	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	470	J
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	340	J
207-08-9	Benzo[k]fluoranthene	290	J
50-32-8	Benzo[a]pyrene	380	J
193-39-5	Indeno[1,2,3-cd]pyrene	160	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-93

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03738.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.15 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1400	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	650	JN
3. 000057-10-3	Hexadecanoic acid	19.57	580	JN
4. 018733-57-8	Silane, trichloroeicosyl-	24.76	760	JN
5. 000629-96-9	1-Eicosanol	27.18	1500	JN
6. 040710-42-7	1-Hentetracontanol	28.77	640	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-94

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.12

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03739.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.77 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-94

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.12

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03739.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.77 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	280	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-94

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.12

Sample wt/vol: 10.27 (g/ml) G Lab File ID: BN03739.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 13.77 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1200	J
2. 000084-64-0	1,2-Benzenedicarboxylic acid, but	18.84	570	JN
3. 000057-10-3	Hexadecanoic acid	19.57	910	JN
4. 074685-30-6	5-Eicosene, (E)-	23.49	5700	JN
5. 000629-96-9	1-Eicosanol	24.75	680	JN
6.	unknown	25.57	580	J
7. 006971-40-0	17-Pentatriacontene	27.18	1500	JN
8. 000661-19-8	1-Docosanol	28.78	820	JN
9. 002550-84-7	Cholestan-3-ol, 4,4-dimethyl-, (3.	29.18	630	JN

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-95

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.14

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03740.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.62 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-95

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.14

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03740.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.62 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	320	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	870	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-95

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.14

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03740.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.62 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 18 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.10	1100	J
2.		unknown	18.85	1800	J
3.	000057-10-3	Hexadecanoic acid	19.57	900	JN
4.	007704-34-9	Sulfur	20.55	2100	JN
5.	001454-84-8	1-Nonadecanol	23.49	7100	JN
6.	006971-40-0	17-Pentatriacontene	24.76	2200	JN
7.	000638-66-4	Octadecanal	25.59	930	JN
8.	000629-78-7	Heptadecane	25.91	980	JN
9.	000112-92-5	1-Octadecanol	25.94	1100	JN
10.	007390-81-0	Oxirane, hexadecyl-	26.77	690	JN
11.	055045-08-4	Dodecane, 2-methyl-6-propyl-	27.11	1100	JN
12.	001599-67-3	1-Docosene	27.19	2400	JN
13.	000000-00-0	2-Heptacosanone	27.31	560	JN
14.	000124-25-4	Tetradecanal	28.24	760	JN
15.		unknown	28.66	820	J
16.	006971-40-0	17-Pentatriacontene	28.78	1900	JN
17.		unknown	28.93	800	J
18.	000083-47-6	.gamma.-Sitosterol	29.33	830	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-96

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03748.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 19.09 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	170	J
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	240	J
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-96

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03748.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 19.09 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	400	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	350	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	800	JB
206-44-0	Fluoranthene	1300	
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1100	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	620	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1100	J
117-81-7	bis(2-Ethylhexyl)phthalate	280	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	640	J
207-08-9	Benzo[k]fluoranthene	660	J
50-32-8	Benzo[a]pyrene	370	J
193-39-5	Indeno[1,2,3-cd]pyrene	170	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	160	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-96

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.16

Sample wt/vol: 10.34 (g/ml) G Lab File ID: BN03748.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 19.09 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1800	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1700	JN
3. 000057-10-3	Hexadecanoic acid	19.60	2400	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.54	880	JN
5. 000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	21.67	850	JN
6. 000629-97-0	Docosane	22.16	1700	JN
7. 000053-19-0	Mitotane	22.20	3200	JN
8. 056554-87-1	16-Octadecenal	23.07	840	JN
9. 000057-11-4	Octadecanoic acid	23.98	1500	JN
10.	unknown	24.14	1000	J
11. 000638-66-4	Octadecanal	24.38	910	JN
12. 040710-42-7	1-Hentetracontanol	24.77	4900	JN
13. 000112-85-6	Docosanoic acid	25.23	2800	JN
14. 000629-94-7	Heneicosane	25.35	2000	JN
15. 000112-95-8	Eicosane	25.93	8400	JN
16.	unknown	25.97	3900	J
17. 000629-97-0	Docosane	26.49	1600	JN
18. 000629-80-1	Hexadecanal	26.80	3900	JN
19. 000630-03-5	Nonacosane	27.14	9300	JN
20. 000661-19-8	1-Docosanol	27.22	3400	JN
21.	unknown	27.33	2800	J
22. 000629-99-2	Pentacosane	28.69	5300	JN
23. 000297-03-0	Cyclotetracosane	28.82	3000	JN
24.	unknown	28.97	3100	J
25. 000083-47-6	.gamma.-Sitosterol	29.37	1600	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-97

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.18

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03741.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 16.43 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-97

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.18

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03741.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 16.43 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	230	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	290	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	320	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	210	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	310	J
207-08-9	Benzo[k]fluoranthene	230	J
50-32-8	Benzo[a]pyrene	260	J
193-39-5	Indeno[1,2,3-cd]pyrene	190	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	190	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-97

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.18

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03741.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 16.43 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.18	500	J
2.	unknown	5.10	1700	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1800	JN
4. 000057-10-3	Hexadecanoic acid	19.58	1200	JN
5. 000629-96-9	1-Eicosanol	24.75	1100	JN
6. 006971-40-0	17-Pentatriacontene	27.18	1800	JN
7. 006624-79-9	1-Dotriacontanol	28.78	640	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-98

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.20

Sample wt/vol: 10.37 (g/ml) G Lab File ID: BN03742.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.58 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-98

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.20

Sample wt/vol: 10.37 (g/ml) G Lab File ID: BN03742.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.58 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	140	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	790	JB
206-44-0	Fluoranthene	120	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	190	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	130	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-98

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.20

Sample wt/vol: 10.37 (g/ml) G Lab File ID: BN03742.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 10.58 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1600	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	1800	JN
3. 000057-10-3	Hexadecanoic acid	19.59	1500	JN
4. 018435-45-5	1-Nonadecene	23.50	7900	JN
5. 006624-79-9	1-Dotriacontanol	24.75	1400	JN
6.	unknown	25.58	1600	J
7. 000629-78-7	Heptadecane	25.91	540	JN
8. 000629-96-9	1-Eicosanol	25.94	770	JN
9. 000629-80-1	Hexadecanal	26.78	520	JN
10. 007098-22-8	Tetratetracontane	27.11	830	JN
11. 000629-96-9	1-Eicosanol	27.18	2400	JN
12. 007390-81-0	Oxirane, hexadecyl-	28.24	610	JN
13. 006971-40-0	17-Pentatriacontene	28.78	1600	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03743.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 6.65 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03743.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 6.65 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	230	J
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	170	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	180	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	110	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	250	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	250	J
207-08-9	Benzo[k]fluoranthene	160	J
50-32-8	Benzo[a]pyrene	120	J
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-99

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03743.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 6.65 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 19 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.09	1500	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2900	JN
3.	000057-10-3	Hexadecanoic acid	19.57	470	JN
4.	000112-92-5	1-Octadecanol	20.58	410	JN
5.	004292-19-7	Dodecane, 1-iodo-	22.83	410	JN
6.	000506-52-5	1-Hexacosanol	24.13	640	JN
7.	006765-39-5	1-Heptadecene	24.75	2400	JN
8.		unknown	25.24	570	J
9.	000593-45-3	Octadecane	25.92	1400	JN
10.		unknown	25.95	3900	J
11.		unknown	26.04	430	J
12.	056554-89-3	14-Octadecenal	26.78	2100	JN
13.	000629-78-7	Heptadecane	27.12	2200	JN
14.	001599-67-3	1-Docosene	27.19	2600	JN
15.		unknown	27.31	720	J
16.	077899-10-6	(Z)14-Tricosenyl formate	28.25	3800	JN
17.	000544-76-3	Hexadecane	28.66	1100	JN
18.	000629-96-9	1-Eicosanol	28.79	2900	JN
19.		unknown	28.93	1700	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-100

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.24

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03744.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.45 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	230	J
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	290	J
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-100

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.24

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03744.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.45 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	140	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	260	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	150	J
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-100

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.24

Sample wt/vol: 9.92 (g/ml) G Lab File ID: BN03744.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.45 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 15 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1700	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	620	JN
3. 000057-10-3	Hexadecanoic acid	19.59	1800	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.53	560	JN
5. 002091-29-4	9-Hexadecenoic acid	21.05	850	JN
6.	unknown	21.44	1600	J
7. 000112-88-9	1-Octadecene	23.49	7700	JN
8. 000112-92-5	1-Octadecanol	24.13	510	JN
9.	unknown	24.54	990	J
10. 000506-52-5	1-Hexacosanol	24.75	1100	JN
11. 001454-84-8	1-Nonadecanol	25.94	640	JN
12. 000629-78-7	Heptadecane	27.11	530	JN
13. 001454-84-8	1-Nonadecanol	27.18	2000	JN
14. 056554-87-1	16-Octadecenal	28.24	500	JN
15. 006971-40-0	17-Pentatriacontene	28.78	1400	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-101

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.26

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03745.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.11 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-101

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.26

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03745.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.11 decanted:(Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	120	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-101

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.26

Sample wt/vol: 10.13 (g/ml) G Lab File ID: BN03745.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 14.11 decanted: (Y/N) N Date Extracted: 9/2/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1900	J
2.	unknown	18.85	2000	J
3. 000057-10-3	Hexadecanoic acid	19.57	680	JN
4. 001454-84-8	1-Nonadecanol	23.49	6100	JN
5.	unknown	24.61	1300	J
6. 000629-96-9	1-Eicosanol	24.75	1800	JN
7.	unknown	25.57	900	J
8. 000661-19-8	1-Docosanol	27.18	1600	JN
9. 006971-40-0	17-Pentatriacontene	28.78	840	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-102

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.28

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03746.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.33 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-102

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.28

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03746.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.33 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-102

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4762 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4762.28

Sample wt/vol: 10.39 (g/ml) G Lab File ID: BN03746.D

Level: (low/med) LOW Date Received: 8/31/99

% Moisture: 15.33 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/8/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.31	530	J
2.	unknown	5.09	1400	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1700	JN
4. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
5. 010544-50-0	Sulfur, mol. (S8)	20.54	510	JN
6. 001454-84-8	1-Nonadecanol	23.49	5700	JN
7. 000661-19-8	1-Docosanol	24.76	770	JN
8. 000629-96-9	1-Eicosanol	27.19	1700	JN
9.	unknown	28.67	1300	J
10. 000629-96-9	1-Eicosanol	28.77	1000	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-103

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.02

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03757.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.51 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-103

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.02

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03757.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.51 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1300	B
206-44-0	Fluoranthene	430	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	400	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	200	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	260	J
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	210	J
207-08-9	Benzo[k]fluoranthene	210	J
50-32-8	Benzo[a]pyrene	190	J
193-39-5	Indeno[1,2,3-cd]pyrene	120	J
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	130	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-103

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.02

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03757.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.51 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.31	620	J
2.	unknown	5.09	1600	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1900	JN
4. 000057-10-3	Hexadecanoic acid	19.58	1800	JN
5. 001002-84-2	Pentadecanoic acid	21.17	560	JN
6. 001454-85-9	1-Heptadecanol	22.09	560	JN
7. 000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	22.18	550	JN
8. 056554-90-6	13-Octadecenal	23.07	650	JN
9. 000112-85-6	Docosanoic acid	23.96	760	JN
10. 015965-99-8	Oxirane, [(hexadecyloxy)methyl]-	24.13	730	JN
11. 000638-66-4	Octadecanal	24.38	660	JN
12.	unknown	24.76	3800	J
13. 000112-85-6	Docosanoic acid	25.21	630	JN
14. 000629-97-0	Docosane	25.92	5100	JN
15. 000297-03-0	Cyclotetracosane	25.96	4300	JN
16. 000000-00-0	2-Heptacosanone	26.05	580	JN
17. 000000-00-0	1-Hexacosanal	26.78	5300	JN
18. 000638-68-6	Triacontane	27.12	3900	JN
19. 000629-96-9	1-Eicosanol	27.20	5500	JN
20. 000000-00-0	2-Heptacosanone	27.31	1100	JN
21. 000629-78-7	Heptadecane	28.66	2100	JN
22. 000629-96-9	1-Eicosanol	28.79	3200	JN
23.	unknown	28.94	1600	J
24. 000083-47-6	.gamma.-Sitosterol	29.34	2300	JN
25. 000127-22-0	Taraxerol	29.64	560	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-104

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.04

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03764.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 7.18 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	290	J
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	180	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	880	J
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-104

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.04

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03764.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 7.18 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	590	J
120-12-7	Anthracene	400	J
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	2700	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	3100	
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	2300	
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	2600	
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	3500	
207-08-9	Benzo[k]fluoranthene	3000	
50-32-8	Benzo[a]pyrene	3600	
193-39-5	Indeno[1,2,3-cd]pyrene	1900	
53-70-3	Dibenz[a,h]anthracene	730	J
191-24-2	Benzo[g,h,i]perylene	1800	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-104

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.04

Sample wt/vol: 9.95 (g/ml) G Lab File ID: BN03764.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 7.18 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.08	1600	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	2500	JN
3. 000057-10-3	Hexadecanoic acid	19.58	900	JN
4. 000112-95-8	Eicosane	19.88	630	JN
5.	unknown	20.46	490	J
6. 005737-13-3	Cyclopenta(def)phenanthrenone	20.54	630	JN
7. 000238-84-6	11H-Benzo[a]fluorene	21.83	930	JN
8. 003353-12-6	Pyrene, 4-methyl-	22.02	540	JN
9. 003442-78-2	Pyrene, 2-methyl-	22.20	510	JN
10. 000082-05-3	7H-Benz[de]anthracen-7-one	22.87	910	JN
11. 000239-35-0	Benzo[b]naphtho[2,1-d]thiophene	23.07	670	JN
12.	unknown	23.15	680	J
13. 001454-84-8	1-Nonadecanol	23.50	6900	JN
14.	unknown	23.98	500	J
15. 002381-31-9	Benz[a]anthracene, 8-methyl-	24.38	990	JN
16. 000629-96-9	1-Eicosanol	24.76	1300	JN
17. 000198-55-0	Perylene	25.76	1100	JN
18.	unknown	25.95	890	J
19. 000205-99-2	Benz[e]acephenanthrylene	26.06	2600	JN
20.	unknown	26.54	520	J
21.	unknown	26.79	490	J
22. 000629-96-9	1-Eicosanol	27.19	1900	JN
23.	unknown	27.94	840	J
24.	unknown	28.10	560	J
25. 077899-03-7	1-Heneicosyl formate	28.79	940	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-105

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.06

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03763.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 5.69 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	150	J
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-105

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.06

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03763.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 5.69 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	470	J
120-12-7	Anthracene	170	J
84-74-2	Di-n-butylphthalate	560	JB
206-44-0	Fluoranthene	850	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	920	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	500	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	660	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	510	J
207-08-9	Benzo[k]fluoranthene	450	J
50-32-8	Benzo[a]pyrene	520	J
193-39-5	Indeno[1,2,3-cd]pyrene	240	J
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	250	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-105

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.06

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03763.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 5.69 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 18 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.08	1700	J
2.	unknown	18.84	930	J
3. 000057-10-3	Hexadecanoic acid	19.57	590	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.54	1200	JN
5.	unknown	23.07	450	J
6.	unknown	24.13	460	J
7.	unknown	24.63	3200	J
8. 006624-79-9	1-Dotriacontanol	24.76	2200	JN
9. 055045-08-4	Dodecane, 2-methyl-6-propyl-	25.91	510	JN
10.	unknown	25.94	1200	J
11. 000192-97-2	Benzo[e]pyrene	26.03	680	JN
12. 000638-66-4	Octadecanal	26.77	680	JN
13. 000544-76-3	Hexadecane	27.11	760	JN
14. 000629-96-9	1-Eicosanol	27.19	2400	JN
15. 000000-00-0	2-Heptacosanone	27.31	470	JN
16.	unknown	27.93	550	J
17. 077899-10-6	(Z)14-Tricosenyl formate	28.24	990	JN
18. 006971-40-0	17-Pentatriacontene	28.78	1200	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-106

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03765.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 14.89 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	140	J
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-106

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03765.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 14.89 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	160	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	350	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	430	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	240	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	350	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	370	J
207-08-9	Benzo[k]fluoranthene	270	J
50-32-8	Benzo[a]pyrene	320	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-106

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.08

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03765.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 14.89 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.09	1700	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2000	JN
3.	000057-10-3	Hexadecanoic acid	19.58	880	JN
4.	000629-76-5	1-Pentadecanol	20.57	490	JN
5.	055045-08-4	Dodecane, 2-methyl-6-propyl-	22.84	500	JN
6.	002136-70-1	Ethanol, 2-(tetradecyloxy)-	24.13	580	JN
7.	006971-40-0	17-Pentatriacontene	24.76	1200	JN
8.	000629-94-7	Heneicosane	25.91	660	JN
9.	057289-07-3	Isoheptadecanol	25.95	1200	JN
10.	000638-66-4	Octadecanal	26.78	720	JN
11.	013475-76-8	Docosane, 11-butyl-	27.12	910	JN
12.	000629-96-9	1-Eicosanol	27.19	1800	JN
13.		unknown	27.94	690	J
14.	056554-90-6	13-Octadecenal	28.25	800	JN
15.	025154-56-7	Nonacosanol	28.79	700	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-107

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03753.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.3 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-107

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03753.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.3 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	660	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	310	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-107

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.10

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03753.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.3 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.09	1400	J
2.	000084-64-0	1,2-Benzenedicarboxylic acid, but	18.84	1100	JN
3.	000057-10-3	Hexadecanoic acid	19.57	640	JN
4.	074685-30-6	5-Eicosene, (E)-	23.48	6100	JN
5.	000629-96-9	1-Eicosanol	24.75	670	JN
6.	000661-19-8	1-Docosanol	27.18	1600	JN
7.	000506-52-5	1-Hexacosanol	28.77	820	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-108

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.12

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03754.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.46 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-108

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.12

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03754.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.46 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	180	J
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1700	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-108

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.12

Sample wt/vol: 10 (g/ml) G Lab File ID: BN03754.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.46 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.18	470	JN
2. 000107-88-0	1,3-Butanediol	4.32	660	JN
3.	unknown	5.10	1600	J
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2600	JN
5. 000057-10-3	Hexadecanoic acid	19.58	1500	JN
6. 001454-84-8	1-Nonadecanol	23.49	8500	JN
7. 000629-96-9	1-Eicosanol	24.75	1500	JN
8. 001599-67-3	1-Docosene	27.18	2500	JN
9. 040710-42-7	1-Hentetracontanol	28.77	1200	JN

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-109

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.14

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03755.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 15.69 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-109

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.14

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03755.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 15.69 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	300	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-109

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.14

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03755.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 15.69 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000513-85-9	2,3-Butanediol	4.18	680	JN
2. 019132-06-0	2,3-Butanediol, [S-(R@,R@)]-	4.32	780	JN
3.	unknown	5.10	2300	J
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	2100	JN
5. 000057-10-3	Hexadecanoic acid	19.59	2200	JN
6. 010544-50-0	Sulfur, mol. (S8)	20.53	1200	JN
7. 000057-11-4	Octadecanoic acid	21.17	620	JN
8. 000491-59-8	1,8,9-Anthracenetriol, 3-methyl-	22.50	710	JN
9. 074685-30-6	5-Eicosene, (E)-	23.49	10000	JN
10. 000506-52-5	1-Hexacosanol	24.13	630	JN
11. 000112-92-5	1-Octadecanol	24.75	2700	JN
12.	unknown	25.36	690	J
13. 000000-00-0	1-Hexacosanal	25.59	2600	JN
14. 000544-76-3	Hexadecane	25.92	1700	JN
15. 001454-84-8	1-Nonadecanol	25.94	5300	JN
16. 000000-00-0	1-Hexacosanal	26.78	6100	JN
17. 000629-78-7	Heptadecane	27.12	1500	JN
18. 001599-67-3	1-Docosene	27.19	6600	JN
19. 000000-00-0	2-Heptacosanone	27.30	910	JN
20.	unknown	27.93	670	J
21. 077899-10-6	(Z)14-Tricosenyl formate	28.24	2100	JN
22.	unknown	28.67	2000	J
23. 000661-19-8	1-Docosanol	28.79	3400	JN
24.	unknown	28.93	1300	J
25. 000083-47-6	.gamma.-Sitosterol	29.33	1300	JN

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-110

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.16

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03766.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 8.61 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	200	J
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	120	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	650	J
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-110

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.16

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03766.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 8.61 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	760	J
120-12-7	Anthracene	350	J
84-74-2	Di-n-butylphthalate	1200	B
206-44-0	Fluoranthene	2100	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	2400	
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1600	
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1900	
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	2500	
207-08-9	Benzo[k]fluoranthene	2200	
50-32-8	Benzo[a]pyrene	2600	
193-39-5	Indeno[1,2,3-cd]pyrene	960	J
53-70-3	Dibenz[a,h]anthracene	350	J
191-24-2	Benzo[g,h,i]perylene	920	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-110

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.16

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03766.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 8.61 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 18 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1400	J
2.	unknown	16.10	430	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2200	JN
4. 005737-13-3	Cyclopenta(def)phenanthrenone	20.54	430	JN
5. 003442-78-2	Pyrene, 2-methyl-	21.83	820	JN
6. 003353-12-6	Pyrene, 4-methyl-	22.21	490	JN
7. 000082-05-3	7H-Benz[de]anthracen-7-one	22.87	480	JN
8. 000239-35-0	Benzo[b]naphtho[2,1-d]thiophene	23.07	610	JN
9.	unknown	23.15	530	J
10. 001454-84-8	1-Nonadecanol	23.49	7400	JN
11. 006971-40-0	17-Pentatriacontene	24.14	510	JN
12. 002498-77-3	Benz[a]anthracene, 1-methyl-	24.38	790	JN
13. 001454-85-9	1-Heptadecanol	24.76	980	JN
14. 000198-55-0	Perylene	25.76	800	JN
15.	unknown	25.94	940	J
16. 000192-97-2	Benzo[e]pyrene	26.05	1900	JN
17. 001599-67-3	1-Docosene	27.19	2000	JN
18. 077899-03-7	1-Heneicosyl formate	28.79	710	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-111

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.18

Sample wt/vol: 10.38 (g/ml) G Lab File ID: BN03760.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 9.08 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	150	J
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-111

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.18

Sample wt/vol: 10.38 (g/ml) G Lab File ID: BN03760.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 9.08 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	420	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	520	JB
206-44-0	Fluoranthene	630	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	740	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	370	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	500	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	390	J
207-08-9	Benzo[k]fluoranthene	320	J
50-32-8	Benzo[a]pyrene	390	J
193-39-5	Indeno[1,2,3-cd]pyrene	200	J
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	220	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-111

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.18

Sample wt/vol: 10.38 (g/ml) G Lab File ID: BN03760.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 9.08 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.09	1300	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	910	JN
3. 000057-10-3	Hexadecanoic acid	19.57	550	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.55	1300	JN
5.	unknown	23.07	510	J
6. 006624-79-9	1-Dotriacontanol	24.13	600	JN
7. 018435-45-5	1-Nonadecene	24.76	1800	JN
8.	unknown	25.20	560	J
9. 000629-92-5	Nonadecane	25.91	760	JN
10. 001454-84-8	1-Nonadecanol	25.94	770	JN
11. 000205-82-3	Benzo[j]fluoranthene	26.03	480	JN
12.	unknown	26.77	470	J
13. 000630-02-4	Octacosane	27.11	990	JN
14. 000629-96-9	1-Eicosanol	27.19	1800	JN
15.	unknown	27.93	530	J
16.	unknown	28.65	430	J
17.	unknown	28.78	920	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-112

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.20

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03761.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 20.82 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-112

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.20

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03761.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 20.82 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	150	J
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	450	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1000	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	750	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1800	
117-81-7	bis(2-Ethylhexyl)phthalate	180	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	2200	
207-08-9	Benzo[k]fluoranthene	1300	
50-32-8	Benzo[a]pyrene	830	J
193-39-5	Indeno[1,2,3-cd]pyrene	450	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	420	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-112

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.20

Sample wt/vol: 10.16 (g/ml) G Lab File ID: BN03761.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 20.82 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 14 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.08	1200	J
2.	000084-64-0	1,2-Benzenedicarboxylic acid, but	18.84	2400	JN
3.	000057-10-3	Hexadecanoic acid	19.58	1400	JN
4.	010544-50-0	Sulfur, mol. (S8)	20.54	1400	JN
5.	074685-30-6	5-Eicosene, (E)-	23.48	6500	JN
6.	006971-40-0	17-Pentatriacontene	24.76	1800	JN
7.	000629-78-7	Heptadecane	25.91	980	JN
8.		unknown	25.94	1000	J
9.	000198-55-0	Perylene	26.03	1400	JN
10.	000629-94-7	Heneicosane	27.11	650	JN
11.	000112-88-9	1-Octadecene	27.19	1800	JN
12.		unknown	27.93	550	J
13.	000506-52-5	1-Hexacosanol	28.78	1100	JN
14.	000083-47-6	.gamma.-Sitosterol	29.32	670	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-113

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.22

Sample wt/vol: 10.29 (g/ml) G Lab File ID: BN03756.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.63 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-113

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.22

Sample wt/vol: 10.29 (g/ml) G Lab File ID: BN03756.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.63 decanted:(Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	2300	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-113

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4774 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4774.22

Sample wt/vol: 10.29 (g/ml) G Lab File ID: BN03756.D

Level: (low/med) LOW Date Received: 9/7/99

% Moisture: 12.63 decanted: (Y/N) N Date Extracted: 9/8/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/9/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.10	1200	J
2. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	3500	JN
3. 000057-10-3	Hexadecanoic acid	19.58	790	JN
4. 010544-50-0	Sulfur, mol. (S8)	20.54	2600	JN
5. 000124-25-4	Tetradecanal	23.06	460	JN
6. 001454-84-8	1-Nonadecanol	23.49	7100	JN
7. 000506-52-5	1-Hexacosanol	24.13	470	JN
8. 000629-96-9	1-Eicosanol	24.75	1100	JN
9. 001599-67-3	1-Docosene	27.18	1800	JN
10. 006624-79-9	1-Dotriacontanol	28.77	850	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-114

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.02

Sample wt/vol: 10.45 (g/ml) G Lab File ID: BN03810.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.69 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-114

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.02

Sample wt/vol: 10.45 (g/ml) G Lab File ID: BN03810.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.69 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	530	J
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	330	J
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	800	J
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	8300	
120-12-7	Anthracene	2200	
84-74-2	Di-n-butylphthalate	730	JB
206-44-0	Fluoranthene	9300	
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	7100	
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	4100	
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	3900	
117-81-7	bis(2-Ethylhexyl)phthalate	300	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	3100	
207-08-9	Benzo[k]fluoranthene	2800	
50-32-8	Benzo[a]pyrene	3300	
193-39-5	Indeno[1,2,3-cd]pyrene	1700	
53-70-3	Dibenz[a,h]anthracene	680	J
191-24-2	Benzo[g,h,i]perylene	1700	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-114

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.02

Sample wt/vol: 10.45 (g/ml) G Lab File ID: BN03810.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.69 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.07	1300	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1500	JN
3.	000832-69-9	Phenanthrene, 1-methyl-	19.22	740	JN
4.	000613-12-7	Anthracene, 2-methyl-	19.27	970	JN
5.		unknown	19.44	1500	J
6.	000612-94-2	Naphthalene, 2-phenyl-	19.87	800	JN
7.	000243-42-5	Benzo[b]naphtho[2,3-d]furan	21.38	660	JN
8.	000243-17-4	11H-Benzo[b]fluorene	21.83	1400	JN
9.		unknown	21.96	830	J
10.	000112-92-5	1-Octadecanol	22.09	630	JN
11.	000082-05-3	7H-Benz[de]anthracen-7-one	22.87	800	JN
12.	000239-35-0	Benzo[b]naphtho[2,1-d]thiophene	23.07	940	JN
13.		unknown	23.14	1100	J
14.	074685-30-6	5-Eicosene, (E)-	23.49	7700	JN
15.	002381-31-9	Benz[a]anthracene, 8-methyl-	24.37	950	JN
16.	019047-85-9	Phosphonic acid, dioctadecyl este	24.76	1900	JN
17.	000198-55-0	Perylene	25.76	740	JN
18.	080249-75-8	3,4-Epoxy-4a-ethyl-2,3,4,4a,5,6-h	25.94	730	JN
19.	000205-99-2	Benz[e]acephenanthrylene	26.05	2000	JN
20.	000000-00-0	1-Hexacosanal	26.77	1100	JN
21.	000629-96-9	1-Eicosanol	27.19	1700	JN
22.		unknown	27.93	640	J
23.		unknown	28.24	850	J
24.		unknown	28.68	2300	J
25.	000629-96-9	1-Eicosanol	28.78	960	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-115

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03814.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.56 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-115

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03814.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.56 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	350	J
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	640	JB
206-44-0	Fluoranthene	580	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	720	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	280	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	400	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	270	J
207-08-9	Benzo[k]fluoranthene	290	J
50-32-8	Benzo[a]pyrene	300	J
193-39-5	Indeno[1,2,3-cd]pyrene	160	J
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	170	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-115

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.04

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03814.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.56 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 12 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1300	JN
2. 007704-34-9	Sulfur	20.57	3400	JN
3. 006971-40-0	17-Pentatriacontene	24.76	1300	JN
4. 000629-92-5	Nonadecane	25.91	450	JN
5. 001454-84-8	1-Nonadecanol	25.95	1300	JN
6. 000205-82-3	Benzo[j]fluoranthene	26.04	430	JN
7. 000629-80-1	Hexadecanal	26.78	530	JN
8. 000629-97-0	Docosane	27.11	880	JN
9. 000297-03-0	Cyclotetracosane	27.19	1600	JN
10.	unknown	28.18	420	J
11.	unknown	28.24	690	J
12. 000930-02-9	Octadecane, 1-(ethenyloxy)-	28.78	1100	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-116

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03853.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 11.76 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-116

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03853.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 11.76 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	340	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	600	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	640	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	310	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	410	J
117-81-7	bis(2-Ethylhexyl)phthalate	310	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	420	J
207-08-9	Benzo[k]fluoranthene	320	J
50-32-8	Benzo[a]pyrene	330	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-116

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03853.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 11.76 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2400	JN
2. 000057-10-3	Hexadecanoic acid	19.58	860	JN
3. 001454-84-8	1-Nonadecanol	23.48	7300	JN
4. 001599-67-3	1-Docosene	24.76	1000	JN
5. 000646-31-1	Tetracosane	25.91	1000	JN
6.	unknown	25.94	1100	J
7. 000205-99-2	Benz[e]acephenanthrylene	26.04	530	JN
8. 000629-80-1	Hexadecanal	26.78	600	JN
9. 000630-06-8	Hexatriacontane	27.11	1200	JN
10. 000629-96-9	1-Eicosanol	27.19	1800	JN
11.	unknown	27.93	850	J
12. 056554-89-3	14-Octadecenal	28.24	470	JN
13. 006971-40-0	17-Pentatriacontene	28.78	620	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-117

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.08

Sample wt/vol: 10.56 (g/ml) G Lab File ID: BN03849.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 10.58 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-117

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.08

Sample wt/vol: 10.56 (g/ml) G Lab File ID: BN03849.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 10.58 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	450	JB
206-44-0	Fluoranthene	590	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	590	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	300	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	370	J
117-81-7	bis(2-Ethylhexyl)phthalate	300	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	310	J
207-08-9	Benzo[k]fluoranthene	270	J
50-32-8	Benzo[a]pyrene	300	J
193-39-5	Indeno[1,2,3-cd]pyrene	130	J
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	120	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-117

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.08

Sample wt/vol: 10.56 (g/ml) G Lab File ID: BN03849.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 10.58 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 17 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	18.83	950	J
2.	000057-10-3	Hexadecanoic acid	19.59	1500	JN
3.	000072-54-8	1,1-Dichloro-2,2-bis(p-chlorophen	22.18	810	JN
4.	074685-30-6	5-Eicosene, (E)-	23.48	8100	JN
5.	000112-85-6	Docosanoic acid	23.96	730	JN
6.	006624-79-9	1-Dotriacontanol	24.13	520	JN
7.	000112-92-5	1-Octadecanol	24.75	2100	JN
8.	000629-97-0	Docosane	25.92	1300	JN
9.	000629-76-5	1-Pentadecanol	25.94	2900	JN
10.	000192-97-2	Benzo[e]pyrene	26.04	660	JN
11.	056554-89-3	14-Octadecenal	26.78	2800	JN
12.	000544-76-3	Hexadecane	27.12	1900	JN
13.	000629-96-9	1-Eicosanol	27.19	3300	JN
14.		unknown	27.31	760	J
15.	056554-86-0	17-Octadecenal	28.25	830	JN
16.	000593-45-3	Octadecane	28.65	1000	JN
17.	000629-96-9	1-Eicosanol	28.79	1300	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-118

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.10

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03811.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.91 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-118

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.10

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03811.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.91 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	600	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-118

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.10

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03811.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.91 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 21 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	4.16	520	J
2.	unknown	5.07	1600	J
3. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1300	JN
4. 000057-10-3	Hexadecanoic acid	19.58	850	JN
5.	unknown	20.55	1900	J
6. 000109-29-5	Oxacycloheptadecan-2-one	21.04	830	JN
7. 001454-84-8	1-Nonadecanol	23.48	7600	JN
8.	unknown	24.75	3400	J
9. 056554-86-0	17-Octadecenal	25.59	2500	JN
10. 007098-22-8	Tetratetracontane	25.91	1800	JN
11.	unknown	25.95	3500	J
12. 000000-00-0	1-Hexacosanal	26.78	5300	JN
13. 007098-22-8	Tetratetracontane	27.11	900	JN
14. 000629-96-9	1-Eicosanol	27.19	4100	JN
15.	unknown	27.30	510	J
16.	unknown	27.46	760	J
17.	unknown	27.93	840	J
18. 000638-66-4	Octadecanal	28.24	1100	JN
19. 014021-23-9	D-Friedoolean-14-ene, 3-methoxy	28.66	780	JN
20. 000629-96-9	1-Eicosanol	28.78	1500	JN
21. 000083-47-6	.gamma.-Sitosterol	29.33	1800	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-119

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.12(1:5)

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03900.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 2.51 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	5000	U
62-75-9	N-nitroso-dimethylamine	5000	U
62-53-3	Aniline	5000	U
108-95-2	Phenol	5000	U
111-44-4	bis(2-Chloroethyl)ether	5000	U
95-57-8	2-Chlorophenol	5000	U
541-73-1	1,3-Dichlorobenzene	5000	U
106-46-7	1,4-Dichlorobenzene	5000	U
100-51-6	Benzyl alcohol	5000	U
95-50-1	1,2-Dichlorobenzene	5000	U
95-48-7	2-Methylphenol	5000	U
108-60-1	bis(2-chloroisopropyl)ether	5000	U
106-44-5	4-Methylphenol	5000	U
621-64-7	n-Nitroso-di-n-propylamine	5000	U
67-72-1	Hexachloroethane	5000	U
98-95-3	Nitrobenzene	5000	U
78-59-1	Isophorone	5000	U
88-75-5	2-Nitrophenol	5000	U
105-67-9	2,4-Dimethylphenol	5000	U
111-91-1	bis(2-Chloroethoxy)methane	5000	U
120-83-2	2,4-Dichlorophenol	5000	U
65-85-0	Benzoic Acid	5000	U
120-82-1	1,2,4-Trichlorobenzene	5000	U
91-20-3	Naphthalene	5000	U
106-47-8	4-Chloroaniline	5000	U
87-68-3	Hexachlorobutadiene	5000	U
59-50-7	4-Chloro-3-methylphenol	5000	U
91-57-6	2-Methylnaphthalene	5000	U
77-47-4	Hexachlorocyclopentadiene	5000	U
88-06-2	2,4,6-Trichlorophenol	5000	U
95-95-4	2,4,5-Trichlorophenol	5000	U
91-58-7	2-Chloronaphthalene	5000	U
88-74-4	2-Nitroaniline	5000	U
131-11-3	Dimethylphthalate	5000	U
208-96-8	Acenaphthylene	5000	U
606-20-2	2,6-Dinitrotoluene	5000	U
99-09-2	3-Nitroaniline	5000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-119

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.12(1:5)

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03900.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 2.51 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	5000	U
51-28-5	2,4-Dinitrophenol	5000	U
132-64-9	Dibenzofuran	5000	U
100-02-7	4-Nitrophenol	5000	U
121-14-2	2,4-Dinitrotoluene	5000	U
84-66-2	Diethylphthalate	5000	U
86-73-7	Fluorene	5000	U
7005-72-3	4-Chlorophenyl-phenylether	5000	U
100-01-6	4-Nitroaniline	5000	U
534-52-1	4,6-Dinitro-2-methylphenol	5000	U
86-30-6	n-Nitrosodiphenylamine	5000	U
103-33-3	Azobenzene	5000	U
101-55-3	4-Bromophenyl-phenylether	5000	U
118-74-1	Hexachlorobenzene	5000	U
87-86-5	Pentachlorophenol	5000	U
85-01-8	Phenanthrene	5000	U
120-12-7	Anthracene	5000	U
84-74-2	Di-n-butylphthalate	510	JBD
206-44-0	Fluoranthene	5000	U
92-87-5	Benzidine	5000	U
129-00-0	Pyrene	730	JD
85-68-7	Butylbenzylphthalate	5000	U
56-55-3	Benzo[a]anthracene	5000	U
91-94-1	3,3'-Dichlorobenzidine	5000	U
218-01-9	Chrysene	5000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1500	JBD
117-84-0	Di-n-octylphthalate	5000	U
205-99-2	Benzo[b]fluoranthene	5000	U
207-08-9	Benzo[k]fluoranthene	5000	U
50-32-8	Benzo[a]pyrene	5000	U
193-39-5	Indeno[1,2,3-cd]pyrene	5000	U
53-70-3	Dibenz[a,h]anthracene	5000	U
191-24-2	Benzo[g,h,i]perylene	5000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-119

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.12(1:5)

Sample wt/vol: 10.33 (g/ml) G Lab File ID: BN03900.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 2.51 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 019047-85-9	Phosphonic acid, dioctadecyl este	23.46	5300	JND

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-120

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.14

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03815.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.24 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	180	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-120

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.14

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03815.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.24 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	550	JB
206-44-0	Fluoranthene	320	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	440	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	220	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	310	J
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	170	J
207-08-9	Benzo[k]fluoranthene	180	J
50-32-8	Benzo[a]pyrene	210	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-120

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.14

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03815.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.24 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 13 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 017312-62-8	Decane, 5-propyl-	14.36	890	JN
2. 055045-11-9	Tridecane, 5-propyl-	16.59	980	JN
3. 001921-70-6	Pentadecane, 2,6,10,14-tetramet	17.19	2000	JN
4.	unknown	18.84	1300	J
5. 010544-50-0	Sulfur, mol. (S8)	20.55	1800	JN
6. 006971-40-0	17-Pentatriacontene	24.13	470	JN
7. 000506-52-5	1-Hexacosanol	24.76	1300	JN
8. 000629-94-7	Heneicosane	25.91	550	JN
9. 000112-92-5	1-Octadecanol	25.94	600	JN
10. 000638-66-4	Octadecanal	26.78	520	JN
11. 000630-06-8	Hexatriacontane	27.11	770	JN
12. 000629-96-9	1-Eicosanol	27.19	2200	JN
13. 000661-19-8	1-Docosanol	28.78	870	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-121

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.16

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03812.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.09 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	240	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-121

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.16

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03812.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.09 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	190	J
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	260	J
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	540	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-121

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.16

Sample wt/vol: 10.2 (g/ml) G Lab File ID: BN03812.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 14.09 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.07	1400	J
2.	017301-23-4	Undecane, 2,6-dimethyl-	10.94	1500	JN
3.		unknown	11.78	2400	J
4.	029949-27-7	n-Amylcyclohexane	12.79	1200	JN
5.		unknown	13.25	1000	J
6.	000582-16-1	Naphthalene, 2,7-dimethyl-	13.74	1100	JN
7.	000581-40-8	Naphthalene, 2,3-dimethyl-	13.98	980	JN
8.	000575-37-1	Naphthalene, 1,7-dimethyl-	14.01	2100	JN
9.	000581-40-8	Naphthalene, 2,3-dimethyl-	14.23	960	JN
10.	003891-98-3	Dodecane, 2,6,10-trimethyl-	14.36	2800	JN
11.	000000-00-0	Decahydro-4,4,8,9,10-pentameth	14.51	1300	JN
12.		unknown	15.53	1300	J
13.	002245-38-7	Naphthalene, 1,6,7-trimethyl-	15.61	960	JN
14.		unknown	15.66	1300	J
15.	055045-11-9	Tridecane, 5-propyl-	16.60	3600	JN
16.		unknown	16.77	1100	J
17.	001921-70-6	Pentadecane, 2,6,10,14-tetramet	17.20	6000	JN
18.		unknown	17.41	990	J
19.		unknown	18.85	2900	J
20.	000593-45-3	Octadecane	18.96	1100	JN
21.	010544-50-0	Sulfur, mol. (S8)	20.55	2200	JN
22.	074685-30-6	5-Eicosene, (E)-	23.49	7100	JN
23.		unknown	24.59	1000	J
24.	000112-92-5	1-Octadecanol	24.75	1300	JN
25.	000629-96-9	1-Eicosanol	27.19	1800	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-122

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.18(1:10)

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03904.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.64 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	12000	U
62-75-9	N-nitroso-dimethylamine	12000	U
62-53-3	Aniline	12000	U
108-95-2	Phenol	12000	U
111-44-4	bis(2-Chloroethyl)ether	12000	U
95-57-8	2-Chlorophenol	12000	U
541-73-1	1,3-Dichlorobenzene	12000	U
106-46-7	1,4-Dichlorobenzene	12000	U
100-51-6	Benzyl alcohol	12000	U
95-50-1	1,2-Dichlorobenzene	12000	U
95-48-7	2-Methylphenol	12000	U
108-60-1	bis(2-chloroisopropyl)ether	12000	U
106-44-5	4-Methylphenol	12000	U
621-64-7	n-Nitroso-di-n-propylamine	12000	U
67-72-1	Hexachloroethane	12000	U
98-95-3	Nitrobenzene	12000	U
78-59-1	Isophorone	12000	U
88-75-5	2-Nitrophenol	12000	U
105-67-9	2,4-Dimethylphenol	12000	U
111-91-1	bis(2-Chloroethoxy)methane	12000	U
120-83-2	2,4-Dichlorophenol	12000	U
65-85-0	Benzoic Acid	12000	U
120-82-1	1,2,4-Trichlorobenzene	12000	U
91-20-3	Naphthalene	12000	U
106-47-8	4-Chloroaniline	12000	U
87-68-3	Hexachlorobutadiene	12000	U
59-50-7	4-Chloro-3-methylphenol	12000	U
91-57-6	2-Methylnaphthalene	12000	U
77-47-4	Hexachlorocyclopentadiene	12000	U
88-06-2	2,4,6-Trichlorophenol	12000	U
95-95-4	2,4,5-Trichlorophenol	12000	U
91-58-7	2-Chloronaphthalene	12000	U
88-74-4	2-Nitroaniline	12000	U
131-11-3	Dimethylphthalate	12000	U
208-96-8	Acenaphthylene	7200	JD
606-20-2	2,6-Dinitrotoluene	12000	U
99-09-2	3-Nitroaniline	12000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-122

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.18(1:10)

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03904.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.64 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	12000	U
51-28-5	2,4-Dinitrophenol	12000	U
132-64-9	Dibenzofuran	12000	U
100-02-7	4-Nitrophenol	12000	U
121-14-2	2,4-Dinitrotoluene	12000	U
84-66-2	Diethylphthalate	12000	U
86-73-7	Fluorene	1700	JD
7005-72-3	4-Chlorophenyl-phenylether	12000	U
100-01-6	4-Nitroaniline	12000	U
534-52-1	4,6-Dinitro-2-methylphenol	12000	U
86-30-6	n-Nitrosodiphenylamine	12000	U
103-33-3	Azobenzene	12000	U
101-55-3	4-Bromophenyl-phenylether	12000	U
118-74-1	Hexachlorobenzene	12000	U
87-86-5	Pentachlorophenol	12000	U
85-01-8	Phenanthrene	15000	D
120-12-7	Anthracene	3500	JD
84-74-2	Di-n-butylphthalate	1400	JBD
206-44-0	Fluoranthene	13000	D
92-87-5	Benzidine	12000	U
129-00-0	Pyrene	28000	D
85-68-7	Butylbenzylphthalate	12000	U
56-55-3	Benzo[a]anthracene	11000	JD
91-94-1	3,3'-Dichlorobenzidine	12000	U
218-01-9	Chrysene	14000	D
117-81-7	bis(2-Ethylhexyl)phthalate	12000	U
117-84-0	Di-n-octylphthalate	12000	U
205-99-2	Benzo[b]fluoranthene	7700	JD
207-08-9	Benzo[k]fluoranthene	8500	JD
50-32-8	Benzo[a]pyrene	11000	JD
193-39-5	Indeno[1,2,3-cd]pyrene	2700	JD
53-70-3	Dibenz[a,h]anthracene	12000	U
191-24-2	Benzo[g,h,i]perylene	3100	JD

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-122

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.18(1:10)

Sample wt/vol: 10.57 (g/ml) G Lab File ID: BN03904.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.64 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.84	5000	JD
2. 000613-12-7	Anthracene, 2-methyl-	19.22	6500	JND
3. 000832-71-3	Phenanthrene, 3-methyl-	19.28	8400	JND
4. 000610-48-0	Anthracene, 1-methyl-	19.45	11000	JND
5. 000779-02-2	Anthracene, 9-methyl-	19.50	5600	JND
6. 003674-66-6	Phenanthrene, 2,5-dimethyl-	20.40	6900	JND
7.	unknown	20.46	5800	JD
8.	unknown	20.85	5800	JD
9.	unknown	21.83	7800	JD
10. 002381-21-7	Pyrene, 1-methyl-	22.03	4900	JND
11. 003442-78-2	Pyrene, 2-methyl-	22.21	6200	JND
12. 002381-21-7	Pyrene, 1-methyl-	22.27	5200	JND
13. 000082-05-3	7H-Benz[de]anthracen-7-one	22.87	5800	JND
14. 019047-85-9	Phosphonic acid, dioctadecyl este	23.47	8200	JND
15. 002381-31-9	Benz[a]anthracene, 8-methyl-	24.38	7500	JND
16. 000192-97-2	Benzo[e]pyrene	26.04	7900	JND

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-123

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.20

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03813.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.9 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	120	J
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-123

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.20

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03813.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.9 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	470	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1900	B
206-44-0	Fluoranthene	220	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	210	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	140	J
117-81-7	bis(2-Ethylhexyl)phthalate	140	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-123

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.20

Sample wt/vol: 10.11 (g/ml) G Lab File ID: BN03813.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.9 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 17 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	5.07	1600	J
2.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	3100	JN
3.	010544-50-0	Sulfur, mol. (S8)	20.55	2500	JN
4.	000544-76-3	Hexadecane	22.84	490	JN
5.	074685-30-6	5-Eicosene, (E)-	23.49	7500	JN
6.	006971-40-0	17-Pentatriacontene	24.13	460	JN
7.	000506-52-5	1-Hexacosanol	24.75	1400	JN
8.	056554-89-3	14-Octadecenal	25.60	1100	JN
9.	000629-97-0	Docosane	25.91	550	JN
10.	000112-92-5	1-Octadecanol	25.94	1100	JN
11.	056554-90-6	13-Octadecenal	26.78	490	JN
12.	000629-94-7	Heneicosane	27.11	760	JN
13.	000629-96-9	1-Eicosanol	27.18	2000	JN
14.		unknown	27.30	450	J
15.	000124-25-4	Tetradecanal	28.24	730	JN
16.	000661-19-8	1-Docosanol	28.78	1100	JN
17.		unknown	28.93	640	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-124

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03816.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.07 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-124

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03816.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.07 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	170	J
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	190	J
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	250	J
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	120	J
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	180	J
117-81-7	bis(2-Ethylhexyl)phthalate	180	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	130	J
207-08-9	Benzo[k]fluoranthene	100	J
50-32-8	Benzo[a]pyrene	140	J
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-124

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.22

Sample wt/vol: 10.77 (g/ml) G Lab File ID: BN03816.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 9.07 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 17 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 017301-33-6	Undecane, 4,8-dimethyl-	14.36	530	JN
2.	unknown	16.59	830	J
3. 001921-70-6	Pentadecane, 2,6,10,14-tetramet	17.19	1600	JN
4. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.85	2800	JN
5. 000057-10-3	Hexadecanoic acid	19.58	760	JN
6. 000112-92-5	1-Octadecanol	20.57	490	JN
7. 004292-19-7	Dodecane, 1-iodo-	22.84	500	JN
8. 001454-84-8	1-Nonadecanol	23.49	9000	JN
9. 006971-40-0	17-Pentatriacontene	24.13	560	JN
10. 006624-79-9	1-Dotriacontanol	24.75	1400	JN
11. 000112-95-8	Eicosane	25.91	440	JN
12. 057289-07-3	Isoheptadecanol	25.95	590	JN
13. 000629-97-0	Docosane	27.11	580	JN
14. 000629-96-9	1-Eicosanol	27.19	2400	JN
15.	unknown	27.94	590	J
16. 001599-67-3	1-Docosene	28.79	1100	JN
17.	unknown	29.34	480	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-125

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.24

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03851.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.72 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-125

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.24

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03851.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.72 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	220	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1800	B
206-44-0	Fluoranthene	430	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	380	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	180	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	240	J
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	210	J
207-08-9	Benzo[k]fluoranthene	200	J
50-32-8	Benzo[a]pyrene	190	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-125

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.24

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03851.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 19.72 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 003622-84-2	Benzenesulfonamide, N-butyl-	18.25	13000	JN
2.	unknown	18.84	1900	J
3. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
4. 000057-11-4	Octadecanoic acid	21.17	600	JN
5. 000629-78-7	Heptadecane	22.83	620	JN
6.	unknown	22.99	530	J
7.	unknown	23.40	2100	J
8. 000112-85-6	Docosanoic acid	23.96	670	JN
9. 006624-79-9	1-Dotriacontanol	24.76	1300	JN
10. 000629-78-7	Heptadecane	25.91	1300	JN
11. 000297-03-0	Cyclotetracosane	25.95	3700	JN
12. 056554-90-6	13-Octadecenal	26.77	1400	JN
13. 000629-97-0	Docosane	27.11	2800	JN
14. 000629-96-9	1-Eicosanol	27.19	2500	JN
15. 000000-00-0	2-Heptacosanone	27.31	610	JN
16.	unknown	27.93	500	J
17.	unknown	28.24	1800	J
18. 000593-45-3	Octadecane	28.65	1400	JN
19. 000629-96-9	1-Eicosanol	28.78	1600	JN
20.	unknown	28.92	1100	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-126

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.26(1:5)

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03901.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.54 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	5900	U
62-75-9	N-nitroso-dimethylamine	5900	U
62-53-3	Aniline	5900	U
108-95-2	Phenol	5900	U
111-44-4	bis(2-Chloroethyl)ether	5900	U
95-57-8	2-Chlorophenol	5900	U
541-73-1	1,3-Dichlorobenzene	5900	U
106-46-7	1,4-Dichlorobenzene	5900	U
100-51-6	Benzyl alcohol	5900	U
95-50-1	1,2-Dichlorobenzene	5900	U
95-48-7	2-Methylphenol	5900	U
108-60-1	bis(2-chloroisopropyl)ether	5900	U
106-44-5	4-Methylphenol	5900	U
621-64-7	n-Nitroso-di-n-propylamine	5900	U
67-72-1	Hexachloroethane	5900	U
98-95-3	Nitrobenzene	5900	U
78-59-1	Isophorone	5900	U
88-75-5	2-Nitrophenol	5900	U
105-67-9	2,4-Dimethylphenol	5900	U
111-91-1	bis(2-Chloroethoxy)methane	5900	U
120-83-2	2,4-Dichlorophenol	5900	U
65-85-0	Benzoic Acid	5900	U
120-82-1	1,2,4-Trichlorobenzene	5900	U
91-20-3	Naphthalene	5900	U
106-47-8	4-Chloroaniline	5900	U
87-68-3	Hexachlorobutadiene	5900	U
59-50-7	4-Chloro-3-methylphenol	5900	U
91-57-6	2-Methylnaphthalene	5900	U
77-47-4	Hexachlorocyclopentadiene	5900	U
88-06-2	2,4,6-Trichlorophenol	5900	U
95-95-4	2,4,5-Trichlorophenol	5900	U
91-58-7	2-Chloronaphthalene	5900	U
88-74-4	2-Nitroaniline	5900	U
131-11-3	Dimethylphthalate	5900	U
208-96-8	Acenaphthylene	3200	JD
606-20-2	2,6-Dinitrotoluene	5900	U
99-09-2	3-Nitroaniline	5900	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-126

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.26(1:5)

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03901.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.54 decanted:(Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	5900	U
51-28-5	2,4-Dinitrophenol	5900	U
132-64-9	Dibenzofuran	5900	U
100-02-7	4-Nitrophenol	5900	U
121-14-2	2,4-Dinitrotoluene	5900	U
84-66-2	Diethylphthalate	5900	U
86-73-7	Fluorene	1000	JD
7005-72-3	4-Chlorophenyl-phenylether	5900	U
100-01-6	4-Nitroaniline	5900	U
534-52-1	4,6-Dinitro-2-methylphenol	5900	U
86-30-6	n-Nitrosodiphenylamine	5900	U
103-33-3	Azobenzene	5900	U
101-55-3	4-Bromophenyl-phenylether	5900	U
118-74-1	Hexachlorobenzene	5900	U
87-86-5	Pentachlorophenol	5900	U
85-01-8	Phenanthrene	6400	D
120-12-7	Anthracene	1600	JD
84-74-2	Di-n-butylphthalate	1800	JBD
206-44-0	Fluoranthene	6300	D
92-87-5	Benzidine	5900	U
129-00-0	Pyrene	12000	D
85-68-7	Butylbenzylphthalate	5900	U
56-55-3	Benzo[a]anthracene	5400	JD
91-94-1	3,3'-Dichlorobenzidine	5900	U
218-01-9	Chrysene	7200	D
117-81-7	bis(2-Ethylhexyl)phthalate	5900	U
117-84-0	Di-n-octylphthalate	5900	U
205-99-2	Benzo[b]fluoranthene	3700	JD
207-08-9	Benzo[k]fluoranthene	3300	JD
50-32-8	Benzo[a]pyrene	5500	JD
193-39-5	Indeno[1,2,3-cd]pyrene	1800	JD
53-70-3	Dibenz[a,h]anthracene	780	JD
191-24-2	Benzo[g,h,i]perylene	2000	JD

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-126

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4777 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4777.26(1:5)

Sample wt/vol: 10.18 (g/ml) G Lab File ID: BN03901.D

Level: (low/med) LOW Date Received: 9/8/99

% Moisture: 16.54 decanted: (Y/N) N Date Extracted: 9/20/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.83	4800	JD
2. 000832-71-3	Phenanthrene, 3-methyl-	19.21	2800	JND
3. 000613-12-7	Anthracene, 2-methyl-	19.27	3500	JND
4. 000832-69-9	Phenanthrene, 1-methyl-	19.44	5400	JND
5. 000613-12-7	Anthracene, 2-methyl-	19.49	2800	JND
6. 003674-66-6	Phenanthrene, 2,5-dimethyl-	20.40	3500	JND
7.	unknown	20.45	3600	JD
8.	unknown	20.85	2500	JD
9. 000243-17-4	11H-Benzo[b]fluorene	21.83	4200	JND
10. 002381-21-7	Pyrene, 1-methyl-	22.02	2500	JND
11. 003353-12-6	Pyrene, 4-methyl-	22.20	3400	JND
12. 002381-21-7	Pyrene, 1-methyl-	22.26	2700	JND
13.	unknown	23.13	2500	JD
14. 000629-96-9	1-Eicosanol	23.47	10000	JND
15. 002381-31-9	Benz[a]anthracene, 8-methyl-	24.37	4600	JND
16. 000198-55-0	Perylene	26.04	3600	JND

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-127

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.02

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03918.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/29/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	670	J
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	390	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1600	
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-127

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.02

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03918.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/29/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	840	J
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	460	J
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1000	J
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	9800	
120-12-7	Anthracene	3400	
84-74-2	Di-n-butylphthalate	550	JB
206-44-0	Fluoranthene	15000	E
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	16000	E
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	13000	
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	11000	
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	11000	
207-08-9	Benzo[k]fluoranthene	9100	
50-32-8	Benzo[a]pyrene	12000	
193-39-5	Indeno[1,2,3-cd]pyrene	4400	
53-70-3	Dibenz[a,h]anthracene	2000	
191-24-2	Benzo[g,h,i]perylene	3700	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-127

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.02

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03918.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.24 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/29/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 25 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000832-71-3	Phenanthrene, 3-methyl-	19.23	1200	JN
2.	000613-12-7	Anthracene, 2-methyl-	19.28	1800	JN
3.		unknown	19.46	3100	J
4.	000612-94-2	Naphthalene, 2-phenyl-	19.88	1600	JN
5.	000084-65-1	9,10-Anthracenedione	19.94	1200	JN
6.	003674-65-5	Phenanthrene, 2,3-dimethyl-	20.45	1500	JN
7.	005737-13-3	Cyclopenta(def)phenanthrenone	20.61	2400	JN
8.	003442-78-2	Pyrene, 2-methyl-	21.87	1400	JN
9.		unknown	23.18	1500	J
10.	019047-85-9	Phosphonic acid, dioctadecyl este	23.49	1700	JN
11.	003351-28-8	Chrysene, 1-methyl-	24.42	1200	JN
12.	001705-85-7	Chrysene, 6-methyl-	24.68	1000	JN
13.	004325-74-0	1,2'-Binaphthalene	25.38	2100	JN
14.	000198-55-0	Perylene	25.82	2800	JN
15.	000112-95-8	Eicosane	25.92	1200	JN
16.	000297-03-0	Cyclotetracosane	25.95	1600	JN
17.	000192-97-2	Benzo[e]pyrene	26.12	7400	JN
18.		unknown	26.40	1200	J
19.		unknown	26.79	1000	J
20.		unknown	27.11	2500	J
21.	000629-96-9	1-Eicosanol	27.19	1400	JN
22.	000215-58-7	Benzo[b]triphenylene	28.15	1100	JN
23.		unknown	28.66	1600	J
24.		unknown	28.76	1100	J
25.		unknown	18.84	1400	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-127

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.02 (1:10)

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03936.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	11000	U
62-75-9	N-nitroso-dimethylamine	11000	U
62-53-3	Aniline	11000	U
108-95-2	Phenol	11000	U
111-44-4	bis(2-Chloroethyl)ether	11000	U
95-57-8	2-Chlorophenol	11000	U
541-73-1	1,3-Dichlorobenzene	11000	U
106-46-7	1,4-Dichlorobenzene	11000	U
100-51-6	Benzyl alcohol	11000	U
95-50-1	1,2-Dichlorobenzene	11000	U
95-48-7	2-Methylphenol	11000	U
108-60-1	bis(2-chloroisopropyl)ether	11000	U
106-44-5	4-Methylphenol	11000	U
621-64-7	n-Nitroso-di-n-propylamine	11000	U
67-72-1	Hexachloroethane	11000	U
98-95-3	Nitrobenzene	11000	U
78-59-1	Isophorone	11000	U
88-75-5	2-Nitrophenol	11000	U
105-67-9	2,4-Dimethylphenol	11000	U
111-91-1	bis(2-Chloroethoxy)methane	11000	U
120-83-2	2,4-Dichlorophenol	11000	U
65-85-0	Benzoic Acid	11000	U
120-82-1	1,2,4-Trichlorobenzene	11000	U
91-20-3	Naphthalene	11000	U
106-47-8	4-Chloroaniline	11000	U
87-68-3	Hexachlorobutadiene	11000	U
59-50-7	4-Chloro-3-methylphenol	11000	U
91-57-6	2-Methylnaphthalene	11000	U
77-47-4	Hexachlorocyclopentadiene	11000	U
88-06-2	2,4,6-Trichlorophenol	11000	U
95-95-4	2,4,5-Trichlorophenol	11000	U
91-58-7	2-Chloronaphthalene	11000	U
88-74-4	2-Nitroaniline	11000	U
131-11-3	Dimethylphthalate	11000	U
208-96-8	Acenaphthylene	1700	JD
606-20-2	2,6-Dinitrotoluene	11000	U
99-09-2	3-Nitroaniline	11000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-127

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.02 (1:10)

Sample wt/vol: 9.99 (g/ml) G Lab File ID: BN03936.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/1/99

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	11000	U
51-28-5	2,4-Dinitrophenol	11000	U
132-64-9	Dibenzofuran	11000	U
100-02-7	4-Nitrophenol	11000	U
121-14-2	2,4-Dinitrotoluene	11000	U
84-66-2	Diethylphthalate	11000	U
86-73-7	Fluorene	1200	JD
7005-72-3	4-Chlorophenyl-phenylether	11000	U
100-01-6	4-Nitroaniline	11000	U
534-52-1	4,6-Dinitro-2-methylphenol	11000	U
86-30-6	n-Nitrosodiphenylamine	11000	U
103-33-3	Azobenzene	11000	U
101-55-3	4-Bromophenyl-phenylether	11000	U
118-74-1	Hexachlorobenzene	11000	U
87-86-5	Pentachlorophenol	11000	U
85-01-8	Phenanthrene	15000	D
120-12-7	Anthracene	3900	JD
84-74-2	Di-n-butylphthalate	11000	U
206-44-0	Fluoranthene	32000	D
92-87-5	Benzidine	11000	U
129-00-0	Pyrene	29000	D
85-68-7	Butylbenzylphthalate	11000	U
56-55-3	Benzo[a]anthracene	17000	D
91-94-1	3,3'-Dichlorobenzidine	11000	U
218-01-9	Chrysene	18000	D
117-81-7	bis(2-Ethylhexyl)phthalate	11000	U
117-84-0	Di-n-octylphthalate	11000	U
205-99-2	Benzo[b]fluoranthene	15000	D
207-08-9	Benzo[k]fluoranthene	13000	D
50-32-8	Benzo[a]pyrene	17000	D
193-39-5	Indeno[1,2,3-cd]pyrene	7500	JD
53-70-3	Dibenz[a,h]anthracene	3200	JD
191-24-2	Benzo[g,h,i]perylene	7500	JD

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-128

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.04(1:5)

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03902.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 6.11 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	5300	U
62-75-9	N-nitroso-dimethylamine	5300	U
62-53-3	Aniline	5300	U
108-95-2	Phenol	5300	U
111-44-4	bis(2-Chloroethyl)ether	5300	U
95-57-8	2-Chlorophenol	5300	U
541-73-1	1,3-Dichlorobenzene	5300	U
106-46-7	1,4-Dichlorobenzene	5300	U
100-51-6	Benzyl alcohol	5300	U
95-50-1	1,2-Dichlorobenzene	5300	U
95-48-7	2-Methylphenol	5300	U
108-60-1	bis(2-chloroisopropyl)ether	5300	U
106-44-5	4-Methylphenol	5300	U
621-64-7	n-Nitroso-di-n-propylamine	5300	U
67-72-1	Hexachloroethane	5300	U
98-95-3	Nitrobenzene	5300	U
78-59-1	Isophorone	5300	U
88-75-5	2-Nitrophenol	5300	U
105-67-9	2,4-Dimethylphenol	5300	U
111-91-1	bis(2-Chloroethoxy)methane	5300	U
120-83-2	2,4-Dichlorophenol	5300	U
65-85-0	Benzoic Acid	5300	U
120-82-1	1,2,4-Trichlorobenzene	5300	U
91-20-3	Naphthalene	5300	U
106-47-8	4-Chloroaniline	5300	U
87-68-3	Hexachlorobutadiene	5300	U
59-50-7	4-Chloro-3-methylphenol	5300	U
91-57-6	2-Methylnaphthalene	5300	U
77-47-4	Hexachlorocyclopentadiene	5300	U
88-06-2	2,4,6-Trichlorophenol	5300	U
95-95-4	2,4,5-Trichlorophenol	5300	U
91-58-7	2-Chloronaphthalene	5300	U
88-74-4	2-Nitroaniline	5300	U
131-11-3	Dimethylphthalate	5300	U
208-96-8	Acenaphthylene	5300	U
606-20-2	2,6-Dinitrotoluene	5300	U
99-09-2	3-Nitroaniline	5300	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-128

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.04(1:5)

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03902.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 6.11 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	5300	U
51-28-5	2,4-Dinitrophenol	5300	U
132-64-9	Dibenzofuran	5300	U
100-02-7	4-Nitrophenol	5300	U
121-14-2	2,4-Dinitrotoluene	5300	U
84-66-2	Diethylphthalate	5300	U
86-73-7	Fluorene	5300	U
7005-72-3	4-Chlorophenyl-phenylether	5300	U
100-01-6	4-Nitroaniline	5300	U
534-52-1	4,6-Dinitro-2-methylphenol	5300	U
86-30-6	n-Nitrosodiphenylamine	5300	U
103-33-3	Azobenzene	5300	U
101-55-3	4-Bromophenyl-phenylether	5300	U
118-74-1	Hexachlorobenzene	5300	U
87-86-5	Pentachlorophenol	5300	U
85-01-8	Phenanthrene	5300	U
120-12-7	Anthracene	5300	U
84-74-2	Di-n-butylphthalate	850	JBD
206-44-0	Fluoranthene	5300	U
92-87-5	Benzidine	5300	U
129-00-0	Pyrene	5300	U
85-68-7	Butylbenzylphthalate	5300	U
56-55-3	Benzo[a]anthracene	5300	U
91-94-1	3,3'-Dichlorobenzidine	5300	U
218-01-9	Chrysene	5300	U
117-81-7	bis(2-Ethylhexyl)phthalate	5300	U
117-84-0	Di-n-octylphthalate	5300	U
205-99-2	Benzo[b]fluoranthene	5300	U
207-08-9	Benzo[k]fluoranthene	5300	U
50-32-8	Benzo[a]pyrene	5300	U
193-39-5	Indeno[1,2,3-cd]pyrene	5300	U
53-70-3	Dibenz[a,h]anthracene	5300	U
191-24-2	Benzo[g,h,i]perylene	5300	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-128

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.04(1:5)

Sample wt/vol: 10.06 (g/ml) G Lab File ID: BN03902.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 6.11 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 027519-02-4	9-Tricosene, (Z)-	23.47	6000	JND
2. 000112-95-8	Eicosane	27.11	2200	JND
3.	unknown	27.26	5700	JD
4.	unknown	27.87	2800	JD

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-129

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN03843.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 36.89 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1600	U
62-75-9	N-nitroso-dimethylamine	1600	U
62-53-3	Aniline	1600	U
108-95-2	Phenol	1600	U
111-44-4	bis(2-Chloroethyl)ether	1600	U
95-57-8	2-Chlorophenol	1600	U
541-73-1	1,3-Dichlorobenzene	1600	U
106-46-7	1,4-Dichlorobenzene	1600	U
100-51-6	Benzyl alcohol	1600	U
95-50-1	1,2-Dichlorobenzene	1600	U
95-48-7	2-Methylphenol	1600	U
108-60-1	bis(2-chloroisopropyl)ether	1600	U
106-44-5	4-Methylphenol	1600	U
621-64-7	n-Nitroso-di-n-propylamine	1600	U
67-72-1	Hexachloroethane	1600	U
98-95-3	Nitrobenzene	1600	U
78-59-1	Isophorone	1600	U
88-75-5	2-Nitrophenol	1600	U
105-67-9	2,4-Dimethylphenol	1600	U
111-91-1	bis(2-Chloroethoxy)methane	1600	U
120-83-2	2,4-Dichlorophenol	1600	U
65-85-0	Benzoic Acid	1600	U
120-82-1	1,2,4-Trichlorobenzene	1600	U
91-20-3	Naphthalene	1600	U
106-47-8	4-Chloroaniline	1600	U
87-68-3	Hexachlorobutadiene	1600	U
59-50-7	4-Chloro-3-methylphenol	1600	U
91-57-6	2-Methylnaphthalene	1600	U
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	1600	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	1600	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	1600	U
208-96-8	Acenaphthylene	340	J
606-20-2	2,6-Dinitrotoluene	1600	U
99-09-2	3-Nitroaniline	1600	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-129

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN03843.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 36.89 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1600	U
51-28-5	2,4-Dinitrophenol	1600	U
132-64-9	Dibenzofuran	1600	U
100-02-7	4-Nitrophenol	1600	U
121-14-2	2,4-Dinitrotoluene	1600	U
84-66-2	Diethylphthalate	1600	U
86-73-7	Fluorene	170	J
7005-72-3	4-Chlorophenyl-phenylether	1600	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	n-Nitrosodiphenylamine	1600	U
103-33-3	Azobenzene	1600	U
101-55-3	4-Bromophenyl-phenylether	1600	U
118-74-1	Hexachlorobenzene	1600	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	1400	J
120-12-7	Anthracene	310	J
84-74-2	Di-n-butylphthalate	750	JB
206-44-0	Fluoranthene	2100	
92-87-5	Benzidine	1600	U
129-00-0	Pyrene	2200	
85-68-7	Butylbenzylphthalate	1600	U
56-55-3	Benzo[a]anthracene	1200	J
91-94-1	3,3'-Dichlorobenzidine	1600	U
218-01-9	Chrysene	1400	J
117-81-7	bis(2-Ethylhexyl)phthalate	300	JB
117-84-0	Di-n-octylphthalate	1600	U
205-99-2	Benzo[b]fluoranthene	900	J
207-08-9	Benzo[k]fluoranthene	1000	J
50-32-8	Benzo[a]pyrene	1200	J
193-39-5	Indeno[1,2,3-cd]pyrene	580	J
53-70-3	Dibenz[a,h]anthracene	160	J
191-24-2	Benzo[g,h,i]perylene	650	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-129

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.06

Sample wt/vol: 10.04 (g/ml) G Lab File ID: BN03843.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 36.89 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 9 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.83	1200	J
2. 000057-10-3	Hexadecanoic acid	19.57	1400	JN
3. 000112-92-5	1-Octadecanol	23.48	7800	JN
4. 006971-40-0	17-Pentatriacontene	24.75	1200	JN
5.	unknown	25.94	1300	J
6. 000192-97-2	Benzo[e]pyrene	26.03	1100	JN
7. 000630-06-8	Hexatriacontane	27.11	1100	JN
8. 074685-33-9	3-Eicosene, (E)-	27.18	2500	JN
9. 000629-96-9	1-Eicosanol	28.78	1300	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-130

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.08

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03844.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.25 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-130

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.08

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03844.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.25 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	160	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-130

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.08

Sample wt/vol: 10.6 (g/ml) G Lab File ID: BN03844.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.25 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.83	1600	J
2. 000057-10-3	Hexadecanoic acid	19.56	510	JN
3. 001454-84-8	1-Nonadecanol	23.48	5300	JN
4. 001599-67-3	1-Docosene	24.75	510	JN
5. 000629-96-9	1-Eicosanol	27.18	1400	JN
6. 006971-40-0	17-Pentatriacontene	28.76	530	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-131

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.10(1:5)

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03903.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.25 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	5600	U
62-75-9	N-nitroso-dimethylamine	5600	U
62-53-3	Aniline	5600	U
108-95-2	Phenol	5600	U
111-44-4	bis(2-Chloroethyl)ether	5600	U
95-57-8	2-Chlorophenol	5600	U
541-73-1	1,3-Dichlorobenzene	5600	U
106-46-7	1,4-Dichlorobenzene	5600	U
100-51-6	Benzyl alcohol	5600	U
95-50-1	1,2-Dichlorobenzene	5600	U
95-48-7	2-Methylphenol	5600	U
108-60-1	bis(2-chloroisopropyl)ether	5600	U
106-44-5	4-Methylphenol	5600	U
621-64-7	n-Nitroso-di-n-propylamine	5600	U
67-72-1	Hexachloroethane	5600	U
98-95-3	Nitrobenzene	5600	U
78-59-1	Isophorone	5600	U
88-75-5	2-Nitrophenol	5600	U
105-67-9	2,4-Dimethylphenol	5600	U
111-91-1	bis(2-Chloroethoxy)methane	5600	U
120-83-2	2,4-Dichlorophenol	5600	U
65-85-0	Benzoic Acid	5600	U
120-82-1	1,2,4-Trichlorobenzene	5600	U
91-20-3	Naphthalene	5600	U
106-47-8	4-Chloroaniline	5600	U
87-68-3	Hexachlorobutadiene	5600	U
59-50-7	4-Chloro-3-methylphenol	5600	U
91-57-6	2-Methylnaphthalene	5600	U
77-47-4	Hexachlorocyclopentadiene	5600	U
88-06-2	2,4,6-Trichlorophenol	5600	U
95-95-4	2,4,5-Trichlorophenol	5600	U
91-58-7	2-Chloronaphthalene	5600	U
88-74-4	2-Nitroaniline	5600	U
131-11-3	Dimethylphthalate	5600	U
208-96-8	Acenaphthylene	5600	U
606-20-2	2,6-Dinitrotoluene	5600	U
99-09-2	3-Nitroaniline	5600	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-131

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.10(1:5)

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03903.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.25 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	660	JD
51-28-5	2,4-Dinitrophenol	5600	U
132-64-9	Dibenzofuran	5600	U
100-02-7	4-Nitrophenol	5600	U
121-14-2	2,4-Dinitrotoluene	5600	U
84-66-2	Diethylphthalate	5600	U
86-73-7	Fluorene	570	JD
7005-72-3	4-Chlorophenyl-phenylether	5600	U
100-01-6	4-Nitroaniline	5600	U
534-52-1	4,6-Dinitro-2-methylphenol	5600	U
86-30-6	n-Nitrosodiphenylamine	5600	U
103-33-3	Azobenzene	5600	U
101-55-3	4-Bromophenyl-phenylether	5600	U
118-74-1	Hexachlorobenzene	5600	U
87-86-5	Pentachlorophenol	5600	U
85-01-8	Phenanthrene	7800	D
120-12-7	Anthracene	1700	JD
84-74-2	Di-n-butylphthalate	1300	JBD
206-44-0	Fluoranthene	16000	D
92-87-5	Benzidine	5600	U
129-00-0	Pyrene	14000	D
85-68-7	Butylbenzylphthalate	5600	U
56-55-3	Benzo[a]anthracene	7500	D
91-94-1	3,3'-Dichlorobenzidine	5600	U
218-01-9	Chrysene	8500	D
117-81-7	bis(2-Ethylhexyl)phthalate	2000	JBD
117-84-0	Di-n-octylphthalate	5600	U
205-99-2	Benzo[b]fluoranthene	9500	D
207-08-9	Benzo[k]fluoranthene	8000	D
50-32-8	Benzo[a]pyrene	8600	D
193-39-5	Indeno[1,2,3-cd]pyrene	3000	JD
53-70-3	Dibenz[a,h]anthracene	920	JD
191-24-2	Benzo[g,h,i]perylene	2800	JD

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-131

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.10(1:5)

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03903.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 10.25 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 7 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000238-84-6	11H-Benzo[a]fluorene	21.82	2700	JND
2. 019047-85-9	Phosphonic acid, dioctadecyl este	23.47	5900	JND
3. 000205-99-2	Benz[e]acephenanthrylene	25.76	2300	JND
4. 080249-75-8	3,4-Epoxy-4a-ethyl-2,3,4,4a,5,6-h	25.93	3300	JND
5. 000198-55-0	Perylene	26.04	6400	JND
6. 002765-11-9	Pentadecanal-	26.77	2600	JND
7. 054833-23-7	Eicosane, 10-methyl-	27.11	3600	JND

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-132

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.12

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03845.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-132

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.12

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03845.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.24 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	180	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1400	B
206-44-0	Fluoranthene	180	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	190	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	140	J
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	120	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-132

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.12

Sample wt/vol: 10.07 (g/ml) G Lab File ID: BN03845.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.24 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 10 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	2000	JN
2.	000057-10-3	Hexadecanoic acid	19.57	740	JN
3.	019047-85-9	Phosphonic acid, dioctadecyl este	23.47	5100	JN
4.	006971-40-0	17-Pentatriacontene	24.75	620	JN
5.	000629-80-1	Hexadecanal	25.58	1200	JN
6.	000629-96-9	1-Eicosanol	25.94	1000	JN
7.	055045-08-4	Dodecane, 2-methyl-6-propyl-	27.11	620	JN
8.	000629-96-9	1-Eicosanol	27.18	1500	JN
9.	007390-81-0	Oxirane, hexadecyl-	28.23	510	JN
10.	000629-96-9	1-Eicosanol	28.77	860	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-133

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.14(1:5)

Sample wt/vol: 10.44 (g/ml) G Lab File ID: BN03899.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 9.98 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	5300	U
62-75-9	N-nitroso-dimethylamine	5300	U
62-53-3	Aniline	5300	U
108-95-2	Phenol	5300	U
111-44-4	bis(2-Chloroethyl)ether	5300	U
95-57-8	2-Chlorophenol	5300	U
541-73-1	1,3-Dichlorobenzene	5300	U
106-46-7	1,4-Dichlorobenzene	5300	U
100-51-6	Benzyl alcohol	5300	U
95-50-1	1,2-Dichlorobenzene	5300	U
95-48-7	2-Methylphenol	5300	U
108-60-1	bis(2-chloroisopropyl)ether	5300	U
106-44-5	4-Methylphenol	5300	U
621-64-7	n-Nitroso-di-n-propylamine	5300	U
67-72-1	Hexachloroethane	5300	U
98-95-3	Nitrobenzene	5300	U
78-59-1	Isophorone	5300	U
88-75-5	2-Nitrophenol	5300	U
105-67-9	2,4-Dimethylphenol	5300	U
111-91-1	bis(2-Chloroethoxy)methane	5300	U
120-83-2	2,4-Dichlorophenol	5300	U
65-85-0	Benzoic Acid	5300	U
120-82-1	1,2,4-Trichlorobenzene	5300	U
91-20-3	Naphthalene	5300	U
106-47-8	4-Chloroaniline	5300	U
87-68-3	Hexachlorobutadiene	5300	U
59-50-7	4-Chloro-3-methylphenol	5300	U
91-57-6	2-Methylnaphthalene	5300	U
77-47-4	Hexachlorocyclopentadiene	5300	U
88-06-2	2,4,6-Trichlorophenol	5300	U
95-95-4	2,4,5-Trichlorophenol	5300	U
91-58-7	2-Chloronaphthalene	5300	U
88-74-4	2-Nitroaniline	5300	U
131-11-3	Dimethylphthalate	5300	U
208-96-8	Acenaphthylene	5300	U
606-20-2	2,6-Dinitrotoluene	5300	U
99-09-2	3-Nitroaniline	5300	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-133

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.14(1:5)

Sample wt/vol: 10.44 (g/ml) G Lab File ID: BN03899.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 9.98 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	5300	U
51-28-5	2,4-Dinitrophenol	5300	U
132-64-9	Dibenzofuran	5300	U
100-02-7	4-Nitrophenol	5300	U
121-14-2	2,4-Dinitrotoluene	5300	U
84-66-2	Diethylphthalate	5300	U
86-73-7	Fluorene	5300	U
7005-72-3	4-Chlorophenyl-phenylether	5300	U
100-01-6	4-Nitroaniline	5300	U
534-52-1	4,6-Dinitro-2-methylphenol	5300	U
86-30-6	n-Nitrosodiphenylamine	5300	U
103-33-3	Azobenzene	5300	U
101-55-3	4-Bromophenyl-phenylether	5300	U
118-74-1	Hexachlorobenzene	5300	U
87-86-5	Pentachlorophenol	5300	U
85-01-8	Phenanthrene	5300	U
120-12-7	Anthracene	5300	U
84-74-2	Di-n-butylphthalate	2700	JBD
206-44-0	Fluoranthene	5300	U
92-87-5	Benzidine	5300	U
129-00-0	Pyrene	5300	U
85-68-7	Butylbenzylphthalate	5300	U
56-55-3	Benzo[a]anthracene	5300	U
91-94-1	3,3'-Dichlorobenzidine	5300	U
218-01-9	Chrysene	5300	U
117-81-7	bis(2-Ethylhexyl)phthalate	5300	U
117-84-0	Di-n-octylphthalate	5300	U
205-99-2	Benzo[b]fluoranthene	5300	U
207-08-9	Benzo[k]fluoranthene	5300	U
50-32-8	Benzo[a]pyrene	5300	U
193-39-5	Indeno[1,2,3-cd]pyrene	5300	U
53-70-3	Dibenz[a,h]anthracene	5300	U
191-24-2	Benzo[g,h,i]perylene	5300	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-133

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.14(1:5)

Sample wt/vol: 10.44 (g/ml) G Lab File ID: BN03899.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 9.98 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.82	3300	JD
2. 019047-85-9	Phosphonic acid, dioctadecyl este	23.46	6900	JND

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-134

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.16

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03846.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 8.3 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-134

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.16

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03846.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 8.3 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1300	B
206-44-0	Fluoranthene	180	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	230	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	120	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	180	J
117-81-7	bis(2-Ethylhexyl)phthalate	140	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	140	J
207-08-9	Benzo[k]fluoranthene	120	J
50-32-8	Benzo[a]pyrene	150	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-134

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.16

Sample wt/vol: 10.02 (g/ml) G Lab File ID: BN03846.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 8.3 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1700	JN
2. 000057-10-3	Hexadecanoic acid	19.57	570	JN
3. 007704-34-9	Sulfur	20.53	660	JN
4. 019047-85-9	Phosphonic acid, dioctadecyl este	23.48	5100	JN
5. 015965-99-8	Oxirane, [(hexadecyloxy)methyl]-	24.74	1000	JN
6. 000629-92-5	Nonadecane	25.91	890	JN
7. 000629-96-9	1-Eicosanol	25.94	3500	JN
8. 000000-00-0	1-Hexacosanal	26.78	1200	JN
9. 000629-94-7	Heneicosane	27.11	2300	JN
10. 000629-96-9	1-Eicosanol	27.18	2000	JN
11. 000000-00-0	1-Hexacosanal	28.24	1400	JN
12. 000593-45-3	Octadecane	28.65	1400	JN
13. 077899-03-7	1-Heneicosyl formate	28.78	1100	JN
14.	unknown	28.92	1100	J
15. 000083-47-6	.gamma.-Sitosterol	29.33	520	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-135

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.18

Sample wt/vol: 10.42 (g/ml) G Lab File ID: BN03847.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.29 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-135

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.18

Sample wt/vol: 10.42 (g/ml) G Lab File ID: BN03847.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.29 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1700	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-135

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.18

Sample wt/vol: 10.42 (g/ml) G Lab File ID: BN03847.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.29 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.84	1900	J
2. 000057-10-3	Hexadecanoic acid	19.57	730	JN
3. 074685-30-6	5-Eicosene, (E)-	23.48	6100	JN
4. 006624-79-9	1-Dotriacontanol	24.75	670	JN
5. 000629-96-9	1-Eicosanol	27.18	1700	JN
6. 006971-40-0	17-Pentatriacontene	28.78	690	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-136

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03848.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.26 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-136

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03848.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.26 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	740	JB
206-44-0	Fluoranthene	120	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	120	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-136

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.20

Sample wt/vol: 10.61 (g/ml) G Lab File ID: BN03848.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 14.26 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 11 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.83	1100	J
2. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
3. 000112-92-5	1-Octadecanol	23.49	5900	JN
4. 006971-40-0	17-Pentatriacontene	24.75	700	JN
5. 007390-81-0	Oxirane, hexadecyl-	25.59	570	JN
6.	unknown	25.93	460	J
7. 000629-96-9	1-Eicosanol	27.18	1800	JN
8.	unknown	28.23	1000	J
9. 004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	28.49	640	JN
10. 000083-48-7	Stigmasterol	28.78	1600	JN
11.	unknown	28.91	510	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-137

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.22

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN03897.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 15.05 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-137

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.22

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN03897.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 15.05 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	310	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	550	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	510	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	280	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	330	J
117-81-7	bis(2-Ethylhexyl)phthalate	240	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	270	J
207-08-9	Benzo[k]fluoranthene	240	J
50-32-8	Benzo[a]pyrene	310	J
193-39-5	Indeno[1,2,3-cd]pyrene	160	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	180	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-137

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.22

Sample wt/vol: 10.12 (g/ml) G Lab File ID: BN03897.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 15.05 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	1900	JN
2. 000057-10-3	Hexadecanoic acid	19.56	560	JN
3. 000629-96-9	1-Eicosanol	23.47	7000	JN
4. 001599-67-3	1-Docosene	24.12	530	JN
5. 000506-52-5	1-Hexacosanol	24.75	880	JN
6. 000629-92-5	Nonadecane	25.90	640	JN
7. 000112-92-5	1-Octadecanol	25.94	1300	JN
8. 056554-90-6	13-Octadecenal	26.76	710	JN
9. 000630-06-8	Hexatriacontane	27.10	990	JN
10. 000661-19-8	1-Docosanol	27.18	1300	JN
11.	unknown	27.30	470	J
12. 055045-08-4	Dodecane, 2-methyl-6-propyl-	28.64	490	JN
13. 001599-67-3	1-Docosene	28.76	700	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-138

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.24

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03872.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.43 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-138

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.24

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03872.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.43 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	270	J
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	2700	B
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	250	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-138

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.24

Sample wt/vol: 10.17 (g/ml) G Lab File ID: BN03872.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 16.43 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 13 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	3300	JN
2. 000057-10-3	Hexadecanoic acid	19.58	1200	JN
3. 007704-34-9	Sulfur	20.53	680	JN
4. 019047-85-9	Phosphonic acid, dioctadecyl este	23.48	6400	JN
5. 040710-42-7	1-Hentetracontanol	24.74	760	JN
6. 000000-00-0	1-Hexacosanal	25.58	1400	JN
7. 006971-40-0	17-Pentatriacontene	25.93	1500	JN
8. 056554-87-1	16-Octadecenal	26.77	470	JN
9. 000629-92-5	Nonadecane	27.11	930	JN
10. 000629-96-9	1-Eicosanol	27.18	1700	JN
11. 007098-22-8	Tetratetracontane	28.64	500	JN
12. 000112-88-9	1-Octadecene	28.77	780	JN
13.	unknown	29.32	520	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-139

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.26

Sample wt/vol: 10.08 (g/ml) G Lab File ID: BN03881.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.98 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-139

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.26

Sample wt/vol: 10.08 (g/ml) G Lab File ID: BN03881.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.98 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	230	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	730	JB
206-44-0	Fluoranthene	710	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	710	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	410	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	470	J
117-81-7	bis(2-Ethylhexyl)phthalate	230	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	390	J
207-08-9	Benzo[k]fluoranthene	410	J
50-32-8	Benzo[a]pyrene	430	J
193-39-5	Indeno[1,2,3-cd]pyrene	210	J
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	220	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-139

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4790 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4790.26

Sample wt/vol: 10.08 (g/ml) G Lab File ID: BN03881.D

Level: (low/med) LOW Date Received: 9/15/99

% Moisture: 12.98 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 17 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	1000	JN
2. 010544-50-0	Sulfur, mol. (S8)	20.54	870	JN
3. 000243-46-9	Benzo[b]naphtho[2,3-d]thiophene	23.06	610	JN
4. 019047-85-9	Phosphonic acid, dioctadecyl este	23.48	7400	JN
5. 025276-70-4	1-Pentadecanethiol	24.12	490	JN
6. 006624-79-9	1-Dotriacontanol	24.75	1500	JN
7. 000000-00-0	10-Methylnonadecane	25.33	510	JN
8. 054833-23-7	Eicosane, 10-methyl-	25.90	1200	JN
9. 000297-03-0	Cyclotetracosane	25.94	2100	JN
10. 000205-82-3	Benzo[j]fluoranthene	26.04	540	JN
11. 056554-86-0	17-Octadecenal	26.77	1100	JN
12. 073105-67-6	1-Iodo-2-methylundecane	27.11	1900	JN
13. 000629-96-9	1-Eicosanol	27.18	1900	JN
14. 056554-86-0	17-Octadecenal	28.23	930	JN
15. 000112-95-8	Eicosane	28.65	1100	JN
16. 036653-82-4	1-Hexadecanol	28.77	1400	JN
17. 000083-47-6	.gamma.-Sitosterol	29.32	530	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-140

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.02

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03873.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 15.56 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-140

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.02

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03873.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 15.56 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	410	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	380	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	200	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	240	J
117-81-7	bis(2-Ethylhexyl)phthalate	210	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	200	J
207-08-9	Benzo[k]fluoranthene	160	J
50-32-8	Benzo[a]pyrene	190	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-140

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.02

Sample wt/vol: 9.98 (g/ml) G Lab File ID: BN03873.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 15.56 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 13 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000057-10-3	Hexadecanoic acid	19.57	1100	JN
2. 000629-96-9	1-Eicosanol	23.48	7100	JN
3. 000112-92-5	1-Octadecanol	24.75	1200	JN
4. 054833-23-7	Eicosane, 10-methyl-	25.90	910	JN
5. 000297-03-0	Cyclotetracosane	25.94	1500	JN
6. 000629-80-1	Hexadecanal	26.77	890	JN
7. 000629-59-4	Tetradecane	27.11	1500	JN
8. 000629-96-9	1-Eicosanol	27.18	2100	JN
9.	unknown	28.23	1000	J
10. 000544-76-3	Hexadecane	28.65	640	JN
11. 029354-98-1	Hexadecanol	28.77	1200	JN
12.	unknown	28.91	1000	J
13. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	1900	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-141

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.04

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03874.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 14.38 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-141

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.04

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03874.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 14.38 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	270	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	520	JB
206-44-0	Fluoranthene	430	J
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	380	J
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	180	J
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	200	J
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	150	J
207-08-9	Benzo[k]fluoranthene	130	J
50-32-8	Benzo[a]pyrene	150	J
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-141

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.04

Sample wt/vol: 10.23 (g/ml) G Lab File ID: BN03874.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 14.38 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-64-0	1,2-Benzenedicarboxylic acid, but	18.83	820	JN
2. 000057-10-3	Hexadecanoic acid	19.56	590	JN
3. 074685-30-6	5-Eicosene, (E)-	23.48	6100	JN
4. 006624-79-9	1-Dotriacontanol	24.75	730	JN
5. 000112-92-5	1-Octadecanol	25.94	820	JN
6. 000112-95-8	Eicosane	27.10	730	JN
7. 000629-96-9	1-Eicosanol	27.18	1600	JN
8. 000638-66-4	Octadecanal	28.23	580	JN
9. 006971-40-0	17-Pentatriacontene	28.77	930	JN
10.	unknown	28.91	580	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-142

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.06

Sample wt/vol: 10.14 (g/ml) G Lab File ID: BN03880.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 17.85 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-142

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.06

Sample wt/vol: 10.14 (g/ml) G Lab File ID: BN03880.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 17.85 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1500	B
206-44-0	Fluoranthene	400	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	370	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	170	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	260	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	190	J
207-08-9	Benzo[k]fluoranthene	190	J
50-32-8	Benzo[a]pyrene	190	J
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	130	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-142

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.06

Sample wt/vol: 10.14 (g/ml) G Lab File ID: BN03880.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 17.85 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 17 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	2200	JN
2.	000057-10-3	Hexadecanoic acid	19.58	1900	JN
3.	010544-50-0	Sulfur, mol. (S8)	20.56	3000	JN
4.	074685-30-6	5-Eicosene, (E)-	23.48	7600	JN
5.	015965-99-8	Oxirane, [(hexadecyloxy)methyl]-	24.75	1800	JN
6.	000630-06-8	Hexatriacontane	25.33	750	JN
7.	054833-23-7	Eicosane, 10-methyl-	25.91	1800	JN
8.	001454-84-8	1-Nonadecanol	25.95	6300	JN
9.		unknown	26.04	640	J
10.	056554-90-6	13-Octadecenal	26.77	2300	JN
11.	000629-97-0	Docosane	27.11	3500	JN
12.	000629-96-9	1-Eicosanol	27.19	2400	JN
13.	056554-87-1	16-Octadecenal	28.24	1200	JN
14.	004651-51-8	Ergost-5-en-3-ol, (3.beta.)-	28.50	500	JN
15.	054833-23-7	Eicosane, 10-methyl-	28.65	2100	JN
16.	055401-76-8	Cyclopentane, 1,1'-hexadecylider	28.78	1400	JN
17.	000083-47-6	.gamma.-Sitosterol	29.34	1700	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-143

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.08

Sample wt/vol: 10.3 (g/ml) G Lab File ID: BN03875.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.22 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-143

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.08

Sample wt/vol: 10.3 (g/ml) G Lab File ID: BN03875.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.22 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	520	JB
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
B-143

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.08

Sample wt/vol: 10.3 (g/ml) G Lab File ID: BN03875.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.22 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	780	JN
2. 000057-10-3	Hexadecanoic acid	19.57	1100	JN
3. 000112-92-5	1-Octadecanol	23.48	5600	JN
4. 006971-40-0	17-Pentatriacontene	24.75	670	JN
5. 000630-06-8	Hexatriacontane	27.10	570	JN
6. 000629-96-9	1-Eicosanol	27.18	1400	JN
7.	unknown	28.65	490	J
8. 006971-40-0	17-Pentatriacontene	28.77	750	JN
9.	unknown	28.91	480	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-144

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.10

Sample wt/vol: 10.9 (g/ml) G Lab File ID: BN03876.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 12.09 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1000	U
62-75-9	N-nitroso-dimethylamine	1000	U
62-53-3	Aniline	1000	U
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	n-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
65-85-0	Benzoic Acid	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	1000	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-144

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.10

Sample wt/vol: 10.9 (g/ml) G Lab File ID: BN03876.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 12.09 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	1000	U
132-64-9	Dibenzofuran	1000	U
100-02-7	4-Nitrophenol	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
86-73-7	Fluorene	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	n-Nitrosodiphenylamine	1000	U
103-33-3	Azobenzene	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-butylphthalate	2400	B
206-44-0	Fluoranthene	1000	U
92-87-5	Benzidine	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
56-55-3	Benzo[a]anthracene	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	JB
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo[b]fluoranthene	1000	U
207-08-9	Benzo[k]fluoranthene	1000	U
50-32-8	Benzo[a]pyrene	1000	U
193-39-5	Indeno[1,2,3-cd]pyrene	1000	U
53-70-3	Dibenz[a,h]anthracene	1000	U
191-24-2	Benzo[g,h,i]perylene	1000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-144

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.10

Sample wt/vol: 10.9 (g/ml) G Lab File ID: BN03876.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 12.09 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	17.50	2300	J
2.	unknown	17.63	1600	J
3.	unknown	18.84	3500	J
4. 000057-10-3	Hexadecanoic acid	19.57	430	JN
5. 000629-96-9	1-Eicosanol	23.48	6100	JN
6. 006971-40-0	17-Pentatriacontene	24.75	560	JN
7. 006624-79-9	1-Dotriacontanol	27.18	1200	JN
8. 006971-40-0	17-Pentatriacontene	28.77	640	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-145

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.12

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03877.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.23 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-145

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.12

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03877.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.23 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	2200	B
206-44-0	Fluoranthene	1200	U
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	1200	U
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	180	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	1200	U
207-08-9	Benzo[k]fluoranthene	1200	U
50-32-8	Benzo[a]pyrene	1200	U
193-39-5	Indeno[1,2,3-cd]pyrene	1200	U
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	1200	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-145

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.12

Sample wt/vol: 10.24 (g/ml) G Lab File ID: BN03877.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.23 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	3000	JN
2. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
3. 019047-85-9	Phosphonic acid, dioctadecyl este	23.48	5500	JN
4. 006624-79-9	1-Dotriacontanol	24.75	590	JN
5. 000629-96-9	1-Eicosanol	27.18	1400	JN
6. 000629-96-9	1-Eicosanol	28.77	520	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-146

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.14

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03898.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.81 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1200	U
62-75-9	N-nitroso-dimethylamine	1200	U
62-53-3	Aniline	1200	U
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	bis(2-chloroisopropyl)ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	n-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
65-85-0	Benzoic Acid	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	1200	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-146

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.14

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03898.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.81 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	1200	U
132-64-9	Dibenzofuran	1200	U
100-02-7	4-Nitrophenol	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
86-73-7	Fluorene	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	n-Nitrosodiphenylamine	1200	U
103-33-3	Azobenzene	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	410	J
120-12-7	Anthracene	1200	U
84-74-2	Di-n-butylphthalate	1700	B
206-44-0	Fluoranthene	630	J
92-87-5	Benzidine	1200	U
129-00-0	Pyrene	650	J
85-68-7	Butylbenzylphthalate	1200	U
56-55-3	Benzo[a]anthracene	350	J
91-94-1	3,3'-Dichlorobenzidine	1200	U
218-01-9	Chrysene	400	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	JB
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo[b]fluoranthene	290	J
207-08-9	Benzo[k]fluoranthene	290	J
50-32-8	Benzo[a]pyrene	340	J
193-39-5	Indeno[1,2,3-cd]pyrene	160	J
53-70-3	Dibenz[a,h]anthracene	1200	U
191-24-2	Benzo[g,h,i]perylene	180	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-146

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.14

Sample wt/vol: 10.36 (g/ml) G Lab File ID: BN03898.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 16.81 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	18.83	2600	J
2. 000057-10-3	Hexadecanoic acid	19.57	970	JN
3. 019047-85-9	Phosphonic acid, dioctadecyl este	23.47	5400	JN
4. 000112-88-9	1-Octadecene	24.74	680	JN
5. 001454-84-8	1-Nonadecanol	25.93	1000	JN
6. 000638-66-4	Octadecanal	26.76	550	JN
7. 000630-03-5	Nonacosane	27.09	630	JN
8. 000629-96-9	1-Eicosanol	27.17	1400	JN
9. 000661-19-8	1-Docosanol	28.76	730	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-147

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.16

Sample wt/vol: 10.43 (g/ml) G Lab File ID: BN03879.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.05 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-147

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.16

Sample wt/vol: 10.43 (g/ml) G Lab File ID: BN03879.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.05 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1600	B
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-147

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.16

Sample wt/vol: 10.43 (g/ml) G Lab File ID: BN03879.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.05 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.83	2500	JN
2. 000057-10-3	Hexadecanoic acid	19.58	930	JN
3. 000629-96-9	1-Eicosanol	23.48	5200	JN
4. 006624-79-9	1-Dotriacontanol	24.75	520	JN
5. 001599-67-3	1-Docosene	27.18	1300	JN
6. 006971-40-0	17-Pentatriacontene	28.77	530	JN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-148

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.18

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03878.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.34 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	1100	U
62-75-9	N-nitroso-dimethylamine	1100	U
62-53-3	Aniline	1100	U
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	n-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
65-85-0	Benzoic Acid	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	1100	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

B-148

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 4793.18

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03878.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.34 decanted:(Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	1100	U
132-64-9	Dibenzofuran	1100	U
100-02-7	4-Nitrophenol	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
86-73-7	Fluorene	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	n-Nitrosodiphenylamine	1100	U
103-33-3	Azobenzene	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	JB
206-44-0	Fluoranthene	1100	U
92-87-5	Benzidine	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
56-55-3	Benzo[a]anthracene	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	220	JB
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo[b]fluoranthene	1100	U
207-08-9	Benzo[k]fluoranthene	1100	U
50-32-8	Benzo[a]pyrene	1100	U
193-39-5	Indeno[1,2,3-cd]pyrene	1100	U
53-70-3	Dibenz[a,h]anthracene	1100	U
191-24-2	Benzo[g,h,i]perylene	1100	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B-148

Lab Name: FMETL Project: 98-0211

Lab Code: 13461 Case No.: 4793 Location: M-12 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 4793.18

Sample wt/vol: 10.52 (g/ml) G Lab File ID: BN03878.D

Level: (low/med) LOW Date Received: 9/20/99

% Moisture: 11.34 decanted: (Y/N) N Date Extracted: 9/22/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/24/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000084-69-5	1,2-Benzenedicarboxylic acid, bis	18.84	1300	JN
2. 000057-10-3	Hexadecanoic acid	19.58	1100	JN
3. 001454-84-8	1-Nonadecanol	23.48	6600	JN
4. 006971-40-0	17-Pentatriacontene	24.74	800	JN
5. 000629-96-9	1-Eicosanol	27.17	1300	JN
6. 000629-96-9	1-Eicosanol	28.77	580	JN

PEST/PCB'S

METHOD BLANKS

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK55
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0002	ND	NLE
beta-BHC	1	100.00	0.0002	ND	NLE
gamma-BHC	1	100.00	0.0002	ND	0.52
delta-BHC	1	100.00	0.0002	ND	NLE
Heptachlor	1	100.00	0.0002	ND	0.15
Aldrin	1	100.00	0.0002	ND	0.04
Heptachlor Epoxide	1	100.00	0.0003	ND	NLE
Endosulfan I	1	100.00	0.0003	ND	NLE
4,4'-DDE	1	100.00	0.0002	ND	2
Dieldrin	1	100.00	0.0003	ND	0.042
Endrin	1	100.00	0.0003	ND	17
Endosulfan II	1	100.00	0.0002	ND	NLE
4,4'-DDD	1	100.00	0.0003	ND	3
Endrin Aldehyde	1	100.00	0.0003	ND	NLE
4,4'-DDT	1	100.00	0.0006	ND	2
Endosulfan-Sulfate	1	100.00	0.0002	ND	NLE
gamma -Chlordane	1	100.00	0.0003	ND	NLE
alpha-Chlordane	1	100.00	0.0003	ND	NLE
Toxaphene	1	100.00	0.0002	ND	0.1
Arochlor 1016	1	100.00	0.0056	ND	0.49
Arochlor 1221	1	100.00	0.0103	ND	0.49
Arochlor 1232	1	100.00	0.0070	ND	0.49
Arochlor 1242	1	100.00	0.0080	ND	0.49
Arochlor 1248	1	100.00	0.0032	ND	0.49
Arochlor 1254	1	100.00	0.0020	ND	0.49
Arochlor 1260	1	100.00	0.0018	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK57
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/1/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0002	ND	NLE
beta-BHC	1	100.00	0.0002	ND	NLE
gamma-BHC	1	100.00	0.0002	ND	0.52
delta-BHC	1	100.00	0.0002	ND	NLE
Heptachlor	1	100.00	0.0002	ND	0.15
Aldrin	1	100.00	0.0002	ND	0.04
Heptachlor Epoxide	1	100.00	0.0003	ND	NLE
Endosulfan I	1	100.00	0.0003	ND	NLE
4,4'-DDE	1	100.00	0.0002	ND	2
Dieldrin	1	100.00	0.0003	ND	0.042
Endrin	1	100.00	0.0003	ND	17
Endosulfan II	1	100.00	0.0002	ND	NLE
4,4'-DDD	1	100.00	0.0003	ND	3
Endrin Aldehyde	1	100.00	0.0003	ND	NLE
4,4'-DDT	1	100.00	0.0006	ND	2
Endosulfan-Sulfate	1	100.00	0.0002	ND	NLE
gamma -Chlordane	1	100.00	0.0003	ND	NLE
alpha-Chlordane	1	100.00	0.0003	ND	NLE
Toxaphene	1	100.00	0.0002	ND	0.1
Arochlor 1016	1	100.00	0.0056	ND	0.49
Arochlor 1221	1	100.00	0.0103	ND	0.49
Arochlor 1232	1	100.00	0.0070	ND	0.49
Arochlor 1242	1	100.00	0.0080	ND	0.49
Arochlor 1248	1	100.00	0.0032	ND	0.49
Arochlor 1254	1	100.00	0.0020	ND	0.49
Arochlor 1260	1	100.00	0.0018	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK58
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0002	ND	NLE
beta-BHC	1	100.00	0.0002	ND	NLE
gamma-BHC	1	100.00	0.0002	ND	0.52
delta-BHC	1	100.00	0.0002	ND	NLE
Heptachlor	1	100.00	0.0002	ND	0.15
Aldrin	1	100.00	0.0002	ND	0.04
Heptachlor Epoxide	1	100.00	0.0003	ND	NLE
Endosulfan I	1	100.00	0.0003	ND	NLE
4,4'-DDE	1	100.00	0.0002	ND	2
Dieldrin	1	100.00	0.0003	ND	0.042
Endrin	1	100.00	0.0003	ND	17
Endosulfan II	1	100.00	0.0002	ND	NLE
4,4'-DDD	1	100.00	0.0003	ND	3
Endrin Aldehyde	1	100.00	0.0003	ND	NLE
4,4'-DDT	1	100.00	0.0006	ND	2
Endosulfan-Sulfate	1	100.00	0.0002	ND	NLE
gamma -Chlordane	1	100.00	0.0003	ND	NLE
alpha-Chlordane	1	100.00	0.0003	ND	NLE
Toxaphene	1	100.00	0.0002	ND	0.1
Arochlor 1016	1	100.00	0.0056	ND	0.49
Arochlor 1221	1	100.00	0.0103	ND	0.49
Arochlor 1232	1	100.00	0.0070	ND	0.49
Arochlor 1242	1	100.00	0.0080	ND	0.49
Arochlor 1248	1	100.00	0.0032	ND	0.49
Arochlor 1254	1	100.00	0.0020	ND	0.49
Arochlor 1260	1	100.00	0.0018	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25u

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK59
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #.13461

Client :	U.S. Army	**Lab. ID # :**	BLK60
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/26/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK61
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25u

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK390
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK391
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK393
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK395
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/6/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK398
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/10/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK400
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK408
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

FIELD DUPLICATES

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	Field Dup

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	89.13	0.0006	ND	NLE
beta-BHC	2	89.13	0.0006	ND	NLE
gamma-BHC	2	89.13	0.0008	ND	0.52
delta-BHC	2	89.13	0.0008	ND	NLE
Heptachlor	2	89.13	0.0006	ND	0.15
Aldrin	2	89.13	0.0008	ND	0.04
Heptachlor Epoxide	2	89.13	0.0012	ND	NLE
Endosulfan I	2	89.13	0.0010	ND	NLE
4,4'-DDE	2	89.13	0.0008	0.032	2
Dieldrin	2	89.13	0.0010	ND	0.042
Endrin	2	89.13	0.0010	ND	17
Endosulfan II	2	89.13	0.0008	ND	NLE
4,4'-DDD	2	89.13	0.0012	0.050	3
Endrin Aldehyde	2	89.13	0.0010	ND	NLE
4,4'-DDT	2	89.13	0.0022	0.008	2
Endosulfan-Sulfate	2	89.13	0.0008	ND	NLE
gamma -Chlordane	2	89.13	0.0010	ND	NLE
alpha-Chlordane	2	89.13	0.0010	ND	NLE
Toxaphene	2	89.13	0.0006	ND	0.1
Arochlor 1016	2	89.13	0.0226	ND	0.49
Arochlor 1221	2	89.13	0.0416	ND	0.49
Arochlor 1232	2	89.13	0.0283	ND	0.49
Arochlor 1242	2	89.13	0.0323	ND	0.49
Arochlor 1248	2	89.13	0.0129	ND	0.49
Arochlor 1254	2	89.13	0.0081	ND	0.49
Arochlor 1260	2	89.13	0.0073	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25u

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/4/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	Field Dup

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	83.27	0.0007	ND	NLE
beta-BHC	2	83.27	0.0007	ND	NLE
gamma-BHC	2	83.27	0.0009	ND	0.52
delta-BHC	2	83.27	0.0009	ND	NLE
Heptachlor	2	83.27	0.0007	ND	0.15
Aldrin	2	83.27	0.0009	ND	0.04
Heptachlor Epoxide	2	83.27	0.0014	ND	NLE
Endosulfan I	2	83.27	0.0011	ND	NLE
4,4'-DDE	100	83.27	0.0455	0.944	2
Dieldrin	2	83.27	0.0011	ND	0.042
Endrin	2	83.27	0.0011	ND	17
Endosulfan II	2	83.27	0.0009	ND	NLE
4,4'-DDD	100	83.27	0.0683	0.289	3
Endrin Aldehyde	2	83.27	0.0011	ND	NLE
4,4'-DDT	100	83.27	0.1252	0.208	2
Endosulfan-Sulfate	2	83.27	0.0009	ND	NLE
gamma -Chlordane	2	83.27	0.0011	ND	NLE
alpha-Chlordane	2	83.27	0.0011	ND	NLE
Toxaphene	2	83.27	0.0007	ND	0.1
Arochlor 1016	2	83.27	0.0255	ND	0.49
Arochlor 1221	2	83.27	0.0469	ND	0.49
Arochlor 1232	2	83.27	0.0319	ND	0.49
Arochlor 1242	2	83.27	0.0364	ND	0.49
Arochlor 1248	2	83.27	0.0146	ND	0.49
Arochlor 1254	2	83.27	0.0091	ND	0.49
Arochlor 1260	2	83.27	0.0082	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/25/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	Field Dup

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.41	0.0003	ND	NLE
beta-BHC	1	86.41	0.0003	ND	NLE
gamma-BHC	1	86.41	0.0004	ND	0.52
delta-BHC	1	86.41	0.0004	ND	NLE
Heptachlor	1	86.41	0.0003	ND	0.15
Aldrin	1	86.41	0.0004	ND	0.04
Heptachlor Epoxide	1	86.41	0.0007	ND	NLE
Endosulfan I	1	86.41	0.0006	ND	NLE
4,4'-DDE	1	86.41	0.0004	ND	2
Dieldrin	1	86.41	0.0006	ND	0.042
Endrin	1	86.41	0.0006	ND	17
Endosulfan II	1	86.41	0.0004	ND	NLE
4,4'-DDD	1	86.41	0.0007	ND	3
Endrin Aldehyde	1	86.41	0.0006	ND	NLE
4,4'-DDT	1	86.41	0.0012	ND	2
Endosulfan-Sulfate	1	86.41	0.0004	ND	NLE
gamma -Chlordane	1	86.41	0.0006	ND	NLE
alpha-Chlordane	1	86.41	0.0006	ND	NLE
Toxaphene	1	86.41	0.0003	ND	0.1
Arochlor 1016	1	86.41	0.0125	ND	0.49
Arochlor 1221	1	86.41	0.0230	ND	0.49
Arochlor 1232	1	86.41	0.0157	ND	0.49
Arochlor 1242	1	86.41	0.0179	ND	0.49
Arochlor 1248	1	86.41	0.0072	ND	0.49
Arochlor 1254	1	86.41	0.0045	ND	0.49
Arochlor 1260	1	86.41	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

001270

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.30
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	Field Dup

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.94	0.0003	ND	NLE
beta-BHC	1	85.94	0.0003	ND	NLE
gamma-BHC	1	85.94	0.0004	ND	0.52
delta-BHC	1	85.94	0.0004	ND	NLE
Heptachlor	1	85.94	0.0003	ND	0.15
Aldrin	1	85.94	0.0004	ND	0.04
Heptachlor Epoxide	1	85.94	0.0007	ND	NLE
Endosulfan I	1	85.94	0.0006	ND	NLE
4,4'-DDE	1	85.94	0.0004	0.003	2
Dieldrin	1	85.94	0.0006	ND	0.042
Endrin	1	85.94	0.0006	ND	17
Endosulfan II	1	85.94	0.0004	ND	NLE
4,4'-DDD	1	85.94	0.0007	0.002	3
Endrin Aldehyde	1	85.94	0.0006	ND	NLE
4,4'-DDT	1	85.94	0.0012	0.003	2
Endosulfan-Sulfate	1	85.94	0.0004	ND	NLE
gamma -Chlordane	1	85.94	0.0006	ND	NLE
alpha-Chlordane	1	85.94	0.0006	ND	NLE
Toxaphene	1	85.94	0.0003	ND	0.1
Arochlor 1016	1	85.94	0.0124	ND	0.49
Arochlor 1221	1	85.94	0.0227	ND	0.49
Arochlor 1232	1	85.94	0.0154	ND	0.49
Arochlor 1242	1	85.94	0.0176	ND	0.49
Arochlor 1248	1	85.94	0.0071	ND	0.49
Arochlor 1254	1	85.94	0.0044	ND	0.49
Arochlor 1260	1	85.94	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	Field Dup

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.41	0.0003	ND	NLE
beta-BHC	1	89.41	0.0003	ND	NLE
gamma-BHC	1	89.41	0.0004	ND	0.52
delta-BHC	1	89.41	0.0004	ND	NLE
Heptachlor	1	89.41	0.0003	ND	0.15
Aldrin	1	89.41	0.0004	ND	0.04
Heptachlor Epoxide	1	89.41	0.0007	ND	NLE
Endosulfan I	1	89.41	0.0005	ND	NLE
4,4'-DDE	1	89.41	0.0004	0.014	2
Dieldrin	1	89.41	0.0005	ND	0.042
Endrin	1	89.41	0.0005	ND	17
Endosulfan II	1	89.41	0.0004	ND	NLE
4,4'-DDD	1	89.41	0.0007	0.042	3
Endrin Aldehyde	1	89.41	0.0005	ND	NLE
4,4'-DDT	1	89.41	0.0012	0.009	2
Endosulfan-Sulfate	1	89.41	0.0004	ND	NLE
gamma -Chlordane	1	89.41	0.0005	ND	NLE
alpha-Chlordane	1	89.41	0.0005	ND	NLE
Toxaphene	1	89.41	0.0003	ND	0.1
Arochlor 1016	1	89.41	0.0122	ND	0.49
Arochlor 1221	1	89.41	0.0224	ND	0.49
Arochlor 1232	1	89.41	0.0152	ND	0.49
Arochlor 1242	1	89.41	0.0174	ND	0.49
Arochlor 1248	1	89.41	0.0069	ND	0.49
Arochlor 1254	1	89.41	0.0043	ND	0.49
Arochlor 1260	1	89.41	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

001272

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.28
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	Field Dup

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.81	0.0003	ND	NLE
beta-BHC	1	87.81	0.0003	ND	NLE
gamma-BHC	1	87.81	0.0004	ND	0.52
delta-BHC	1	87.81	0.0004	ND	NLE
Heptachlor	1	87.81	0.0003	ND	0.15
Aldrin	1	87.81	0.0004	ND	0.04
Heptachlor Epoxide	1	87.81	0.0006	ND	NLE
Endosulfan I	1	87.81	0.0005	ND	NLE
4,4'-DDE	1	87.81	0.0004	0.014	2
Dieldrin	1	87.81	0.0005	ND	0.042
Endrin	1	87.81	0.0005	ND	17
Endosulfan II	1	87.81	0.0004	ND	NLE
4,4'-DDD	1	87.81	0.0006	0.012	3
Endrin Aldehyde	1	87.81	0.0005	ND	NLE
4,4'-DDT	1	87.81	0.0012	0.012	2
Endosulfan-Sulfate	1	87.81	0.0004	ND	NLE
gamma -Chlordane	1	87.81	0.0005	ND	NLE
alpha-Chlordane	1	87.81	0.0005	ND	NLE
Toxaphene	1	87.81	0.0003	ND	0.1
Arochlor 1016	1	87.81	0.0117	ND	0.49
Arochlor 1221	1	87.81	0.0216	ND	0.49
Arochlor 1232	1	87.81	0.0147	ND	0.49
Arochlor 1242	1	87.81	0.0167	ND	0.49
Arochlor 1248	1	87.81	0.0067	ND	0.49
Arochlor 1254	1	87.81	0.0042	ND	0.49
Arochlor 1260	1	87.81	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

SAMPLES

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.01
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-1

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	88.98	0.0006	ND	NLE
beta-BHC	4	88.98	0.0006	ND	NLE
gamma-BHC	4	88.98	0.0009	ND	0.52
delta-BHC	4	88.98	0.0009	ND	NLE
Heptachlor	4	88.98	0.0006	ND	0.15
Aldrin	4	88.98	0.0009	ND	0.04
Heptachlor Epoxide	4	88.98	0.0013	ND	NLE
Endosulfan I	4	88.98	0.0011	ND	NLE
4,4'-DDE	4	88.98	0.0009	0.009	2
Dieldrin	4	88.98	0.0011	ND	0.042
Endrin	4	88.98	0.0011	ND	17
Endosulfan II	4	88.98	0.0009	ND	NLE
4,4'-DDD	4	88.98	0.0013	0.004	3
Endrin Aldehyde	4	88.98	0.0011	ND	NLE
4,4'-DDT	4	88.98	0.0024	0.035	2
Endosulfan-Sulfate	4	88.98	0.0009	ND	NLE
gamma -Chlordane	4	88.98	0.0011	ND	NLE
alpha-Chlordane	4	88.98	0.0011	ND	NLE
Toxaphene	4	88.98	0.0006	ND	0.1
Arochlor 1016	4	88.98	0.0243	ND	0.49
Arochlor 1221	4	88.98	0.0446	ND	0.49
Arochlor 1232	4	88.98	0.0303	ND	0.49
Arochlor 1242	4	88.98	0.0346	ND	0.49
Arochlor 1248	4	88.98	0.0139	ND	0.49
Arochlor 1254	4	88.98	0.0087	ND	0.49
Arochlor 1260	4	88.98	0.0078	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.03
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-2

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	76.33	0.0007	ND	NLE
beta-BHC	4	76.33	0.0007	ND	NLE
gamma-BHC	4	76.33	0.0010	ND	0.52
delta-BHC	4	76.33	0.0010	ND	NLE
Heptachlor	4	76.33	0.0007	ND	0.15
Aldrin	4	76.33	0.0010	ND	0.04
Heptachlor Epoxide	4	76.33	0.0015	ND	NLE
Endosulfan I	4	76.33	0.0012	ND	NLE
4,4'-DDE	4	76.33	0.0010	0.069	2
Dieldrin	4	76.33	0.0012	ND	0.042
Endrin	4	76.33	0.0012	ND	17
Endosulfan II	4	76.33	0.0010	ND	NLE
4,4'-DDD	4	76.33	0.0015	0.090	3
Endrin Aldehyde	4	76.33	0.0012	ND	NLE
4,4'-DDT	10	76.33	0.0068	0.223	2
Endosulfan-Sulfate	4	76.33	0.0010	ND	NLE
gamma -Chlordane	4	76.33	0.0012	ND	NLE
alpha-Chlordane	4	76.33	0.0012	ND	NLE
Toxaphene	4	76.33	0.0007	ND	0.1
Arochlor 1016	4	76.33	0.0277	ND	0.49
Arochlor 1221	4	76.33	0.0509	ND	0.49
Arochlor 1232	4	76.33	0.0346	ND	0.49
Arochlor 1242	4	76.33	0.0396	ND	0.49
Arochlor 1248	4	76.33	0.0158	ND	0.49
Arochlor 1254	4	76.33	0.0099	ND	0.49
Arochlor 1260	4	76.33	0.0089	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.05
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-3

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	78.50	0.0008	ND	NLE
beta-BHC	4	78.50	0.0008	ND	NLE
gamma-BHC	4	78.50	0.0010	ND	0.52
delta-BHC	4	78.50	0.0010	ND	NLE
Heptachlor	4	78.50	0.0008	ND	0.15
Aldrin	4	78.50	0.0010	ND	0.04
Heptachlor Epoxide	4	78.50	0.0015	ND	NLE
Endosulfan I	4	78.50	0.0013	ND	NLE
4,4'-DDE	4	78.50	0.0010	0.074	2
Dieldrin	4	78.50	0.0013	ND	0.042
Endrin	4	78.50	0.0013	ND	17
Endosulfan II	4	78.50	0.0010	ND	NLE
4,4'-DDD	4	78.50	0.0015	0.115	3
Endrin Aldehyde	4	78.50	0.0013	ND	NLE
4,4'-DDT	10	78.50	0.0069	0.202	2
Endosulfan-Sulfate	4	78.50	0.0010	ND	NLE
gamma -Chlordane	4	78.50	0.0013	ND	NLE
alpha-Chlordane	4	78.50	0.0013	ND	NLE
Toxaphene	4	78.50	0.0008	ND	0.1
Arochlor 1016	4	78.50	0.0283	ND	0.49
Arochlor 1221	4	78.50	0.0520	ND	0.49
Arochlor 1232	4	78.50	0.0353	ND	0.49
Arochlor 1242	4	78.50	0.0404	ND	0.49
Arochlor 1248	4	78.50	0.0162	ND	0.49
Arochlor 1254	4	78.50	0.0101	ND	0.49
Arochlor 1260	4	78.50	0.0091	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.07
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-4

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	80.10	0.0007	ND	NLE
beta-BHC	4	80.10	0.0007	ND	NLE
gamma-BHC	4	80.10	0.0010	ND	0.52
delta-BHC	4	80.10	0.0010	ND	NLE
Heptachlor	4	80.10	0.0007	ND	0.15
Aldrin	4	80.10	0.0010	ND	0.04
Heptachlor Epoxide	4	80.10	0.0015	ND	NLE
Endosulfan I	4	80.10	0.0012	ND	NLE
4,4'-DDE	4	80.10	0.0010	0.014	2
Dieldrin	4	80.10	0.0012	ND	0.042
Endrin	4	80.10	0.0012	ND	17
Endosulfan II	4	80.10	0.0010	ND	NLE
4,4'-DDD	4	80.10	0.0015	0.008	3
Endrin Aldehyde	4	80.10	0.0012	ND	NLE
4,4'-DDT	4	80.10	0.0027	0.081	2
Endosulfan-Sulfate	4	80.10	0.0010	ND	NLE
gamma -Chlordane	4	80.10	0.0012	ND	NLE
alpha-Chlordane	4	80.10	0.0012	ND	NLE
Toxaphene	4	80.10	0.0007	ND	0.1
Arochlor 1016	4	80.10	0.0274	ND	0.49
Arochlor 1221	4	80.10	0.0504	ND	0.49
Arochlor 1232	4	80.10	0.0342	ND	0.49
Arochlor 1242	4	80.10	0.0391	ND	0.49
Arochlor 1248	4	80.10	0.0157	ND	0.49
Arochlor 1254	4	80.10	0.0098	ND	0.49
Arochlor 1260	4	80.10	0.0088	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.09
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-5

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	81.37	0.0007	ND	NLE
beta-BHC	4	81.37	0.0007	ND	NLE
gamma-BHC	4	81.37	0.0010	ND	0.52
delta-BHC	4	81.37	0.0010	ND	NLE
Heptachlor	4	81.37	0.0007	ND	0.15
Aldrin	4	81.37	0.0010	ND	0.04
Heptachlor Epoxide	4	81.37	0.0015	ND	NLE
Endosulfan I	4	81.37	0.0012	ND	NLE
4,4'-DDE	4	81.37	0.0010	0.028	2
Dieldrin	4	81.37	0.0012	ND	0.042
Endrin	4	81.37	0.0012	ND	17
Endosulfan II	4	81.37	0.0010	ND	NLE
4,4'-DDD	4	81.37	0.0015	0.055	3
Endrin Aldehyde	4	81.37	0.0012	ND	NLE
4,4'-DDT	4	81.37	0.0027	0.084	2
Endosulfan-Sulfate	4	81.37	0.0010	ND	NLE
gamma -Chlordane	4	81.37	0.0012	ND	NLE
alpha-Chlordane	4	81.37	0.0012	ND	NLE
Toxaphene	4	81.37	0.0007	ND	0.1
Arochlor 1016	4	81.37	0.0274	ND	0.49
Arochlor 1221	4	81.37	0.0503	ND	0.49
Arochlor 1232	4	81.37	0.0342	ND	0.49
Arochlor 1242	4	81.37	0.0391	ND	0.49
Arochlor 1248	4	81.37	0.0156	ND	0.49
Arochlor 1254	4	81.37	0.0098	ND	0.49
Arochlor 1260	4	81.37	0.0088	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.11
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-6

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	78.76	0.0008	ND	NLE
beta-BHC	4	78.76	0.0008	ND	NLE
gamma-BHC	4	78.76	0.0010	ND	0.52
delta-BHC	4	78.76	0.0010	ND	NLE
Heptachlor	4	78.76	0.0008	ND	0.15
Aldrin	4	78.76	0.0010	ND	0.04
Heptachlor Epoxide	4	78.76	0.0015	ND	NLE
Endosulfan I	4	78.76	0.0013	ND	NLE
4,4'-DDE	4	78.76	0.0010	0.070	2
Dieldrin	4	78.76	0.0013	ND	0.042
Endrin	4	78.76	0.0013	ND	17
Endosulfan II	4	78.76	0.0010	ND	NLE
4,4'-DDD	4	78.76	0.0015	0.088	3
Endrin Aldehyde	4	78.76	0.0013	ND	NLE
4,4'-DDT	20	78.76	0.0138	0.306	2
Endosulfan-Sulfate	4	78.76	0.0010	ND	NLE
gamma -Chlordane	4	78.76	0.0013	ND	NLE
alpha-Chlordane	4	78.76	0.0013	ND	NLE
Toxaphene	4	78.76	0.0008	ND	0.1
Arochlor 1016	4	78.76	0.0281	ND	0.49
Arochlor 1221	4	78.76	0.0517	ND	0.49
Arochlor 1232	4	78.76	0.0351	ND	0.49
Arochlor 1242	4	78.76	0.0401	ND	0.49
Arochlor 1248	4	78.76	0.0161	ND	0.49
Arochlor 1254	4	78.76	0.0100	ND	0.49
Arochlor 1260	4	78.76	0.0090	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.13
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-7

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	79.29	0.0007	ND	NLE
beta-BHC	4	79.29	0.0007	ND	NLE
gamma-BHC	4	79.29	0.0010	ND	0.52
delta-BHC	4	79.29	0.0010	ND	NLE
Heptachlor	4	79.29	0.0007	ND	0.15
Aldrin	4	79.29	0.0010	ND	0.04
Heptachlor Epoxide	4	79.29	0.0014	ND	NLE
Endosulfan I	4	79.29	0.0012	ND	NLE
4,4'-DDE	4	79.29	0.0010	0.075	2
Dieldrin	4	79.29	0.0012	ND	0.042
Endrin	4	79.29	0.0012	ND	17
Endosulfan II	4	79.29	0.0010	ND	NLE
4,4'-DDD	10	79.29	0.0036	0.311	3
Endrin Aldehyde	4	79.29	0.0012	ND	NLE
4,4'-DDT	10	79.29	0.0066	0.113	2
Endosulfan-Sulfate	4	79.29	0.0010	ND	NLE
gamma -Chlordane	4	79.29	0.0012	ND	NLE
alpha-Chlordane	4	79.29	0.0012	ND	NLE
Toxaphene	4	79.29	0.0007	ND	0.1
Arochlor 1016	4	79.29	0.0268	ND	0.49
Arochlor 1221	4	79.29	0.0492	ND	0.49
Arochlor 1232	4	79.29	0.0335	ND	0.49
Arochlor 1242	4	79.29	0.0382	ND	0.49
Arochlor 1248	4	79.29	0.0153	ND	0.49
Arochlor 1254	4	79.29	0.0096	ND	0.49
Arochlor 1260	4	79.29	0.0086	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.15
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/20/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-8

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	76.39	0.0008	ND	NLE
beta-BHC	4	76.39	0.0008	ND	NLE
gamma-BHC	4	76.39	0.0010	ND	0.52
delta-BHC	4	76.39	0.0010	ND	NLE
Heptachlor	4	76.39	0.0008	ND	0.15
Aldrin	4	76.39	0.0010	ND	0.04
Heptachlor Epoxide	4	76.39	0.0016	ND	NLE
Endosulfan I	4	76.39	0.0013	ND	NLE
4,4'-DDE	50	76.39	0.0131	0.541	2
Dieldrin	4	76.39	0.0013	ND	0.042
Endrin	4	76.39	0.0013	ND	17
Endosulfan II	4	76.39	0.0010	ND	NLE
4,4'-DDD	50	76.39	0.0196	0.736	3
Endrin Aldehyde	4	76.39	0.0013	ND	NLE
4,4'-DDT	50	76.39	0.0359	0.500	2
Endosulfan-Sulfate	4	76.39	0.0010	ND	NLE
gamma -Chlordane	4	76.39	0.0013	ND	NLE
alpha-Chlordane	4	76.39	0.0013	ND	NLE
Toxaphene	4	76.39	0.0008	ND	0.1
Arochlor 1016	4	76.39	0.0293	ND	0.49
Arochlor 1221	4	76.39	0.0539	ND	0.49
Arochlor 1232	4	76.39	0.0366	ND	0.49
Arochlor 1242	4	76.39	0.0418	ND	0.49
Arochlor 1248	4	76.39	0.0167	ND	0.49
Arochlor 1254	4	76.39	0.0105	ND	0.49
Arochlor 1260	4	76.39	0.0094	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcidc 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3420.17
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/19/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/25/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-9

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	74.50	0.0008	ND	NLE
beta-BHC	4	74.50	0.0008	ND	NLE
gamma-BHC	4	74.50	0.0010	ND	0.52
delta-BHC	4	74.50	0.0010	ND	NLE
Heptachlor	4	74.50	0.0008	ND	0.15
Aldrin	4	74.50	0.0010	ND	0.04
Heptachlor Epoxide	4	74.50	0.0016	ND	NLE
Endosulfan I	4	74.50	0.0013	ND	NLE
4,4'-DDE	25	74.50	0.0065	0.307	2
Dieldrin	4	74.50	0.0013	ND	0.042
Endrin	4	74.50	0.0013	ND	17
Endosulfan II	4	74.50	0.0010	ND	NLE
4,4'-DDD	25	74.50	0.0097	0.364	3
Endrin Aldehyde	4	74.50	0.0013	ND	NLE
4,4'-DDT	25	74.50	0.0178	0.271	2
Endosulfan-Sulfate	4	74.50	0.0010	ND	NLE
gamma -Chlordane	4	74.50	0.0013	ND	NLE
alpha-Chlordane	4	74.50	0.0013	ND	NLE
Toxaphene	4	74.50	0.0008	ND	0.1
Arochlor 1016	4	74.50	0.0290	ND	0.49
Arochlor 1221	4	74.50	0.0534	ND	0.49
Arochlor 1232	4	74.50	0.0363	ND	0.49
Arochlor 1242	4	74.50	0.0415	ND	0.49
Arochlor 1248	4	74.50	0.0166	ND	0.49
Arochlor 1254	4	74.50	0.0104	ND	0.49
Arochlor 1260	4	74.50	0.0093	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/1/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-10

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	**20**	**91.30**	**0.0030**	**ND**	**NLE**
beta-BHC	**20**	**91.30**	**0.0030**	**ND**	**NLE**
gamma-BHC	**20**	**91.30**	**0.0041**	**ND**	**0.52**
delta-BHC	**20**	**91.30**	**0.0041**	**ND**	**NLE**
Heptachlor	**20**	**91.30**	**0.0030**	**ND**	**0.15**
Aldrin	**20**	**91.30**	**0.0041**	**ND**	**0.04**
Heptachlor Epoxide	**20**	**91.30**	**0.0061**	**ND**	**NLE**
Endosulfan I	**20**	**91.30**	**0.0051**	**ND**	**NLE**
4,4'-DDE	**20**	**91.30**	**0.0041**	**0.265**	**2**
Dieldrin	**20**	**91.30**	**0.0051**	**ND**	**0.042**
Endrin	**20**	**91.30**	**0.0051**	**ND**	**17**
Endosulfan II	**20**	**91.30**	**0.0041**	**ND**	**NLE**
4,4'-DDD	**20**	**91.30**	**0.0061**	**0.255**	**3**
Endrin Aldehyde	**20**	**91.30**	**0.0051**	**ND**	**NLE**
4,4'-DDT	**20**	**91.30**	**0.0111**	**0.203**	**2**
Endosulfan-Sulfate	**20**	**91.30**	**0.0041**	**ND**	**NLE**
gamma -Chlordane	**20**	**91.30**	**0.0051**	**ND**	**NLE**
alpha-Chlordane	**20**	**91.30**	**0.0051**	**ND**	**NLE**
Toxaphene	**20**	**91.30**	**0.0030**	**ND**	**0.1**
Arochlor 1016	**20**	**91.30**	**0.1134**	**ND**	**0.49**
Arochlor 1221	**20**	**91.30**	**0.2086**	**ND**	**0.49**
Arochlor 1232	**20**	**91.30**	**0.1418**	**ND**	**0.49**
Arochlor 1242	**20**	**91.30**	**0.1620**	**ND**	**0.49**
Arochlor 1248	**20**	**91.30**	**0.0648**	**ND**	**0.49**
Arochlor 1254	**20**	**91.30**	**0.0405**	**ND**	**0.49**
Arochlor 1260	**20**	**91.30**	**0.0365**	**ND**	**0.49**

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

001284

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-11

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	89.45	0.0007	ND	NLE
beta-BHC	4	89.45	0.0007	ND	NLE
gamma-BHC	4	89.45	0.0009	ND	0.52
delta-BHC	4	89.45	0.0009	ND	NLE
Heptachlor	4	89.45	0.0007	ND	0.15
Aldrin	4	89.45	0.0009	ND	0.04
Heptachlor Epoxide	4	89.45	0.0013	ND	NLE
Endosulfan I	4	89.45	0.0011	ND	NLE
4,4'-DDE	4	89.45	0.0009	0.042	2
Dieldrin	4	89.45	0.0011	ND	0.042
Endrin	4	89.45	0.0011	ND	17
Endosulfan II	4	89.45	0.0009	ND	NLE
4,4'-DDD	4	89.45	0.0013	0.028	3
Endrin Aldehyde	4	89.45	0.0011	ND	NLE
4,4'-DDT	4	89.45	0.0024	0.078	2
Endosulfan-Sulfate	4	89.45	0.0009	ND	NLE
gamma -Chlordane	4	89.45	0.0011	ND	NLE
alpha-Chlordane	4	89.45	0.0011	ND	NLE
Toxaphene	4	89.45	0.0007	ND	0.1
Arochlor 1016	4	89.45	0.0246	ND	0.49
Arochlor 1221	4	89.45	0.0452	ND	0.49
Arochlor 1232	4	89.45	0.0307	ND	0.49
Arochlor 1242	4	89.45	0.0351	ND	0.49
Arochlor 1248	4	89.45	0.0140	ND	0.49
Arochlor 1254	4	89.45	0.0088	ND	0.49
Arochlor 1260	4	89.45	0.0079	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army DPW. SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703	**Lab. ID # :** **Date Rec'd:** **Extraction Date:** **Analysis Date:**	3424.06 3/20/98 3/23/98 5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-12

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	87.67	0.0007	ND	NLE
beta-BHC	4	87.67	0.0007	ND	NLE
gamma-BHC	4	87.67	0.0009	ND	0.52
delta-BHC	4	87.67	0.0009	ND	NLE
Heptachlor	4	87.67	0.0007	ND	0.15
Aldrin	4	87.67	0.0009	ND	0.04
Heptachlor Epoxide	4	87.67	0.0014	ND	NLE
Endosulfan I	4	87.67	0.0011	ND	NLE
4,4'-DDE	4	87.67	0.0009	0.065	2
Dieldrin	4	87.67	0.0011	ND	0.042
Endrin	4	87.67	0.0011	ND	17
Endosulfan II	4	87.67	0.0009	ND	NLE
4,4'-DDD	4	87.67	0.0014	0.052	3
Endrin Aldehyde	4	87.67	0.0011	ND	NLE
4,4'-DDT	4	87.67	0.0025	0.154	2
Endosulfan-Sulfate	4	87.67	0.0009	ND	NLE
gamma -Chlordane	4	87.67	0.0011	ND	NLE
alpha-Chlordane	4	87.67	0.0011	ND	NLE
Toxaphene	4	87.67	0.0007	ND	0.1
Arochlor 1016	4	87.67	0.0253	ND	0.49
Arochlor 1221	4	87.67	0.0465	ND	0.49
Arochlor 1232	4	87.67	0.0316	ND	0.49
Arochlor 1242	4	87.67	0.0361	ND	0.49
Arochlor 1248	4	87.67	0.0144	ND	0.49
Arochlor 1254	4	87.67	0.0090	ND	0.49
Arochlor 1260	4	87.67	0.0081	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-13

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	20	84.43	0.0035	ND	NLE
beta-BHC	20	84.43	0.0035	ND	NLE
gamma-BHC	20	84.43	0.0047	ND	0.52
delta-BHC	20	84.43	0.0047	ND	NLE
Heptachlor	20	84.43	0.0035	ND	0.15
Aldrin	20	84.43	0.0047	ND	0.04
Heptachlor Epoxide	20	84.43	0.0071	ND	NLE
Endosulfan I	20	84.43	0.0059	ND	NLE
4,4'-DDE	20	84.43	0.0047	0.350	2
Dieldrin	20	84.43	0.0059	ND	0.042
Endrin	20	84.43	0.0059	ND	17
Endosulfan II	20	84.43	0.0047	ND	NLE
4,4'-DDD	20	84.43	0.0071	0.397	3
Endrin Aldehyde	20	84.43	0.0059	ND	NLE
4,4'-DDT	20	84.43	0.0130	0.504	2
Endosulfan-Sulfate	20	84.43	0.0047	ND	NLE
gamma -Chlordane	20	84.43	0.0059	ND	NLE
alpha-Chlordane	20	84.43	0.0059	ND	NLE
Toxaphene	20	84.43	0.0035	ND	0.1
Arochlor 1016	20	84.43	0.1321	ND	0.49
Arochlor 1221	20	84.43	0.2430	ND	0.49
Arochlor 1232	20	84.43	0.1652	ND	0.49
Arochlor 1242	20	84.43	0.1888	ND	0.49
Arochlor 1248	20	84.43	0.0755	ND	0.49
Arochlor 1254	20	84.43	0.0472	ND	0.49
Arochlor 1260	20	84.43	0.0425	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-14

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	89.84	0.0006	ND	NLE
beta-BHC	4	89.84	0.0006	ND	NLE
gamma-BHC	4	89.84	0.0008	ND	0.52
delta-BHC	4	89.84	0.0008	ND	NLE
Heptachlor	4	89.84	0.0006	ND	0.15
Aldrin	4	89.84	0.0008	ND	0.04
Heptachlor Epoxide	4	89.84	0.0012	ND	NLE
Endosulfan I	4	89.84	0.0010	ND	NLE
4,4'-DDE	4	89.84	0.0008	0.044	2
Dieldrin	4	89.84	0.0010	ND	0.042
Endrin	4	89.84	0.0010	ND	17
Endosulfan II	4	89.84	0.0008	ND	NLE
4,4'-DDD	4	89.84	0.0012	0.024	3
Endrin Aldehyde	4	89.84	0.0010	ND	NLE
4,4'-DDT	4	89.84	0.0023	0.067	2
Endosulfan-Sulfate	4	89.84	0.0008	ND	NLE
gamma -Chlordane	4	89.84	0.0010	ND	NLE
alpha-Chlordane	4	89.84	0.0010	ND	NLE
Toxaphene	4	89.84	0.0006	ND	0.1
Arochlor 1016	4	89.84	0.0232	ND	0.49
Arochlor 1221	4	89.84	0.0428	ND	0.49
Arochlor 1232	4	89.84	0.0291	ND	0.49
Arochlor 1242	4	89.84	0.0332	ND	0.49
Arochlor 1248	4	89.84	0.0133	ND	0.49
Arochlor 1254	4	89.84	0.0083	ND	0.49
Arochlor 1260	4	89.84	0.0075	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-15

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	20	81.13	0.0036	ND	NLE
beta-BHC	20	81.13	0.0036	ND	NLE
gamma-BHC	20	81.13	0.0048	ND	0.52
delta-BHC	20	81.13	0.0048	ND	NLE
Heptachlor	20	81.13	0.0036	ND	0.15
Aldrin	20	81.13	0.0048	ND	0.04
Heptachlor Epoxide	20	81.13	0.0072	ND	NLE
Endosulfan I	20	81.13	0.0060	ND	NLE
4,4'-DDE	20	81.13	0.0048	0.559	2
Dieldrin	20	81.13	0.0060	ND	0.042
Endrin	20	81.13	0.0060	ND	17
Endosulfan II	20	81.13	0.0048	ND	NLE
4,4'-DDD	20	81.13	0.0072	0.139	3
Endrin Aldehyde	20	81.13	0.0060	ND	NLE
4,4'-DDT	20	81.13	0.0132	0.481	2
Endosulfan-Sulfate	20	81.13	0.0048	ND	NLE
gamma -Chlordane	20	81.13	0.0060	ND	NLE
alpha-Chlordane	20	81.13	0.0060	ND	NLE
Toxaphene	20	81.13	0.0036	ND	0.1
Arochlor 1016	20	81.13	0.1340	ND	0.49
Arochlor 1221	20	81.13	0.2465	ND	0.49
Arochlor 1232	20	81.13	0.1675	ND	0.49
Arochlor 1242	20	81.13	0.1915	ND	0.49
Arochlor 1248	20	81.13	0.0766	ND	0.49
Arochlor 1254	20	81.13	0.0479	ND	0.49
Arochlor 1260	20	81.13	0.0431	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/23/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-16

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	77.13	0.0008	ND	NLE
beta-BHC	4	77.13	0.0008	ND	NLE
gamma-BHC	4	77.13	0.0010	ND	0.52
delta-BHC	4	77.13	0.0010	ND	NLE
Heptachlor	4	77.13	0.0008	ND	0.15
Aldrin	4	77.13	0.0010	ND	0.04
Heptachlor Epoxide	4	77.13	0.0015	ND	NLE
Endosulfan I	4	77.13	0.0013	ND	NLE
4,4'-DDE	4	77.13	0.0010	0.039	2
Dieldrin	4	77.13	0.0013	ND	0.042
Endrin	4	77.13	0.0013	ND	17
Endosulfan II	4	77.13	0.0010	ND	NLE
4,4'-DDD	4	77.13	0.0015	0.012	3
Endrin Aldehyde	4	77.13	0.0013	ND	NLE
4,4'-DDT	4	77.13	0.0028	0.035	2
Endosulfan-Sulfate	4	77.13	0.0010	ND	NLE
gamma -Chlordane	4	77.13	0.0013	ND	NLE
alpha-Chlordane	4	77.13	0.0013	ND	NLE
Toxaphene	4	77.13	0.0008	ND	0.1
Arochlor 1016	4	77.13	0.0283	ND	0.49
Arochlor 1221	4	77.13	0.0520	ND	0.49
Arochlor 1232	4	77.13	0.0354	ND	0.49
Arochlor 1242	4	77.13	0.0404	ND	0.49
Arochlor 1248	4	77.13	0.0162	ND	0.49
Arochlor 1254	4	77.13	0.0101	ND	0.49
Arochlor 1260	4	77.13	0.0091	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-17

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	79.92	0.0007	ND	NLE
beta-BHC	4	79.92	0.0007	ND	NLE
gamma-BHC	4	79.92	0.0010	ND	0.52
delta-BHC	4	79.92	0.0010	ND	NLE
Heptachlor	4	79.92	0.0007	ND	0.15
Aldrin	4	79.92	0.0010	ND	0.04
Heptachlor Epoxide	4	79.92	0.0015	ND	NLE
Endosulfan I	4	79.92	0.0012	ND	NLE
4,4'-DDE	4	79.92	0.0010	0.002	2
Dieldrin	4	79.92	0.0012	ND	0.042
Endrin	4	79.92	0.0012	ND	17
Endosulfan II	4	79.92	0.0010	ND	NLE
4,4'-DDD	4	79.92	0.0015	0.003	3
Endrin Aldehyde	4	79.92	0.0012	ND	NLE
4,4'-DDT	4	79.92	0.0027	0.006	2
Endosulfan-Sulfate	4	79.92	0.0010	ND	NLE
gamma -Chlordane	4	79.92	0.0012	ND	NLE
alpha-Chlordane	4	79.92	0.0012	ND	NLE
Toxaphene	4	79.92	0.0007	ND	0.1
Arochlor 1016	4	79.92	0.0276	ND	0.49
Arochlor 1221	4	79.92	0.0508	ND	0.49
Arochlor 1232	4	79.92	0.0346	ND	0.49
Arochlor 1242	4	79.92	0.0395	ND	0.49
Arochlor 1248	4	79.92	0.0158	ND	0.49
Arochlor 1254	4	79.92	0.0099	ND	0.49
Arochlor 1260	4	79.92	0.0089	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-18

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	77.41	0.0008	ND	NLE
beta-BHC	4	77.41	0.0008	ND	NLE
gamma-BHC	4	77.41	0.0010	ND	0.52
delta-BHC	4	77.41	0.0010	ND	NLE
Heptachlor	4	77.41	0.0008	ND	0.15
Aldrin	4	77.41	0.0010	ND	0.04
Heptachlor Epoxide	4	77.41	0.0015	ND	NLE
Endosulfan I	4	77.41	0.0013	ND	NLE
4,4'-DDE	4	77.41	0.0010	0.033	2
Dieldrin	4	77.41	0.0013	ND	0.042
Endrin	4	77.41	0.0013	ND	17
Endosulfan II	4	77.41	0.0010	ND	NLE
4,4'-DDD	4	77.41	0.0015	0.044	3
Endrin Aldehyde	4	77.41	0.0013	ND	NLE
4,4'-DDT	4	77.41	0.0028	0.011	2
Endosulfan-Sulfate	4	77.41	0.0010	ND	NLE
gamma -Chlordane	4	77.41	0.0013	ND	NLE
alpha-Chlordane	4	77.41	0.0013	ND	NLE
Toxaphene	4	77.41	0.0008	ND	0.1
Arochlor 1016	4	77.41	0.0284	ND	0.49
Arochlor 1221	4	77.41	0.0522	ND	0.49
Arochlor 1232	4	77.41	0.0354	ND	0.49
Arochlor 1242	4	77.41	0.0405	ND	0.49
Arochlor 1248	4	77.41	0.0162	ND	0.49
Arochlor 1254	4	77.41	0.0101	ND	0.49
Arochlor 1260	4	77.41	0.0091	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3424.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/20/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-19

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	4	78.63	0.0008	ND	NLE
beta-BHC	4	78.63	0.0008	ND	NLE
gamma-BHC	4	78.63	0.0010	ND	0.52
delta-BHC	4	78.63	0.0010	ND	NLE
Heptachlor	4	78.63	0.0008	ND	0.15
Aldrin	4	78.63	0.0010	ND	0.04
Heptachlor Epoxide	4	78.63	0.0015	ND	NLE
Endosulfan I	4	78.63	0.0013	ND	NLE
4,4'-DDE	4	78.63	0.0010	0.048	2
Dieldrin	4	78.63	0.0013	ND	0.042
Endrin	4	78.63	0.0013	ND	17
Endosulfan II	4	78.63	0.0010	ND	NLE
4,4'-DDD	4	78.63	0.0015	0.015	3
Endrin Aldehyde	4	78.63	0.0013	ND	NLE
4,4'-DDT	4	78.63	0.0028	0.036	2
Endosulfan-Sulfate	4	78.63	0.0010	ND	NLE
gamma -Chlordane	4	78.63	0.0013	ND	NLE
alpha-Chlordane	4	78.63	0.0013	ND	NLE
Toxaphene	4	78.63	0.0008	ND	0.1
Arochlor 1016	4	78.63	0.0285	ND	0.49
Arochlor 1221	4	78.63	0.0523	ND	0.49
Arochlor 1232	4	78.63	0.0356	ND	0.49
Arochlor 1242	4	78.63	0.0407	ND	0.49
Arochlor 1248	4	78.63	0.0163	ND	0.49
Arochlor 1254	4	78.63	0.0102	ND	0.49
Arochlor 1260	4	78.63	0.0091	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-20

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	86.22	0.0007	ND	NLE
beta-BHC	2	86.22	0.0007	ND	NLE
gamma-BHC	2	86.22	0.0009	ND	0.52
delta-BHC	2	86.22	0.0009	ND	NLE
Heptachlor	2	86.22	0.0007	ND	0.15
Aldrin	2	86.22	0.0009	ND	0.04
Heptachlor Epoxide	2	86.22	0.0013	ND	NLE
Endosulfan I	2	86.22	0.0011	ND	NLE
4,4'-DDE	5	86.22	0.0022	0.098	2
Dieldrin	2	86.22	0.0011	ND	0.042
Endrin	2	86.22	0.0011	ND	17
Endosulfan II	2	86.22	0.0009	ND	NLE
4,4'-DDD	2	86.22	0.0013	0.072	3
Endrin Aldehyde	2	86.22	0.0011	ND	NLE
4,4'-DDT	5	86.22	0.0061	0.194	2
Endosulfan-Sulfate	2	86.22	0.0009	ND	NLE
gamma -Chlordane	2	86.22	0.0011	ND	NLE
alpha-Chlordane	2	86.22	0.0011	ND	NLE
Toxaphene	2	86.22	0.0007	ND	0.1
Arochlor 1016	2	86.22	0.0249	ND	0.49
Arochlor 1221	2	86.22	0.0458	ND	0.49
Arochlor 1232	2	86.22	0.0311	ND	0.49
Arochlor 1242	2	86.22	0.0356	ND	0.49
Arochlor 1248	2	86.22	0.0142	ND	0.49
Arochlor 1254	2	86.22	0.0089	ND	0.49
Arochlor 1260	2	86.22	0.0080	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-21

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	83.58	0.0007	ND	NLE
beta-BHC	2	83.58	0.0007	ND	NLE
gamma-BHC	2	83.58	0.0010	ND	0.52
delta-BHC	2	83.58	0.0010	ND	NLE
Heptachlor	2	83.58	0.0007	ND	0.15
Aldrin	2	83.58	0.0010	ND	0.04
Heptachlor Epoxide	2	83.58	0.0014	ND	NLE
Endosulfan I	2	83.58	0.0012	ND	NLE
4,4'-DDE	10	83.58	0.0048	0.232	2
Dieldrin	2	83.58	0.0012	ND	0.042
Endrin	2	83.58	0.0012	ND	17
Endosulfan II	2	83.58	0.0010	ND	NLE
4,4'-DDD	10	83.58	0.0072	0.207	3
Endrin Aldehyde	2	83.58	0.0012	ND	NLE
4,4'-DDT	2	83.58	0.0026	0.116	2
Endosulfan-Sulfate	2	83.58	0.0010	ND	NLE
gamma -Chlordane	2	83.58	0.0012	ND	NLE
alpha-Chlordane	2	83.58	0.0012	ND	NLE
Toxaphene	2	83.58	0.0007	ND	0.1
Arochlor 1016	2	83.58	0.0268	ND	0.49
Arochlor 1221	2	83.58	0.0493	ND	0.49
Arochlor 1232	2	83.58	0.0335	ND	0.49
Arochlor 1242	2	83.58	0.0383	ND	0.49
Arochlor 1248	2	83.58	0.0153	ND	0.49
Arochlor 1254	2	83.58	0.0096	ND	0.49
Arochlor 1260	2	83.58	0.0086	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-22

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	83.83	0.0007	ND	NLE
beta-BHC	2	83.83	0.0007	ND	NLE
gamma-BHC	2	83.83	0.0009	ND	0.52
delta-BHC	2	83.83	0.0009	ND	NLE
Heptachlor	2	83.83	0.0007	ND	0.15
Aldrin	2	83.83	0.0009	ND	0.04
Heptachlor Epoxide	2	83.83	0.0014	ND	NLE
Endosulfan I	2	83.83	0.0012	ND	NLE
4,4'-DDE	25	83.83	0.0116	0.317	2
Dieldrin	2	83.83	0.0012	ND	0.042
Endrin	2	83.83	0.0012	ND	17
Endosulfan II	2	83.83	0.0009	ND	NLE
4,4'-DDD	25	83.83	0.0174	0.158	3
Endrin Aldehyde	2	83.83	0.0012	ND	NLE
4,4'-DDT	25	83.83	0.0319	0.326	2
Endosulfan-Sulfate	2	83.83	0.0009	ND	NLE
gamma -Chlordane	2	83.83	0.0012	ND	NLE
alpha-Chlordane	2	83.83	0.0012	ND	NLE
Toxaphene	2	83.83	0.0007	ND	0.1
Arochlor 1016	2	83.83	0.0260	ND	0.49
Arochlor 1221	2	83.83	0.0478	ND	0.49
Arochlor 1232	2	83.83	0.0325	ND	0.49
Arochlor 1242	2	83.83	0.0371	ND	0.49
Arochlor 1248	2	83.83	0.0149	ND	0.49
Arochlor 1254	2	83.83	0.0093	ND	0.49
Arochlor 1260	2	83.83	0.0084	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-23

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	79.40	0.0007	ND	NLE
beta-BHC	2	79.40	0.0007	ND	NLE
gamma-BHC	2	79.40	0.0010	ND	0.52
delta-BHC	2	79.40	0.0010	ND	NLE
Heptachlor	2	79.40	0.0007	ND	0.15
Aldrin	2	79.40	0.0010	ND	0.04
Heptachlor Epoxide	2	79.40	0.0015	ND	NLE
Endosulfan I	2	79.40	0.0012	ND	NLE
4,4'-DDE	10	79.40	0.0049	0.109	2
Dieldrin	2	79.40	0.0012	ND	0.042
Endrin	2	79.40	0.0012	ND	17
Endosulfan II	2	79.40	0.0010	ND	NLE
4,4'-DDD	10	79.40	0.0074	0.113	3
Endrin Aldehyde	2	79.40	0.0012	ND	NLE
4,4'-DDT	10	79.40	0.0136	0.304	2
Endosulfan-Sulfate	2	79.40	0.0010	ND	NLE
gamma -Chlordane	2	79.40	0.0012	ND	NLE
alpha-Chlordane	2	79.40	0.0012	ND	NLE
Toxaphene	2	79.40	0.0007	ND	0.1
Arochlor 1016	2	79.40	0.0277	ND	0.49
Arochlor 1221	2	79.40	0.0510	ND	0.49
Arochlor 1232	2	79.40	0.0346	ND	0.49
Arochlor 1242	2	79.40	0.0396	ND	0.49
Arochlor 1248	2	79.40	0.0158	ND	0.49
Arochlor 1254	2	79.40	0.0099	ND	0.49
Arochlor 1260	2	79.40	0.0089	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-24

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	82.62	0.0007	ND	NLE
beta-BHC	2	82.62	0.0007	ND	NLE
gamma-BHC	2	82.62	0.0010	ND	0.52
delta-BHC	2	82.62	0.0010	ND	NLE
Heptachlor	2	82.62	0.0007	ND	0.15
Aldrin	2	82.62	0.0010	ND	0.04
Heptachlor Epoxide	2	82.62	0.0015	ND	NLE
Endosulfan I	2	82.62	0.0012	ND	NLE
4,4'-DDE	2	82.62	0.0010	0.066	2
Dieldrin	2	82.62	0.0012	ND	0.042
Endrin	2	82.62	0.0012	ND	17
Endosulfan II	2	82.62	0.0010	ND	NLE
4,4'-DDD	2	82.62	0.0015	0.063	3
Endrin Aldehyde	2	82.62	0.0012	ND	NLE
4,4'-DDT	2	82.62	0.0027	0.045	2
Endosulfan-Sulfate	2	82.62	0.0010	ND	NLE
gamma -Chlordane	2	82.62	0.0012	ND	NLE
alpha-Chlordane	2	82.62	0.0012	ND	NLE
Toxaphene	2	82.62	0.0007	ND	0.1
Arochlor 1016	2	82.62	0.0275	ND	0.49
Arochlor 1221	2	82.62	0.0506	ND	0.49
Arochlor 1232	2	82.62	0.0344	ND	0.49
Arochlor 1242	2	82.62	0.0393	ND	0.49
Arochlor 1248	2	82.62	0.0157	ND	0.49
Arochlor 1254	2	82.62	0.0098	ND	0.49
Arochlor 1260	2	82.62	0.0088	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-25

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	85.15	0.0007	ND	NLE
beta-BHC	2	85.15	0.0007	ND	NLE
gamma-BHC	2	85.15	0.0009	ND	0.52
delta-BHC	2	85.15	0.0009	ND	NLE
Heptachlor	2	85.15	0.0007	ND	0.15
Aldrin	2	85.15	0.0009	ND	0.04
Heptachlor Epoxide	2	85.15	0.0013	ND	NLE
Endosulfan I	2	85.15	0.0011	ND	NLE
4,4'-DDE	2	85.15	0.0009	0.041	2
Dieldrin	2	85.15	0.0011	ND	0.042
Endrin	2	85.15	0.0011	ND	17
Endosulfan II	2	85.15	0.0009	ND	NLE
4,4'-DDD	2	85.15	0.0013	0.037	3
Endrin Aldehyde	2	85.15	0.0011	ND	NLE
4,4'-DDT	2	85.15	0.0024	0.043	2
Endosulfan-Sulfate	2	85.15	0.0009	ND	NLE
gamma -Chlordane	2	85.15	0.0011	ND	NLE
alpha-Chlordane	2	85.15	0.0011	ND	NLE
Toxaphene	2	85.15	0.0007	ND	0.1
Arochlor 1016	2	85.15	0.0249	ND	0.49
Arochlor 1221	2	85.15	0.0459	ND	0.49
Arochlor 1232	2	85.15	0.0312	ND	0.49
Arochlor 1242	2	85.15	0.0356	ND	0.49
Arochlor 1248	2	85.15	0.0142	ND	0.49
Arochlor 1254	2	85.15	0.0089	ND	0.49
Arochlor 1260	2	85.15	0.0080	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-26

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	82.00	0.0007	ND	NLE
beta-BHC	2	82.00	0.0007	ND	NLE
gamma-BHC	2	82.00	0.0009	ND	0.52
delta-BHC	2	82.00	0.0009	ND	NLE
Heptachlor	2	82.00	0.0007	ND	0.15
Aldrin	2	82.00	0.0009	ND	0.04
Heptachlor Epoxide	2	82.00	0.0013	ND	NLE
Endosulfan I	2	82.00	0.0011	ND	NLE
4,4'-DDE	10	82.00	0.0045	0.171	2
Dieldrin	2	82.00	0.0011	ND	0.042
Endrin	2	82.00	0.0011	ND	17
Endosulfan II	2	82.00	0.0009	ND	NLE
4,4'-DDD	2	82.00	0.0013	0.066	3
Endrin Aldehyde	2	82.00	0.0011	ND	NLE
4,4'-DDT	10	82.00	0.0123	0.309	2
Endosulfan-Sulfate	2	82.00	0.0009	ND	NLE
gamma -Chlordane	2	82.00	0.0011	ND	NLE
alpha-Chlordane	2	82.00	0.0011	ND	NLE
Toxaphene	2	82.00	0.0007	ND	0.1
Arochlor 1016	2	82.00	0.0250	ND	0.49
Arochlor 1221	2	82.00	0.0460	ND	0.49
Arochlor 1232	2	82.00	0.0313	ND	0.49
Arochlor 1242	2	82.00	0.0357	ND	0.49
Arochlor 1248	2	82.00	0.0143	ND	0.49
Arochlor 1254	2	82.00	0.0089	ND	0.49
Arochlor 1260	2	82.00	0.0080	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-27

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.31	0.0007	ND	NLE
beta-BHC	2	84.31	0.0007	ND	NLE
gamma-BHC	2	84.31	0.0010	ND	0.52
delta-BHC	2	84.31	0.0010	ND	NLE
Heptachlor	2	84.31	0.0007	ND	0.15
Aldrin	2	84.31	0.0010	ND	0.04
Heptachlor Epoxide	2	84.31	0.0015	ND	NLE
Endosulfan I	2	84.31	0.0012	ND	NLE
4,4'-DDE	2	84.31	0.0010	0.044	2
Dieldrin	2	84.31	0.0012	ND	0.042
Endrin	2	84.31	0.0012	ND	17
Endosulfan II	2	84.31	0.0010	ND	NLE
4,4'-DDD	2	84.31	0.0015	0.113	3
Endrin Aldehyde	2	84.31	0.0012	ND	NLE
4,4'-DDT	2	84.31	0.0027	0.057	2
Endosulfan-Sulfate	2	84.31	0.0010	ND	NLE
gamma -Chlordane	2	84.31	0.0012	ND	NLE
alpha-Chlordane	2	84.31	0.0012	ND	NLE
Toxaphene	2	84.31	0.0007	ND	0.1
Arochlor 1016	2	84.31	0.0276	ND	0.49
Arochlor 1221	2	84.31	0.0508	ND	0.49
Arochlor 1232	2	84.31	0.0345	ND	0.49
Arochlor 1242	2	84.31	0.0395	ND	0.49
Arochlor 1248	2	84.31	0.0158	ND	0.49
Arochlor 1254	2	84.31	0.0099	ND	0.49
Arochlor 1260	2	84.31	0.0089	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/4/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-28

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	85.85	0.0007	ND	NLE
beta-BHC	2	85.85	0.0007	ND	NLE
gamma-BHC	2	85.85	0.0009	ND	0.52
delta-BHC	2	85.85	0.0009	ND	NLE
Heptachlor	2	85.85	0.0007	ND	0.15
Aldrin	2	85.85	0.0009	ND	0.04
Heptachlor Epoxide	2	85.85	0.0014	ND	NLE
Endosulfan I	2	85.85	0.0012	ND	NLE
4,4'-DDE	2	85.85	0.0009	ND	2
Dieldrin	2	85.85	0.0012	ND	0.042
Endrin	2	85.85	0.0012	ND	17
Endosulfan II	2	85.85	0.0009	ND	NLE
4,4'-DDD	2	85.85	0.0014	ND	3
Endrin Aldehyde	2	85.85	0.0012	ND	NLE
4,4'-DDT	2	85.85	0.0026	ND	2
Endosulfan-Sulfate	2	85.85	0.0009	ND	NLE
gamma -Chlordane	2	85.85	0.0012	ND	NLE
alpha-Chlordane	2	85.85	0.0012	ND	NLE
Toxaphene	2	85.85	0.0007	ND	0.1
Arochlor 1016	2	85.85	0.0260	ND	0.49
Arochlor 1221	2	85.85	0.0479	ND	0.49
Arochlor 1232	2	85.85	0.0325	ND	0.49
Arochlor 1242	2	85.85	0.0372	ND	0.49
Arochlor 1248	2	85.85	0.0149	ND	0.49
Arochlor 1254	2	85.85	0.0093	ND	0.49
Arochlor 1260	2	85.85	0.0084	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-29

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	81.88	0.0007	ND	NLE
beta-BHC	2	81.88	0.0007	ND	NLE
gamma-BHC	2	81.88	0.0009	ND	0.52
delta-BHC	2	81.88	0.0009	ND	NLE
Heptachlor	2	81.88	0.0007	ND	0.15
Aldrin	2	81.88	0.0009	ND	0.04
Heptachlor Epoxide	2	81.88	0.0014	ND	NLE
Endosulfan I	2	81.88	0.0011	ND	NLE
4,4'-DDE	2	81.88	0.0009	ND	2
Dieldrin	2	81.88	0.0011	ND	0.042
Endrin	2	81.88	0.0011	ND	17
Endosulfan II	2	81.88	0.0009	ND	NLE
4,4'-DDD	2	81.88	0.0014	ND	3
Endrin Aldehyde	2	81.88	0.0011	ND	NLE
4,4'-DDT	2	81.88	0.0025	ND	2
Endosulfan-Sulfate	2	81.88	0.0009	ND	NLE
gamma -Chlordane	2	81.88	0.0011	ND	NLE
alpha-Chlordane	2	81.88	0.0011	ND	NLE
Toxaphene	2	81.88	0.0007	ND	0.1
Arochlor 1016	2	81.88	0.0258	ND	0.49
Arochlor 1221	2	81.88	0.0474	ND	0.49
Arochlor 1232	2	81.88	0.0322	ND	0.49
Arochlor 1242	2	81.88	0.0368	ND	0.49
Arochlor 1248	2	81.88	0.0147	ND	0.49
Arochlor 1254	2	81.88	0.0092	ND	0.49
Arochlor 1260	2	81.88	0.0083	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3425.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/23/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/2/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-30

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	87.02	0.0007	ND	NLE
beta-BHC	2	87.02	0.0007	ND	NLE
gamma-BHC	2	87.02	0.0009	ND	0.52
delta-BHC	2	87.02	0.0009	ND	NLE
Heptachlor	2	87.02	0.0007	ND	0.15
Aldrin	2	87.02	0.0009	ND	0.04
Heptachlor Epoxide	2	87.02	0.0014	ND	NLE
Endosulfan I	2	87.02	0.0011	ND	NLE
4,4'-DDE	10	87.02	0.0045	0.273	2
Dieldrin	2	87.02	0.0011	ND	0.042
Endrin	2	87.02	0.0011	ND	17
Endosulfan II	2	87.02	0.0009	ND	NLE
4,4'-DDD	2	87.02	0.0014	0.051	3
Endrin Aldehyde	2	87.02	0.0011	ND	NLE
4,4'-DDT	10	87.02	0.0124	0.231	2
Endosulfan-Sulfate	2	87.02	0.0009	ND	NLE
gamma -Chlordane	2	87.02	0.0011	ND	NLE
alpha-Chlordane	2	87.02	0.0011	ND	NLE
Toxaphene	2	87.02	0.0007	ND	0.1
Arochlor 1016	2	87.02	0.0253	ND	0.49
Arochlor 1221	2	87.02	0.0466	ND	0.49
Arochlor 1232	2	87.02	0.0317	ND	0.49
Arochlor 1242	2	87.02	0.0362	ND	0.49
Arochlor 1248	2	87.02	0.0145	ND	0.49
Arochlor 1254	2	87.02	0.0090	ND	0.49
Arochlor 1260	2	87.02	0.0081	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-31

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	5	83.78	0.0018	ND	NLE
beta-BHC	5	83.78	0.0018	ND	NLE
gamma-BHC	5	83.78	0.0024	ND	0.52
delta-BHC	5	83.78	0.0024	ND	NLE
Heptachlor	5	83.78	0.0018	ND	0.15
Aldrin	5	83.78	0.0024	ND	0.04
Heptachlor Epoxide	5	83.78	0.0036	ND	NLE
Endosulfan I	5	83.78	0.0030	ND	NLE
4,4'-DDE	5	83.78	0.0024	0.136	2
Dieldrin	5	83.78	0.0030	ND	0.042
Endrin	5	83.78	0.0030	ND	17
Endosulfan II	5	83.78	0.0024	ND	NLE
4,4'-DDD	5	83.78	0.0036	0.039	3
Endrin Aldehyde	5	83.78	0.0030	ND	NLE
4,4'-DDT	5	83.78	0.0067	0.208	2
Endosulfan-Sulfate	5	83.78	0.0024	ND	NLE
gamma -Chlordane	5	83.78	0.0030	ND	NLE
alpha-Chlordane	5	83.78	0.0030	ND	NLE
Toxaphene	5	83.78	0.0018	ND	0.1
Arochlor 1016	5	83.78	0.0679	ND	0.49
Arochlor 1221	5	83.78	0.1248	ND	0.49
Arochlor 1232	5	83.78	0.0848	ND	0.49
Arochlor 1242	5	83.78	0.0969	ND	0.49
Arochlor 1248	5	83.78	0.0388	ND	0.49
Arochlor 1254	5	83.78	0.0242	ND	0.49
Arochlor 1260	5	83.78	0.0218	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-32

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	5	79.28	0.0016	ND	NLE
beta-BHC	5	79.28	0.0016	ND	NLE
gamma-BHC	5	79.28	0.0022	ND	0.52
delta-BHC	5	79.28	0.0022	ND	NLE
Heptachlor	5	79.28	0.0016	ND	0.15
Aldrin	5	79.28	0.0022	ND	0.04
Heptachlor Epoxide	5	79.28	0.0033	ND	NLE
Endosulfan I	5	79.28	0.0027	ND	NLE
4,4'-DDE	5	79.28	0.0022	0.107	2
Dieldrin	5	79.28	0.0027	ND	0.042
Endrin	5	79.28	0.0027	ND	17
Endosulfan II	5	79.28	0.0022	ND	NLE
4,4'-DDD	5	79.28	0.0033	0.019	3
Endrin Aldehyde	5	79.28	0.0027	ND	NLE
4,4'-DDT	5	79.28	0.0060	0.188	2
Endosulfan-Sulfate	5	79.28	0.0022	ND	NLE
gamma -Chlordane	5	79.28	0.0027	ND	NLE
alpha-Chlordane	5	79.28	0.0027	ND	NLE
Toxaphene	5	79.28	0.0016	ND	0.1
Arochlor 1016	5	79.28	0.0612	ND	0.49
Arochlor 1221	5	79.28	0.1126	ND	0.49
Arochlor 1232	5	79.28	0.0765	ND	0.49
Arochlor 1242	5	79.28	0.0874	ND	0.49
Arochlor 1248	5	79.28	0.0350	ND	0.49
Arochlor 1254	5	79.28	0.0219	ND	0.49
Arochlor 1260	5	79.28	0.0197	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-33

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	10	82.01	0.0036	ND	NLE
beta-BHC	10	82.01	0.0036	ND	NLE
gamma-BHC	10	82.01	0.0048	ND	0.52
delta-BHC	10	82.01	0.0048	ND	NLE
Heptachlor	10	82.01	0.0036	ND	0.15
Aldrin	10	82.01	0.0048	ND	0.04
Heptachlor Epoxide	10	82.01	0.0072	ND	NLE
Endosulfan I	10	82.01	0.0060	ND	NLE
4,4'-DDE	10	82.01	0.0048	0.141	2
Dieldrin	10	82.01	0.0060	ND	0.042
Endrin	10	82.01	0.0060	ND	17
Endosulfan II	10	82.01	0.0048	ND	NLE
4,4'-DDD	10	82.01	0.0072	0.030	3
Endrin Aldehyde	10	82.01	0.0060	ND	NLE
4,4'-DDT	10	82.01	0.0131	0.146	2
Endosulfan-Sulfate	10	82.01	0.0048	ND	NLE
gamma -Chlordane	10	82.01	0.0060	ND	NLE
alpha-Chlordane	10	82.01	0.0060	ND	NLE
Toxaphene	10	82.01	0.0036	ND	0.1
Arochlor 1016	10	82.01	0.1335	ND	0.49
Arochlor 1221	10	82.01	0.2455	ND	0.49
Arochlor 1232	10	82.01	0.1669	ND	0.49
Arochlor 1242	10	82.01	0.1907	ND	0.49
Arochlor 1248	10	82.01	0.0763	ND	0.49
Arochlor 1254	10	82.01	0.0477	ND	0.49
Arochlor 1260	10	82.01	0.0429	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-34

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	82.00	0.0007	ND	NLE
beta-BHC	2	82.00	0.0007	ND	NLE
gamma-BHC	2	82.00	0.0010	ND	0.52
delta-BHC	2	82.00	0.0010	ND	NLE
Heptachlor	2	82.00	0.0007	ND	0.15
Aldrin	2	82.00	0.0010	ND	0.04
Heptachlor Epoxide	2	82.00	0.0014	ND	NLE
Endosulfan I	2	82.00	0.0012	ND	NLE
4,4'-DDE	2	82.00	0.0010	0.066	2
Dieldrin	2	82.00	0.0012	ND	0.042
Endrin	2	82.00	0.0012	ND	17
Endosulfan II	2	82.00	0.0010	ND	NLE
4,4'-DDD	2	82.00	0.0014	0.026	3
Endrin Aldehyde	2	82.00	0.0012	ND	NLE
4,4'-DDT	2	82.00	0.0026	0.122	2
Endosulfan-Sulfate	2	82.00	0.0010	ND	NLE
gamma -Chlordane	2	82.00	0.0012	ND	NLE
alpha-Chlordane	2	82.00	0.0012	ND	NLE
Toxaphene	2	82.00	0.0007	ND	0.1
Arochlor 1016	2	82.00	0.0267	ND	0.49
Arochlor 1221	2	82.00	0.0491	ND	0.49
Arochlor 1232	2	82.00	0.0333	ND	0.49
Arochlor 1242	2	82.00	0.0381	ND	0.49
Arochlor 1248	2	82.00	0.0152	ND	0.49
Arochlor 1254	2	82.00	0.0095	ND	0.49
Arochlor 1260	2	82.00	0.0086	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-35

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.12	0.0008	ND	NLE
beta-BHC	2	84.12	0.0008	ND	NLE
gamma-BHC	2	84.12	0.0010	ND	0.52
delta-BHC	2	84.12	0.0010	ND	NLE
Heptachlor	2	84.12	0.0008	ND	0.15
Aldrin	2	84.12	0.0010	ND	0.04
Heptachlor Epoxide	2	84.12	0.0015	ND	NLE
Endosulfan I	2	84.12	0.0013	ND	NLE
4,4'-DDE	2	84.12	0.0010	0.166	2
Dieldrin	2	84.12	0.0013	ND	0.042
Endrin	2	84.12	0.0013	ND	17
Endosulfan II	2	84.12	0.0010	ND	NLE
4,4'-DDD	2	84.12	0.0015	0.076	3
Endrin Aldehyde	2	84.12	0.0013	ND	NLE
4,4'-DDT	2	84.12	0.0028	0.299	2
Endosulfan-Sulfate	2	84.12	0.0010	ND	NLE
gamma -Chlordane	2	84.12	0.0013	ND	NLE
alpha-Chlordane	2	84.12	0.0013	ND	NLE
Toxaphene	2	84.12	0.0008	ND	0.1
Arochlor 1016	2	84.12	0.0285	ND	0.49
Arochlor 1221	2	84.12	0.0524	ND	0.49
Arochlor 1232	2	84.12	0.0356	ND	0.49
Arochlor 1242	2	84.12	0.0407	ND	0.49
Arochlor 1248	2	84.12	0.0163	ND	0.49
Arochlor 1254	2	84.12	0.0102	ND	0.49
Arochlor 1260	2	84.12	0.0092	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-36

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	92.97	0.0006	ND	NLE
beta-BHC	2	92.97	0.0006	ND	NLE
gamma-BHC	2	92.97	0.0008	ND	0.52
delta-BHC	2	92.97	0.0008	ND	NLE
Heptachlor	2	92.97	0.0006	ND	0.15
Aldrin	2	92.97	0.0008	ND	0.04
Heptachlor Epoxide	2	92.97	0.0012	ND	NLE
Endosulfan I	2	92.97	0.0010	ND	NLE
4,4'-DDE	2	92.97	0.0008	0.059	2
Dieldrin	2	92.97	0.0010	ND	0.042
Endrin	2	92.97	0.0010	ND	17
Endosulfan II	2	92.97	0.0008	ND	NLE
4,4'-DDD	2	92.97	0.0012	0.005	3
Endrin Aldehyde	2	92.97	0.0010	ND	NLE
4,4'-DDT	2	92.97	0.0022	0.063	2
Endosulfan-Sulfate	2	92.97	0.0008	ND	NLE
gamma -Chlordane	2	92.97	0.0010	ND	NLE
alpha-Chlordane	2	92.97	0.0010	ND	NLE
Toxaphene	2	92.97	0.0006	ND	0.1
Arochlor 1016	2	92.97	0.0228	ND	0.49
Arochlor 1221	2	92.97	0.0419	ND	0.49
Arochlor 1232	2	92.97	0.0285	ND	0.49
Arochlor 1242	2	92.97	0.0325	ND	0.49
Arochlor 1248	2	92.97	0.0130	ND	0.49
Arochlor 1254	2	92.97	0.0081	ND	0.49
Arochlor 1260	2	92.97	0.0073	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-37

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	74.71	0.0008	ND	NLE
beta-BHC	2	74.71	0.0008	ND	NLE
gamma-BHC	2	74.71	0.0010	ND	0.52
delta-BHC	2	74.71	0.0010	ND	NLE
Heptachlor	2	74.71	0.0008	ND	0.15
Aldrin	2	74.71	0.0010	ND	0.04
Heptachlor Epoxide	2	74.71	0.0015	ND	NLE
Endosulfan I	2	74.71	0.0013	ND	NLE
4,4'-DDE	2	74.71	0.0010	0.014	2
Dieldrin	2	74.71	0.0013	ND	0.042
Endrin	2	74.71	0.0013	ND	17
Endosulfan II	2	74.71	0.0010	ND	NLE
4,4'-DDD	2	74.71	0.0015	ND	3
Endrin Aldehyde	2	74.71	0.0013	ND	NLE
4,4'-DDT	2	74.71	0.0028	0.008	2
Endosulfan-Sulfate	2	74.71	0.0010	ND	NLE
gamma -Chlordane	2	74.71	0.0013	ND	NLE
alpha-Chlordane	2	74.71	0.0013	ND	NLE
Toxaphene	2	74.71	0.0008	ND	0.1
Arochlor 1016	2	74.71	0.0285	ND	0.49
Arochlor 1221	2	74.71	0.0524	ND	0.49
Arochlor 1232	2	74.71	0.0356	ND	0.49
Arochlor 1242	2	74.71	0.0407	ND	0.49
Arochlor 1248	2	74.71	0.0163	ND	0.49
Arochlor 1254	2	74.71	0.0102	ND	0.49
Arochlor 1260	2	74.71	0.0092	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-38

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	10	82.81	0.0035	ND	NLE
beta-BHC	10	82.81	0.0035	ND	NLE
gamma-BHC	10	82.81	0.0047	ND	0.52
delta-BHC	10	82.81	0.0047	ND	NLE
Heptachlor	10	82.81	0.0035	ND	0.15
Aldrin	10	82.81	0.0047	ND	0.04
Heptachlor Epoxide	10	82.81	0.0070	ND	NLE
Endosulfan I	10	82.81	0.0058	ND	NLE
4,4'-DDE	10	82.81	0.0047	0.164	2
Dieldrin	10	82.81	0.0058	ND	0.042
Endrin	10	82.81	0.0058	ND	17
Endosulfan II	10	82.81	0.0047	ND	NLE
4,4'-DDD	10	82.81	0.0070	0.069	3
Endrin Aldehyde	10	82.81	0.0058	ND	NLE
4,4'-DDT	10	82.81	0.0128	0.250	2
Endosulfan-Sulfate	10	82.81	0.0047	ND	NLE
gamma -Chlordane	10	82.81	0.0058	ND	NLE
alpha-Chlordane	10	82.81	0.0058	ND	NLE
Toxaphene	10	82.81	0.0035	ND	0.1
Arochlor 1016	10	82.81	0.1308	ND	0.49
Arochlor 1221	10	82.81	0.2406	ND	0.49
Arochlor 1232	10	82.81	0.1635	ND	0.49
Arochlor 1242	10	82.81	0.1869	ND	0.49
Arochlor 1248	10	82.81	0.0747	ND	0.49
Arochlor 1254	10	82.81	0.0467	ND	0.49
Arochlor 1260	10	82.81	0.0420	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-39

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	85.66	0.0007	ND	NLE
beta-BHC	2	85.66	0.0007	ND	NLE
gamma-BHC	2	85.66	0.0009	ND	0.52
delta-BHC	2	85.66	0.0009	ND	NLE
Heptachlor	2	85.66	0.0007	ND	0.15
Aldrin	2	85.66	0.0009	ND	0.04
Heptachlor Epoxide	2	85.66	0.0014	ND	NLE
Endosulfan I	2	85.66	0.0011	ND	NLE
4,4'-DDE	2	85.66	0.0009	0.044	2
Dieldrin	2	85.66	0.0011	ND	0.042
Endrin	2	85.66	0.0011	ND	17
Endosulfan II	2	85.66	0.0009	ND	NLE
4,4'-DDD	2	85.66	0.0014	0.009	3
Endrin Aldehyde	2	85.66	0.0011	ND	NLE
4,4'-DDT	2	85.66	0.0025	0.117	2
Endosulfan-Sulfate	2	85.66	0.0009	ND	NLE
gamma -Chlordane	2	85.66	0.0011	ND	NLE
alpha-Chlordane	2	85.66	0.0011	ND	NLE
Toxaphene	2	85.66	0.0007	ND	0.1
Arochlor 1016	2	85.66	0.0255	ND	0.49
Arochlor 1221	2	85.66	0.0469	ND	0.49
Arochlor 1232	2	85.66	0.0319	ND	0.49
Arochlor 1242	2	85.66	0.0364	ND	0.49
Arochlor 1248	2	85.66	0.0146	ND	0.49
Arochlor 1254	2	85.66	0.0091	ND	0.49
Arochlor 1260	2	85.66	0.0082	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/15/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-40

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	5	84.46	0.0018	ND	NLE
beta-BHC	5	84.46	0.0018	ND	NLE
gamma-BHC	5	84.46	0.0024	ND	0.52
delta-BHC	5	84.46	0.0024	ND	NLE
Heptachlor	5	84.46	0.0018	ND	0.15
Aldrin	5	84.46	0.0024	ND	0.04
Heptachlor Epoxide	5	84.46	0.0035	ND	NLE
Endosulfan I	5	84.46	0.0029	ND	NLE
4,4'-DDE	5	84.46	0.0024	0.211	2
Dieldrin	5	84.46	0.0029	ND	0.042
Endrin	5	84.46	0.0029	ND	17
Endosulfan II	5	84.46	0.0024	ND	NLE
4,4'-DDD	5	84.46	0.0035	0.142	3
Endrin Aldehyde	5	84.46	0.0029	ND	NLE
4,4'-DDT	5	84.46	0.0065	0.112	2
Endosulfan-Sulfate	5	84.46	0.0024	ND	NLE
gamma -Chlordane	5	84.46	0.0029	ND	NLE
alpha-Chlordane	5	84.46	0.0029	ND	NLE
Toxaphene	5	84.46	0.0018	ND	0.1
Arochlor 1016	5	84.46	0.0660	ND	0.49
Arochlor 1221	5	84.46	0.1213	ND	0.49
Arochlor 1232	5	84.46	0.0825	ND	0.49
Arochlor 1242	5	84.46	0.0942	ND	0.49
Arochlor 1248	5	84.46	0.0377	ND	0.49
Arochlor 1254	5	84.46	0.0236	ND	0.49
Arochlor 1260	5	84.46	0.0212	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3428.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/24/98
	Bldg. 173	**Extraction Date:**	3/25/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/4/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-41

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.73	0.0007	ND	NLE
beta-BHC	2	84.73	0.0007	ND	NLE
gamma-BHC	2	84.73	0.0009	ND	0.52
delta-BHC	2	84.73	0.0009	ND	NLE
Heptachlor	2	84.73	0.0007	ND	0.15
Aldrin	2	84.73	0.0009	ND	0.04
Heptachlor Epoxide	2	84.73	0.0014	ND	NLE
Endosulfan I	2	84.73	0.0012	ND	NLE
4,4'-DDE	10	84.73	0.0047	0.456	2
Dieldrin	2	84.73	0.0012	ND	0.042
Endrin	2	84.73	0.0012	ND	17
Endosulfan II	2	84.73	0.0009	ND	NLE
4,4'-DDD	10	84.73	0.0070	0.133	3
Endrin Aldehyde	2	84.73	0.0012	ND	NLE
4,4'-DDT	10	84.73	0.0128	0.176	2
Endosulfan-Sulfate	2	84.73	0.0009	ND	NLE
gamma -Chlordane	2	84.73	0.0012	ND	NLE
alpha-Chlordane	2	84.73	0.0012	ND	NLE
Toxaphene	2	84.73	0.0007	ND	0.1
Arochlor 1016	2	84.73	0.0260	ND	0.49
Arochlor 1221	2	84.73	0.0479	ND	0.49
Arochlor 1232	2	84.73	0.0326	ND	0.49
Arochlor 1242	2	84.73	0.0372	ND	0.49
Arochlor 1248	2	84.73	0.0149	ND	0.49
Arochlor 1254	2	84.73	0.0093	ND	0.49
Arochlor 1260	2	84.73	0.0084	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/26/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/5/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-42

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	85.17	0.0007	ND	NLE
beta-BHC	2	85.17	0.0007	ND	NLE
gamma-BHC	2	85.17	0.0009	ND	0.52
delta-BHC	2	85.17	0.0009	ND	NLE
Heptachlor	2	85.17	0.0007	ND	0.15
Aldrin	2	85.17	0.0009	ND	0.04
Heptachlor Epoxide	2	85.17	0.0014	ND	NLE
Endosulfan I	2	85.17	0.0011	ND	NLE
4,4'-DDE	10	85.17	0.0046	0.111	2
Dieldrin	2	85.17	0.0011	ND	0.042
Endrin	2	85.17	0.0011	ND	17
Endosulfan II	2	85.17	0.0009	ND	NLE
4,4'-DDD	2	85.17	0.0014	0.050	3
Endrin Aldehyde	2	85.17	0.0011	ND	NLE
4,4'-DDT	10	85.17	0.0126	0.176	2
Endosulfan-Sulfate	2	85.17	0.0009	ND	NLE
gamma -Chlordane	2	85.17	0.0011	ND	NLE
alpha-Chlordane	2	85.17	0.0011	ND	NLE
Toxaphene	2	85.17	0.0007	ND	0.1
Arochlor 1016	2	85.17	0.0256	ND	0.49
Arochlor 1221	2	85.17	0.0470	ND	0.49
Arochlor 1232	2	85.17	0.0319	ND	0.49
Arochlor 1242	2	85.17	0.0365	ND	0.49
Arochlor 1248	2	85.17	0.0146	ND	0.49
Arochlor 1254	2	85.17	0.0091	ND	0.49
Arochlor 1260	2	85.17	0.0082	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/26/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/5/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-43

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	83.98	0.0007	ND	NLE
beta-BHC	2	83.98	0.0007	ND	NLE
gamma-BHC	2	83.98	0.0009	ND	0.52
delta-BHC	2	83.98	0.0009	ND	NLE
Heptachlor	2	83.98	0.0007	ND	0.15
Aldrin	2	83.98	0.0009	ND	0.04
Heptachlor Epoxide	2	83.98	0.0014	ND	NLE
Endosulfan I	2	83.98	0.0012	ND	NLE
4,4'-DDE	20	83.98	0.0095	0.098	2
Dieldrin	2	83.98	0.0012	ND	0.042
Endrin	2	83.98	0.0012	ND	17
Endosulfan II	2	83.98	0.0009	ND	NLE
4,4'-DDD	2	83.98	0.0014	0.059	3
Endrin Aldehyde	2	83.98	0.0012	ND	NLE
4,4'-DDT	20	83.98	0.0260	0.312	2
Endosulfan-Sulfate	2	83.98	0.0009	ND	NLE
gamma -Chlordane	2	83.98	0.0012	ND	NLE
alpha-Chlordane	2	83.98	0.0012	ND	NLE
Toxaphene	2	83.98	0.0007	ND	0.1
Arochlor 1016	2	83.98	0.0265	ND	0.49
Arochlor 1221	2	83.98	0.0487	ND	0.49
Arochlor 1232	2	83.98	0.0331	ND	0.49
Arochlor 1242	2	83.98	0.0378	ND	0.49
Arochlor 1248	2	83.98	0.0151	ND	0.49
Arochlor 1254	2	83.98	0.0095	ND	0.49
Arochlor 1260	2	83.98	0.0085	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-44

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.51	0.0006	ND	NLE
beta-BHC	2	84.51	0.0006	ND	NLE
gamma-BHC	2	84.51	0.0009	ND	0.52
delta-BHC	2	84.51	0.0009	ND	NLE
Heptachlor	2	84.51	0.0006	ND	0.15
Aldrin	2	84.51	0.0009	ND	0.04
Heptachlor Epoxide	2	84.51	0.0013	ND	NLE
Endosulfan I	2	84.51	0.0011	ND	NLE
4,4'-DDE	10	84.51	0.0043	0.186	2
Dieldrin	2	84.51	0.0011	ND	0.042
Endrin	2	84.51	0.0011	ND	17
Endosulfan II	2	84.51	0.0009	ND	NLE
4,4'-DDD	10	84.51	0.0064	0.022	3
Endrin Aldehyde	2	84.51	0.0011	ND	NLE
4,4'-DDT	10	84.51	0.0117	0.225	2
Endosulfan-Sulfate	2	84.51	0.0009	ND	NLE
gamma -Chlordane	2	84.51	0.0011	ND	NLE
alpha-Chlordane	2	84.51	0.0011	ND	NLE
Toxaphene	2	84.51	0.0006	ND	0.1
Arochlor 1016	2	84.51	0.0238	ND	0.49
Arochlor 1221	2	84.51	0.0438	ND	0.49
Arochlor 1232	2	84.51	0.0298	ND	0.49
Arochlor 1242	2	84.51	0.0340	ND	0.49
Arochlor 1248	2	84.51	0.0136	ND	0.49
Arochlor 1254	2	84.51	0.0085	ND	0.49
Arochlor 1260	2	84.51	0.0077	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-45

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	81.41	0.0007	ND	NLE
beta-BHC	2	81.41	0.0007	ND	NLE
gamma-BHC	2	81.41	0.0009	ND	0.52
delta-BHC	2	81.41	0.0009	ND	NLE
Heptachlor	2	81.41	0.0007	ND	0.15
Aldrin	2	81.41	0.0009	ND	0.04
Heptachlor Epoxide	2	81.41	0.0014	ND	NLE
Endosulfan I	2	81.41	0.0012	ND	NLE
4,4'-DDE	10	81.41	0.0046	0.275	2
Dieldrin	2	81.41	0.0012	ND	0.042
Endrin	2	81.41	0.0012	ND	17
Endosulfan II	2	81.41	0.0009	ND	NLE
4,4'-DDD	2	81.41	0.0014	0.041	3
Endrin Aldehyde	2	81.41	0.0012	ND	NLE
4,4'-DDT	10	81.41	0.0127	0.467	2
Endosulfan-Sulfate	2	81.41	0.0009	ND	NLE
gamma -Chlordane	2	81.41	0.0012	ND	NLE
alpha-Chlordane	2	81.41	0.0012	ND	NLE
Toxaphene	2	81.41	0.0007	ND	0.1
Arochlor 1016	2	81.41	0.0258	ND	0.49
Arochlor 1221	2	81.41	0.0474	ND	0.49
Arochlor 1232	2	81.41	0.0322	ND	0.49
Arochlor 1242	2	81.41	0.0368	ND	0.49
Arochlor 1248	2	81.41	0.0147	ND	0.49
Arochlor 1254	2	81.41	0.0092	ND	0.49
Arochlor 1260	2	81.41	0.0083	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-46

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.82	0.0007	ND	NLE
beta-BHC	2	84.82	0.0007	ND	NLE
gamma-BHC	2	84.82	0.0009	ND	0.52
delta-BHC	2	84.82	0.0009	ND	NLE
Heptachlor	2	84.82	0.0007	ND	0.15
Aldrin	2	84.82	0.0009	ND	0.04
Heptachlor Epoxide	2	84.82	0.0014	ND	NLE
Endosulfan I	2	84.82	0.0011	ND	NLE
4,4'-DDE	10	84.82	0.0045	0.090	2
Dieldrin	2	84.82	0.0011	ND	0.042
Endrin	2	84.82	0.0011	ND	17
Endosulfan II	2	84.82	0.0009	ND	NLE
4,4'-DDD	2	84.82	0.0014	0.035	3
Endrin Aldehyde	2	84.82	0.0011	ND	NLE
4,4'-DDT	10	84.82	0.0124	0.180	2
Endosulfan-Sulfate	2	84.82	0.0009	ND	NLE
gamma -Chlordane	2	84.82	0.0011	ND	NLE
alpha-Chlordane	2	84.82	0.0011	ND	NLE
Toxaphene	2	84.82	0.0007	ND	0.1
Arochlor 1016	2	84.82	0.0253	ND	0.49
Arochlor 1221	2	84.82	0.0465	ND	0.49
Arochlor 1232	2	84.82	0.0316	ND	0.49
Arochlor 1242	2	84.82	0.0361	ND	0.49
Arochlor 1248	2	84.82	0.0145	ND	0.49
Arochlor 1254	2	84.82	0.0090	ND	0.49
Arochlor 1260	2	84.82	0.0081	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-47

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	85.98	0.0006	ND	NLE
beta-BHC	2	85.98	0.0006	ND	NLE
gamma-BHC	2	85.98	0.0009	ND	0.52
delta-BHC	2	85.98	0.0009	ND	NLE
Heptachlor	2	85.98	0.0006	ND	0.15
Aldrin	2	85.98	0.0009	ND	0.04
Heptachlor Epoxide	2	85.98	0.0013	ND	NLE
Endosulfan I	2	85.98	0.0011	ND	NLE
4,4'-DDE	10	85.98	0.0043	0.128	2
Dieldrin	2	85.98	0.0011	ND	0.042
Endrin	2	85.98	0.0011	ND	17
Endosulfan II	2	85.98	0.0009	ND	NLE
4,4'-DDD	2	85.98	0.0013	0.033	3
Endrin Aldehyde	2	85.98	0.0011	ND	NLE
4,4'-DDT	10	85.98	0.0118	0.138	2
Endosulfan-Sulfate	2	85.98	0.0009	ND	NLE
gamma -Chlordane	2	85.98	0.0011	ND	NLE
alpha-Chlordane	2	85.98	0.0011	ND	NLE
Toxaphene	2	85.98	0.0006	ND	0.1
Arochlor 1016	2	85.98	0.0241	ND	0.49
Arochlor 1221	2	85.98	0.0443	ND	0.49
Arochlor 1232	2	85.98	0.0301	ND	0.49
Arochlor 1242	2	85.98	0.0344	ND	0.49
Arochlor 1248	2	85.98	0.0138	ND	0.49
Arochlor 1254	2	85.98	0.0086	ND	0.49
Arochlor 1260	2	85.98	0.0077	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-48

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	88.82	0.0007	ND	NLE
beta-BHC	2	88.82	0.0007	ND	NLE
gamma-BHC	2	88.82	0.0009	ND	0.52
delta-BHC	2	88.82	0.0009	ND	NLE
Heptachlor	2	88.82	0.0007	ND	0.15
Aldrin	2	88.82	0.0009	ND	0.04
Heptachlor Epoxide	2	88.82	0.0013	ND	NLE
Endosulfan I	2	88.82	0.0011	ND	NLE
4,4'-DDE	10	88.82	0.0044	0.086	2
Dieldrin	2	88.82	0.0011	ND	0.042
Endrin	2	88.82	0.0011	ND	17
Endosulfan II	2	88.82	0.0009	ND	NLE
4,4'-DDD	2	88.82	0.0013	0.035	3
Endrin Aldehyde	2	88.82	0.0011	ND	NLE
4,4'-DDT	10	88.82	0.0122	0.270	2
Endosulfan-Sulfate	2	88.82	0.0009	ND	NLE
gamma -Chlordane	2	88.82	0.0011	ND	NLE
alpha-Chlordane	2	88.82	0.0011	ND	NLE
Toxaphene	2	88.82	0.0007	ND	0.1
Arochlor 1016	2	88.82	0.0249	ND	0.49
Arochlor 1221	2	88.82	0.0458	ND	0.49
Arochlor 1232	2	88.82	0.0311	ND	0.49
Arochlor 1242	2	88.82	0.0356	ND	0.49
Arochlor 1248	2	88.82	0.0142	ND	0.49
Arochlor 1254	2	88.82	0.0089	ND	0.49
Arochlor 1260	2	88.82	0.0080	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-49

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	84.14	0.0006	ND	NLE
beta-BHC	2	84.14	0.0006	ND	NLE
gamma-BHC	2	84.14	0.0009	ND	0.52
delta-BHC	2	84.14	0.0009	ND	NLE
Heptachlor	2	84.14	0.0006	ND	0.15
Aldrin	2	84.14	0.0009	ND	0.04
Heptachlor Epoxide	2	84.14	0.0013	ND	NLE
Endosulfan I	2	84.14	0.0011	ND	NLE
4,4'-DDE	10	84.14	0.0043	0.140	2
Dieldrin	2	84.14	0.0011	ND	0.042
Endrin	2	84.14	0.0011	ND	17
Endosulfan II	2	84.14	0.0009	ND	NLE
4,4'-DDD	10	84.14	0.0065	0.073	3
Endrin Aldehyde	2	84.14	0.0011	ND	NLE
4,4'-DDT	50	84.14	0.0592	0.461	2
Endosulfan-Sulfate	2	84.14	0.0009	ND	NLE
gamma -Chlordane	2	84.14	0.0011	ND	NLE
alpha-Chlordane	2	84.14	0.0011	ND	NLE
Toxaphene	2	84.14	0.0006	ND	0.1
Arochlor 1016	2	84.14	0.0241	ND	0.49
Arochlor 1221	2	84.14	0.0443	ND	0.49
Arochlor 1232	2	84.14	0.0301	ND	0.49
Arochlor 1242	2	84.14	0.0344	ND	0.49
Arochlor 1248	2	84.14	0.0138	ND	0.49
Arochlor 1254	2	84.14	0.0086	ND	0.49
Arochlor 1260	2	84.14	0.0077	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-50

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	82.51	0.0007	ND	NLE
beta-BHC	2	82.51	0.0007	ND	NLE
gamma-BHC	2	82.51	0.0010	ND	0.52
delta-BHC	2	82.51	0.0010	ND	NLE
Heptachlor	2	82.51	0.0007	ND	0.15
Aldrin	2	82.51	0.0010	ND	0.04
Heptachlor Epoxide	2	82.51	0.0015	ND	NLE
Endosulfan I	2	82.51	0.0012	ND	NLE
4,4'-DDE	20	82.51	0.0097	0.234	2
Dieldrin	2	82.51	0.0012	ND	0.042
Endrin	2	82.51	0.0012	ND	17
Endosulfan II	2	82.51	0.0010	ND	NLE
4,4'-DDD	20	82.51	0.0146	0.089	3
Endrin Aldehyde	2	82.51	0.0012	ND	NLE
4,4'-DDT	20	82.51	0.0268	0.485	2
Endosulfan-Sulfate	2	82.51	0.0010	ND	NLE
gamma -Chlordane	2	82.51	0.0012	ND	NLE
alpha-Chlordane	2	82.51	0.0012	ND	NLE
Toxaphene	2	82.51	0.0007	ND	0.1
Arochlor 1016	2	82.51	0.0273	ND	0.49
Arochlor 1221	2	82.51	0.0502	ND	0.49
Arochlor 1232	2	82.51	0.0341	ND	0.49
Arochlor 1242	2	82.51	0.0390	ND	0.49
Arochlor 1248	2	82.51	0.0156	ND	0.49
Arochlor 1254	2	82.51	0.0097	ND	0.49
Arochlor 1260	2	82.51	0.0088	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3432.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	3/25/98
	Bldg. 173	**Extraction Date:**	3/27/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5/6/98
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	B-51

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	2	87.40	0.0007	ND	NLE
beta-BHC	2	87.40	0.0007	ND	NLE
gamma-BHC	2	87.40	0.0009	ND	0.52
delta-BHC	2	87.40	0.0009	ND	NLE
Heptachlor	2	87.40	0.0007	ND	0.15
Aldrin	2	87.40	0.0009	ND	0.04
Heptachlor Epoxide	2	87.40	0.0013	ND	NLE
Endosulfan I	2	87.40	0.0011	ND	NLE
4,4'-DDE	2	87.40	0.0009	0.044	2
Dieldrin	2	87.40	0.0011	ND	0.042
Endrin	2	87.40	0.0011	ND	17
Endosulfan II	2	87.40	0.0009	ND	NLE
4,4'-DDD	2	87.40	0.0013	0.008	3
Endrin Aldehyde	2	87.40	0.0011	ND	NLE
4,4'-DDT	2	87.40	0.0025	0.055	2
Endosulfan-Sulfate	2	87.40	0.0009	ND	NLE
gamma -Chlordane	2	87.40	0.0011	ND	NLE
alpha-Chlordane	2	87.40	0.0011	ND	NLE
Toxaphene	2	87.40	0.0007	ND	0.1
Arochlor 1016	2	87.40	0.0252	ND	0.49
Arochlor 1221	2	87.40	0.0463	ND	0.49
Arochlor 1232	2	87.40	0.0315	ND	0.49
Arochlor 1242	2	87.40	0.0360	ND	0.49
Arochlor 1248	2	87.40	0.0144	ND	0.49
Arochlor 1254	2	87.40	0.0090	ND	0.49
Arochlor 1260	2	87.40	0.0081	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	52

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.52	0.0004	ND	NLE
beta-BHC	1	84.52	0.0004	ND	NLE
gamma-BHC	1	84.52	0.0005	ND	0.52
delta-BHC	1	84.52	0.0005	ND	NLE
Heptachlor	1	84.52	0.0004	ND	0.15
Aldrin	1	84.52	0.0005	ND	0.04
Heptachlor Epoxide	1	84.52	0.0007	ND	NLE
Endosulfan I	1	84.52	0.0006	ND	NLE
4,4'-DDE	1	84.52	0.0005	0.005	2
Dieldrin	1	84.52	0.0006	ND	0.042
Endrin	1	84.52	0.0006	ND	17
Endosulfan II	1	84.52	0.0005	ND	NLE
4,4'-DDD	1	84.52	0.0007	ND	3
Endrin Aldehyde	1	84.52	0.0006	ND	NLE
4,4'-DDT	1	84.52	0.0013	0.011	2
Endosulfan-Sulfate	1	84.52	0.0005	ND	NLE
gamma -Chlordane	1	84.52	0.0006	ND	NLE
alpha-Chlordane	1	84.52	0.0006	ND	NLE
Toxaphene	1	84.52	0.0004	ND	0.1
Arochlor 1016	1	84.52	0.0132	ND	0.49
Arochlor 1221	1	84.52	0.0242	ND	0.49
Arochlor 1232	1	84.52	0.0164	ND	0.49
Arochlor 1242	1	84.52	0.0188	ND	0.49
Arochlor 1248	1	84.52	0.0075	ND	0.49
Arochlor 1254	1	84.52	0.0047	ND	0.49
Arochlor 1260	1	84.52	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	53

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.39	0.0003	ND	NLE
beta-BHC	1	86.39	0.0003	ND	NLE
gamma-BHC	1	86.39	0.0004	ND	0.52
delta-BHC	1	86.39	0.0004	ND	NLE
Heptachlor	1	86.39	0.0003	ND	0.15
Aldrin	1	86.39	0.0004	ND	0.04
Heptachlor Epoxide	1	86.39	0.0007	ND	NLE
Endosulfan I	1	86.39	0.0006	ND	NLE
4,4'-DDE	1	86.39	0.0004	0.037	2
Dieldrin	1	86.39	0.0006	ND	0.042
Endrin	1	86.39	0.0006	ND	17
Endosulfan II	1	86.39	0.0004	ND	NLE
4,4'-DDD	1	86.39	0.0007	0.050	3
Endrin Aldehyde	1	86.39	0.0006	ND	NLE
4,4'-DDT	1	86.39	0.0012	0.112	2
Endosulfan-Sulfate	1	86.39	0.0004	ND	NLE
gamma -Chlordane	1	86.39	0.0006	ND	NLE
alpha-Chlordane	1	86.39	0.0006	ND	NLE
Toxaphene	1	86.39	0.0003	ND	0.1
Arochlor 1016	1	86.39	0.0126	ND	0.49
Arochlor 1221	1	86.39	0.0231	ND	0.49
Arochlor 1232	1	86.39	0.0157	ND	0.49
Arochlor 1242	1	86.39	0.0180	ND	0.49
Arochlor 1248	1	86.39	0.0072	ND	0.49
Arochlor 1254	1	86.39	0.0045	ND	0.49
Arochlor 1260	1	86.39	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	54

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	77.16	0.0004	ND	NLE
beta-BHC	1	77.16	0.0004	ND	NLE
gamma-BHC	1	77.16	0.0005	ND	0.52
delta-BHC	1	77.16	0.0005	ND	NLE
Heptachlor	1	77.16	0.0004	ND	0.15
Aldrin	1	77.16	0.0005	ND	0.04
Heptachlor Epoxide	1	77.16	0.0008	ND	NLE
Endosulfan I	1	77.16	0.0006	ND	NLE
4,4'-DDE	10	77.16	0.0050	0.264	2
Dieldrin	1	77.16	0.0006	ND	0.042
Endrin	1	77.16	0.0006	ND	17
Endosulfan II	1	77.16	0.0005	ND	NLE
4,4'-DDD	10	77.16	0.0076	0.781	3
Endrin Aldehyde	1	77.16	0.0006	ND	NLE
4,4'-DDT	10	77.16	0.0139	0.280	2
Endosulfan-Sulfate	1	77.16	0.0005	ND	NLE
gamma -Chlordane	1	77.16	0.0006	ND	NLE
alpha-Chlordane	1	77.16	0.0006	ND	NLE
Toxaphene	1	77.16	0.0004	ND	0.1
Arochlor 1016	1	77.16	0.0141	ND	0.49
Arochlor 1221	1	77.16	0.0259	ND	0.49
Arochlor 1232	1	77.16	0.0176	ND	0.49
Arochlor 1242	1	77.16	0.0202	ND	0.49
Arochlor 1248	1	77.16	0.0081	ND	0.49
Arochlor 1254	1	77.16	0.0050	ND	0.49
Arochlor 1260	1	77.16	0.0045	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	55

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	82.56	0.0003	ND	NLE
beta-BHC	1	82.56	0.0003	ND	NLE
gamma-BHC	1	82.56	0.0005	ND	0.52
delta-BHC	1	82.56	0.0005	ND	NLE
Heptachlor	1	82.56	0.0003	ND	0.15
Aldrin	1	82.56	0.0005	ND	0.04
Heptachlor Epoxide	1	82.56	0.0007	ND	NLE
Endosulfan I	1	82.56	0.0006	ND	NLE
4,4'-DDE	1	82.56	0.0005	0.050	2
Dieldrin	1	82.56	0.0006	ND	0.042
Endrin	1	82.56	0.0006	ND	17
Endosulfan II	1	82.56	0.0005	ND	NLE
4,4'-DDD	1	82.56	0.0007	0.026	3
Endrin Aldehyde	1	82.56	0.0006	ND	NLE
4,4'-DDT	1	82.56	0.0013	0.046	2
Endosulfan-Sulfate	1	82.56	0.0005	ND	NLE
gamma -Chlordane	1	82.56	0.0006	ND	NLE
alpha-Chlordane	1	82.56	0.0006	ND	NLE
Toxaphene	1	82.56	0.0003	ND	0.1
Arochlor 1016	1	82.56	0.0131	ND	0.49
Arochlor 1221	1	82.56	0.0240	ND	0.49
Arochlor 1232	1	82.56	0.0163	ND	0.49
Arochlor 1242	1	82.56	0.0187	ND	0.49
Arochlor 1248	1	82.56	0.0075	ND	0.49
Arochlor 1254	1	82.56	0.0047	ND	0.49
Arochlor 1260	1	82.56	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	56

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.64	0.0003	ND	NLE
beta-BHC	1	86.64	0.0003	ND	NLE
gamma-BHC	1	86.64	0.0004	ND	0.52
delta-BHC	1	86.64	0.0004	ND	NLE
Heptachlor	1	86.64	0.0003	ND	0.15
Aldrin	1	86.64	0.0004	ND	0.04
Heptachlor Epoxide	1	86.64	0.0007	ND	NLE
Endosulfan I	1	86.64	0.0005	ND	NLE
4,4'-DDE	10	86.64	0.0043	0.560	2
Dieldrin	1	86.64	0.0005	ND	0.042
Endrin	1	86.64	0.0005	ND	17
Endosulfan II	1	86.64	0.0004	ND	NLE
4,4'-DDD	10	86.64	0.0065	0.714	3
Endrin Aldehyde	1	86.64	0.0005	ND	NLE
4,4'-DDT	1	86.64	0.0012	0.097	2
Endosulfan-Sulfate	1	86.64	0.0004	ND	NLE
gamma -Chlordane	1	86.64	0.0005	ND	NLE
alpha-Chlordane	1	86.64	0.0005	ND	NLE
Toxaphene	1	86.64	0.0003	ND	0.1
Arochlor 1016	1	86.64	0.0122	ND	0.49
Arochlor 1221	1	86.64	0.0224	ND	0.49
Arochlor 1232	1	86.64	0.0152	ND	0.49
Arochlor 1242	1	86.64	0.0174	ND	0.49
Arochlor 1248	1	86.64	0.0069	ND	0.49
Arochlor 1254	1	86.64	0.0043	ND	0.49
Arochlor 1260	1	86.64	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	57

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.96	0.0004	ND	NLE
beta-BHC	1	83.96	0.0004	ND	NLE
gamma-BHC	1	83.96	0.0005	ND	0.52
delta-BHC	1	83.96	0.0005	ND	NLE
Heptachlor	1	83.96	0.0004	ND	0.15
Aldrin	1	83.96	0.0005	ND	0.04
Heptachlor Epoxide	1	83.96	0.0007	ND	NLE
Endosulfan I	1	83.96	0.0006	ND	NLE
4,4'-DDE	1	83.96	0.0005	0.002	2
Dieldrin	1	83.96	0.0006	ND	0.042
Endrin	1	83.96	0.0006	ND	17
Endosulfan II	1	83.96	0.0005	ND	NLE
4,4'-DDD	1	83.96	0.0007	ND	3
Endrin Aldehyde	1	83.96	0.0006	ND	NLE
4,4'-DDT	1	83.96	0.0013	0.004	2
Endosulfan-Sulfate	1	83.96	0.0005	ND	NLE
gamma -Chlordane	1	83.96	0.0006	ND	NLE
alpha-Chlordane	1	83.96	0.0006	ND	NLE
Toxaphene	1	83.96	0.0004	ND	0.1
Arochlor 1016	1	83.96	0.0132	ND	0.49
Arochlor 1221	1	83.96	0.0242	ND	0.49
Arochlor 1232	1	83.96	0.0165	ND	0.49
Arochlor 1242	1	83.96	0.0188	ND	0.49
Arochlor 1248	1	83.96	0.0075	ND	0.49
Arochlor 1254	1	83.96	0.0047	ND	0.49
Arochlor 1260	1	83.96	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	58

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.82	0.0003	ND	NLE
beta-BHC	1	85.82	0.0003	ND	NLE
gamma-BHC	1	85.82	0.0005	ND	0.52
delta-BHC	1	85.82	0.0005	ND	NLE
Heptachlor	1	85.82	0.0003	ND	0.15
Aldrin	1	85.82	0.0005	ND	0.04
Heptachlor Epoxide	1	85.82	0.0007	ND	NLE
Endosulfan I	1	85.82	0.0006	ND	NLE
4,4'-DDE	1	85.82	0.0005	0.006	2
Dieldrin	1	85.82	0.0006	ND	0.042
Endrin	1	85.82	0.0006	ND	17
Endosulfan II	1	85.82	0.0005	ND	NLE
4,4'-DDD	1	85.82	0.0007	0.003	3
Endrin Aldehyde	1	85.82	0.0006	ND	NLE
4,4'-DDT	1	85.82	0.0012	0.023	2
Endosulfan-Sulfate	1	85.82	0.0005	ND	NLE
gamma -Chlordane	1	85.82	0.0006	ND	NLE
alpha-Chlordane	1	85.82	0.0006	ND	NLE
Toxaphene	1	85.82	0.0003	ND	0.1
Arochlor 1016	1	85.82	0.0127	ND	0.49
Arochlor 1221	1	85.82	0.0233	ND	0.49
Arochlor 1232	1	85.82	0.0158	ND	0.49
Arochlor 1242	1	85.82	0.0181	ND	0.49
Arochlor 1248	1	85.82	0.0072	ND	0.49
Arochlor 1254	1	85.82	0.0045	ND	0.49
Arochlor 1260	1	85.82	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	59

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.22	0.0003	ND	NLE
beta-BHC	1	91.22	0.0003	ND	NLE
gamma-BHC	1	91.22	0.0004	ND	0.52
delta-BHC	1	91.22	0.0004	ND	NLE
Heptachlor	1	91.22	0.0003	ND	0.15
Aldrin	1	91.22	0.0004	ND	0.04
Heptachlor Epoxide	1	91.22	0.0006	ND	NLE
Endosulfan I	1	91.22	0.0005	ND	NLE
4,4'-DDE	10	91.22	0.0041	0.252	2
Dieldrin	1	91.22	0.0005	ND	0.042
Endrin	1	91.22	0.0005	ND	17
Endosulfan II	1	91.22	0.0004	ND	NLE
4,4'-DDD	1	91.22	0.0006	0.028	3
Endrin Aldehyde	1	91.22	0.0005	ND	NLE
4,4'-DDT	10	91.22	0.0113	0.499	2
Endosulfan-Sulfate	1	91.22	0.0004	ND	NLE
gamma -Chlordane	1	91.22	0.0005	ND	NLE
alpha-Chlordane	1	91.22	0.0005	ND	NLE
Toxaphene	1	91.22	0.0003	ND	0.1
Arochlor 1016	1	91.22	0.0115	ND	0.49
Arochlor 1221	1	91.22	0.0212	ND	0.49
Arochlor 1232	1	91.22	0.0144	ND	0.49
Arochlor 1242	1	91.22	0.0165	ND	0.49
Arochlor 1248	1	91.22	0.0066	ND	0.49
Arochlor 1254	1	91.22	0.0041	ND	0.49
Arochlor 1260	1	91.22	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	60

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.44	0.0003	ND	NLE
beta-BHC	1	91.44	0.0003	ND	NLE
gamma-BHC	1	91.44	0.0004	ND	0.52
delta-BHC	1	91.44	0.0004	ND	NLE
Heptachlor	1	91.44	0.0003	ND	0.15
Aldrin	1	91.44	0.0004	ND	0.04
Heptachlor Epoxide	1	91.44	0.0006	ND	NLE
Endosulfan I	1	91.44	0.0005	ND	NLE
4,4'-DDE	1	91.44	0.0004	0.004	2
Dieldrin	1	91.44	0.0005	ND	0.042
Endrin	1	91.44	0.0005	ND	17
Endosulfan II	1	91.44	0.0004	ND	NLE
4,4'-DDD	1	91.44	0.0006	ND	3
Endrin Aldehyde	1	91.44	0.0005	ND	NLE
4,4'-DDT	1	91.44	0.0012	0.003	2
Endosulfan-Sulfate	1	91.44	0.0004	ND	NLE
gamma -Chlordane	1	91.44	0.0005	ND	NLE
alpha-Chlordane	1	91.44	0.0005	ND	NLE
Toxaphene	1	91.44	0.0003	ND	0.1
Arochlor 1016	1	91.44	0.0119	ND	0.49
Arochlor 1221	1	91.44	0.0219	ND	0.49
Arochlor 1232	1	91.44	0.0149	ND	0.49
Arochlor 1242	1	91.44	0.0170	ND	0.49
Arochlor 1248	1	91.44	0.0068	ND	0.49
Arochlor 1254	1	91.44	0.0043	ND	0.49
Arochlor 1260	1	91.44	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4748.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/26/99
	Bldg. 173	**Extraction Date:**	8/27/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	61

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.26	0.0003	ND	NLE
beta-BHC	1	90.26	0.0003	ND	NLE
gamma-BHC	1	90.26	0.0004	ND	0.52
delta-BHC	1	90.26	0.0004	ND	NLE
Heptachlor	1	90.26	0.0003	ND	0.15
Aldrin	1	90.26	0.0004	ND	0.04
Heptachlor Epoxide	1	90.26	0.0007	ND	NLE
Endosulfan I	1	90.26	0.0005	ND	NLE
4,4'-DDE	1	90.26	0.0004	0.002	2
Dieldrin	1	90.26	0.0005	ND	0.042
Endrin	1	90.26	0.0005	ND	17
Endosulfan II	1	90.26	0.0004	ND	NLE
4,4'-DDD	1	90.26	0.0007	0.001	3
Endrin Aldehyde	1	90.26	0.0005	ND	NLE
4,4'-DDT	1	90.26	0.0012	ND	2
Endosulfan-Sulfate	1	90.26	0.0004	ND	NLE
gamma -Chlordane	1	90.26	0.0005	ND	NLE
alpha-Chlordane	1	90.26	0.0005	ND	NLE
Toxaphene	1	90.26	0.0003	ND	0.1
Arochlor 1016	1	90.26	0.0122	ND	0.49
Arochlor 1221	1	90.26	0.0224	ND	0.49
Arochlor 1232	1	90.26	0.0153	ND	0.49
Arochlor 1242	1	90.26	0.0174	ND	0.49
Arochlor 1248	1	90.26	0.0070	ND	0.49
Arochlor 1254	1	90.26	0.0044	ND	0.49
Arochlor 1260	1	90.26	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	63

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.93	0.0003	ND	NLE
beta-BHC	1	86.93	0.0003	ND	NLE
gamma-BHC	1	86.93	0.0004	ND	0.52
delta-BHC	1	86.93	0.0004	ND	NLE
Heptachlor	1	86.93	0.0003	ND	0.15
Aldrin	1	86.93	0.0004	ND	0.04
Heptachlor Epoxide	1	86.93	0.0007	ND	NLE
Endosulfan I	1	86.93	0.0006	ND	NLE
4,4'-DDE	1	86.93	0.0004	0.048	2
Dieldrin	1	86.93	0.0006	ND	0.042
Endrin	1	86.93	0.0006	ND	17
Endosulfan II	1	86.93	0.0004	ND	NLE
4,4'-DDD	1	86.93	0.0007	0.024	3
Endrin Aldehyde	1	86.93	0.0006	ND	NLE
4,4'-DDT	1	86.93	0.0012	0.015	2
Endosulfan-Sulfate	1	86.93	0.0004	ND	NLE
gamma -Chlordane	1	86.93	0.0006	ND	NLE
alpha-Chlordane	1	86.93	0.0006	ND	NLE
Toxaphene	1	86.93	0.0003	ND	0.1
Arochlor 1016	1	86.93	0.0124	ND	0.49
Arochlor 1221	1	86.93	0.0228	ND	0.49
Arochlor 1232	1	86.93	0.0155	ND	0.49
Arochlor 1242	1	86.93	0.0177	ND	0.49
Arochlor 1248	1	86.93	0.0071	ND	0.49
Arochlor 1254	1	86.93	0.0044	ND	0.49
Arochlor 1260	1	86.93	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	64

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	81.44	0.0003	ND	NLE
beta-BHC	1	81.44	0.0003	ND	NLE
gamma-BHC	1	81.44	0.0005	ND	0.52
delta-BHC	1	81.44	0.0005	ND	NLE
Heptachlor	1	81.44	0.0003	ND	0.15
Aldrin	1	81.44	0.0005	ND	0.04
Heptachlor Epoxide	1	81.44	0.0007	ND	NLE
Endosulfan I	1	81.44	0.0006	ND	NLE
4,4'-DDE	1	81.44	0.0005	ND	2
Dieldrin	1	81.44	0.0006	ND	0.042
Endrin	1	81.44	0.0006	ND	17
Endosulfan II	1	81.44	0.0005	ND	NLE
4,4'-DDD	1	81.44	0.0007	ND	3
Endrin Aldehyde	1	81.44	0.0006	ND	NLE
4,4'-DDT	1	81.44	0.0013	0.003	2
Endosulfan-Sulfate	1	81.44	0.0005	ND	NLE
gamma -Chlordane	1	81.44	0.0006	ND	NLE
alpha-Chlordane	1	81.44	0.0006	ND	NLE
Toxaphene	1	81.44	0.0003	ND	0.1
Arochlor 1016	1	81.44	0.0128	ND	0.49
Arochlor 1221	1	81.44	0.0235	ND	0.49
Arochlor 1232	1	81.44	0.0160	ND	0.49
Arochlor 1242	1	81.44	0.0183	ND	0.49
Arochlor 1248	1	81.44	0.0073	ND	0.49
Arochlor 1254	1	81.44	0.0046	ND	0.49
Arochlor 1260	1	81.44	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	65

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.06	0.0003	ND	NLE
beta-BHC	1	84.06	0.0003	ND	NLE
gamma-BHC	1	84.06	0.0005	ND	0.52
delta-BHC	1	84.06	0.0005	ND	NLE
Heptachlor	1	84.06	0.0003	ND	0.15
Aldrin	1	84.06	0.0005	ND	0.04
Heptachlor Epoxide	1	84.06	0.0007	ND	NLE
Endosulfan I	1	84.06	0.0006	ND	NLE
4,4'-DDE	1	84.06	0.0005	0.013	2
Dieldrin	1	84.06	0.0006	ND	0.042
Endrin	1	84.06	0.0006	ND	17
Endosulfan II	1	84.06	0.0005	ND	NLE
4,4'-DDD	1	84.06	0.0007	0.003	3
Endrin Aldehyde	1	84.06	0.0006	ND	NLE
4,4'-DDT	2	84.06	0.0025	0.174	2
Endosulfan-Sulfate	1	84.06	0.0005	ND	NLE
gamma -Chlordane	1	84.06	0.0006	ND	NLE
alpha-Chlordane	1	84.06	0.0006	ND	NLE
Toxaphene	1	84.06	0.0003	ND	0.1
Arochlor 1016	1	84.06	0.0128	ND	0.49
Arochlor 1221	1	84.06	0.0236	ND	0.49
Arochlor 1232	1	84.06	0.0160	ND	0.49
Arochlor 1242	1	84.06	0.0183	ND	0.49
Arochlor 1248	1	84.06	0.0073	ND	0.49
Arochlor 1254	1	84.06	0.0046	ND	0.49
Arochlor 1260	1	84.06	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	66

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.91	0.0003	ND	NLE
beta-BHC	1	84.91	0.0003	ND	NLE
gamma-BHC	1	84.91	0.0004	ND	0.52
delta-BHC	1	84.91	0.0004	ND	NLE
Heptachlor	1	84.91	0.0003	ND	0.15
Aldrin	1	84.91	0.0004	ND	0.04
Heptachlor Epoxide	1	84.91	0.0007	ND	NLE
Endosulfan I	1	84.91	0.0006	ND	NLE
4,4'-DDE	1	84.91	0.0004	0.009	2
Dieldrin	1	84.91	0.0006	ND	0.042
Endrin	1	84.91	0.0006	ND	17
Endosulfan II	1	84.91	0.0004	ND	NLE
4,4'-DDD	1	84.91	0.0007	0.009	3
Endrin Aldehyde	1	84.91	0.0006	ND	NLE
4,4'-DDT	1	84.91	0.0012	0.011	2
Endosulfan-Sulfate	1	84.91	0.0004	ND	NLE
gamma -Chlordane	1	84.91	0.0006	ND	NLE
alpha-Chlordane	1	84.91	0.0006	ND	NLE
Toxaphene	1	84.91	0.0003	ND	0.1
Arochlor 1016	1	84.91	0.0124	ND	0.49
Arochlor 1221	1	84.91	0.0227	ND	0.49
Arochlor 1232	1	84.91	0.0154	ND	0.49
Arochlor 1242	1	84.91	0.0176	ND	0.49
Arochlor 1248	1	84.91	0.0071	ND	0.49
Arochlor 1254	1	84.91	0.0044	ND	0.49
Arochlor 1260	1	84.91	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	67

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	88.11	0.0003	ND	NLE
beta-BHC	1	88.11	0.0003	ND	NLE
gamma-BHC	1	88.11	0.0004	ND	0.52
delta-BHC	1	88.11	0.0004	ND	NLE
Heptachlor	1	88.11	0.0003	ND	0.15
Aldrin	1	88.11	0.0004	ND	0.04
Heptachlor Epoxide	1	88.11	0.0007	ND	NLE
Endosulfan I	1	88.11	0.0005	ND	NLE
4,4'-DDE	10	88.11	0.0044	0.210	2
Dieldrin	1	88.11	0.0005	ND	0.042
Endrin	1	88.11	0.0005	ND	17
Endosulfan II	1	88.11	0.0004	ND	NLE
4,4'-DDD	10	88.11	0.0066	0.961	3
Endrin Aldehyde	1	88.11	0.0005	ND	NLE
4,4'-DDT	1	88.11	0.0012	0.080	2
Endosulfan-Sulfate	1	88.11	0.0004	ND	NLE
gamma -Chlordane	1	88.11	0.0005	ND	NLE
alpha-Chlordane	1	88.11	0.0005	ND	NLE
Toxaphene	1	88.11	0.0003	ND	0.1
Arochlor 1016	1	88.11	0.0123	ND	0.49
Arochlor 1221	1	88.11	0.0225	ND	0.49
Arochlor 1232	1	88.11	0.0153	ND	0.49
Arochlor 1242	1	88.11	0.0175	ND	0.49
Arochlor 1248	1	88.11	0.0070	ND	0.49
Arochlor 1254	1	88.11	0.0044	ND	0.49
Arochlor 1260	1	88.11	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	68

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	92.52	0.0003	ND	NLE
beta-BHC	1	92.52	0.0003	ND	NLE
gamma-BHC	1	92.52	0.0004	ND	0.52
delta-BHC	1	92.52	0.0004	ND	NLE
Heptachlor	1	92.52	0.0003	ND	0.15
Aldrin	1	92.52	0.0004	ND	0.04
Heptachlor Epoxide	1	92.52	0.0006	ND	NLE
Endosulfan I	1	92.52	0.0005	ND	NLE
4,4'-DDE	1	92.52	0.0004	ND	2
Dieldrin	1	92.52	0.0005	ND	0.042
Endrin	1	92.52	0.0005	ND	17
Endosulfan II	1	92.52	0.0004	ND	NLE
4,4'-DDD	1	92.52	0.0006	ND	3
Endrin Aldehyde	1	92.52	0.0005	ND	NLE
4,4'-DDT	1	92.52	0.0012	ND	2
Endosulfan-Sulfate	1	92.52	0.0004	ND	NLE
gamma -Chlordane	1	92.52	0.0005	ND	NLE
alpha-Chlordane	1	92.52	0.0005	ND	NLE
Toxaphene	1	92.52	0.0003	ND	0.1
Arochlor 1016	1	92.52	0.0118	ND	0.49
Arochlor 1221	1	92.52	0.0217	ND	0.49
Arochlor 1232	1	92.52	0.0147	ND	0.49
Arochlor 1242	1	92.52	0.0168	ND	0.49
Arochlor 1248	1	92.52	0.0067	ND	0.49
Arochlor 1254	1	92.52	0.0042	ND	0.49
Arochlor 1260	1	92.52	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	69

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.56	0.0003	ND	NLE
beta-BHC	1	89.56	0.0003	ND	NLE
gamma-BHC	1	89.56	0.0004	ND	0.52
delta-BHC	1	89.56	0.0004	ND	NLE
Heptachlor	1	89.56	0.0003	ND	0.15
Aldrin	1	89.56	0.0004	ND	0.04
Heptachlor Epoxide	1	89.56	0.0006	ND	NLE
Endosulfan I	1	89.56	0.0005	ND	NLE
4,4'-DDE	1	89.56	0.0004	0.003	2
Dieldrin	1	89.56	0.0005	ND	0.042
Endrin	1	89.56	0.0005	ND	17
Endosulfan II	1	89.56	0.0004	ND	NLE
4,4'-DDD	1	89.56	0.0006	ND	3
Endrin Aldehyde	1	89.56	0.0005	ND	NLE
4,4'-DDT	1	89.56	0.0012	0.002	2
Endosulfan-Sulfate	1	89.56	0.0004	ND	NLE
gamma -Chlordane	1	89.56	0.0005	ND	NLE
alpha-Chlordane	1	89.56	0.0005	ND	NLE
Toxaphene	1	89.56	0.0003	ND	0.1
Arochlor 1016	1	89.56	0.0120	ND	0.49
Arochlor 1221	1	89.56	0.0221	ND	0.49
Arochlor 1232	1	89.56	0.0150	ND	0.49
Arochlor 1242	1	89.56	0.0171	ND	0.49
Arochlor 1248	1	89.56	0.0069	ND	0.49
Arochlor 1254	1	89.56	0.0043	ND	0.49
Arochlor 1260	1	89.56	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	70

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.97	0.0003	ND	NLE
beta-BHC	1	85.97	0.0003	ND	NLE
gamma-BHC	1	85.97	0.0005	ND	0.52
delta-BHC	1	85.97	0.0005	ND	NLE
Heptachlor	1	85.97	0.0003	ND	0.15
Aldrin	1	85.97	0.0005	ND	0.04
Heptachlor Epoxide	1	85.97	0.0007	ND	NLE
Endosulfan I	1	85.97	0.0006	ND	NLE
4,4'-DDE	1	85.97	0.0005	0.064	2
Dieldrin	1	85.97	0.0006	ND	0.042
Endrin	1	85.97	0.0006	ND	17
Endosulfan II	1	85.97	0.0005	ND	NLE
4,4'-DDD	1	85.97	0.0007	0.025	3
Endrin Aldehyde	1	85.97	0.0006	ND	NLE
4,4'-DDT	5	85.97	0.0064	0.330	2
Endosulfan-Sulfate	1	85.97	0.0005	ND	NLE
gamma -Chlordane	1	85.97	0.0006	ND	NLE
alpha-Chlordane	1	85.97	0.0006	ND	NLE
Toxaphene	1	85.97	0.0003	ND	0.1
Arochlor 1016	1	85.97	0.0130	ND	0.49
Arochlor 1221	1	85.97	0.0238	ND	0.49
Arochlor 1232	1	85.97	0.0162	ND	0.49
Arochlor 1242	1	85.97	0.0185	ND	0.49
Arochlor 1248	1	85.97	0.0074	ND	0.49
Arochlor 1254	1	85.97	0.0046	ND	0.49
Arochlor 1260	1	85.97	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	71

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.96	0.0003	ND	NLE
beta-BHC	1	84.96	0.0003	ND	NLE
gamma-BHC	1	84.96	0.0005	ND	0.52
delta-BHC	1	84.96	0.0005	ND	NLE
Heptachlor	1	84.96	0.0003	ND	0.15
Aldrin	1	84.96	0.0005	ND	0.04
Heptachlor Epoxide	1	84.96	0.0007	ND	NLE
Endosulfan I	1	84.96	0.0006	ND	NLE
4,4'-DDE	1	84.96	0.0005	0.005	2
Dieldrin	1	84.96	0.0006	ND	0.042
Endrin	1	84.96	0.0006	ND	17
Endosulfan II	1	84.96	0.0005	ND	NLE
4,4'-DDD	1	84.96	0.0007	ND	3
Endrin Aldehyde	1	84.96	0.0006	ND	NLE
4,4'-DDT	1	84.96	0.0013	0.008	2
Endosulfan-Sulfate	1	84.96	0.0005	ND	NLE
gamma -Chlordane	1	84.96	0.0006	ND	NLE
alpha-Chlordane	1	84.96	0.0006	ND	NLE
Toxaphene	1	84.96	0.0003	ND	0.1
Arochlor 1016	1	84.96	0.0128	ND	0.49
Arochlor 1221	1	84.96	0.0236	ND	0.49
Arochlor 1232	1	84.96	0.0161	ND	0.49
Arochlor 1242	1	84.96	0.0184	ND	0.49
Arochlor 1248	1	84.96	0.0073	ND	0.49
Arochlor 1254	1	84.96	0.0046	ND	0.49
Arochlor 1260	1	84.96	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	72

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.36	0.0003	ND	NLE
beta-BHC	1	86.36	0.0003	ND	NLE
gamma-BHC	1	86.36	0.0005	ND	0.52
delta-BHC	1	86.36	0.0005	ND	NLE
Heptachlor	1	86.36	0.0003	ND	0.15
Aldrin	1	86.36	0.0005	ND	0.04
Heptachlor Epoxide	1	86.36	0.0007	ND	NLE
Endosulfan I	1	86.36	0.0006	ND	NLE
4,4'-DDE	1	86.36	0.0005	ND	2
Dieldrin	1	86.36	0.0006	ND	0.042
Endrin	1	86.36	0.0006	ND	17
Endosulfan II	1	86.36	0.0005	ND	NLE
4,4'-DDD	1	86.36	0.0007	ND	3
Endrin Aldehyde	1	86.36	0.0006	ND	NLE
4,4'-DDT	1	86.36	0.0013	ND	2
Endosulfan-Sulfate	1	86.36	0.0005	ND	NLE
gamma -Chlordane	1	86.36	0.0006	ND	NLE
alpha-Chlordane	1	86.36	0.0006	ND	NLE
Toxaphene	1	86.36	0.0003	ND	0.1
Arochlor 1016	1	86.36	0.0131	ND	0.49
Arochlor 1221	1	86.36	0.0240	ND	0.49
Arochlor 1232	1	86.36	0.0163	ND	0.49
Arochlor 1242	1	86.36	0.0187	ND	0.49
Arochlor 1248	1	86.36	0.0075	ND	0.49
Arochlor 1254	1	86.36	0.0047	ND	0.49
Arochlor 1260	1	86.36	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4754.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/27/99
	Bldg. 173	**Extraction Date:**	8/30/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/24/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	73

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	94.59	0.0003	ND	NLE
beta-BHC	1	94.59	0.0003	ND	NLE
gamma-BHC	1	94.59	0.0004	ND	0.52
delta-BHC	1	94.59	0.0004	ND	NLE
Heptachlor	1	94.59	0.0003	ND	0.15
Aldrin	1	94.59	0.0004	ND	0.04
Heptachlor Epoxide	1	94.59	0.0006	ND	NLE
Endosulfan I	1	94.59	0.0005	ND	NLE
4,4'-DDE	5	94.59	0.0019	0.166	2
Dieldrin	1	94.59	0.0005	ND	0.042
Endrin	1	94.59	0.0005	ND	17
Endosulfan II	1	94.59	0.0004	ND	NLE
4,4'-DDD	20	94.59	0.0117	1.766	3
Endrin Aldehyde	1	94.59	0.0005	ND	NLE
4,4'-DDT	5	94.59	0.0054	0.200	2
Endosulfan-Sulfate	1	94.59	0.0004	ND	NLE
gamma -Chlordane	1	94.59	0.0005	ND	NLE
alpha-Chlordane	1	94.59	0.0005	ND	NLE
Toxaphene	1	94.59	0.0003	ND	0.1
Arochlor 1016	1	94.59	0.0109	ND	0.49
Arochlor 1221	1	94.59	0.0201	ND	0.49
Arochlor 1232	1	94.59	0.0136	ND	0.49
Arochlor 1242	1	94.59	0.0156	ND	0.49
Arochlor 1248	1	94.59	0.0062	ND	0.49
Arochlor 1254	1	94.59	0.0039	ND	0.49
Arochlor 1260	1	94.59	0.0035	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	74

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.54	0.0003	ND	NLE
beta-BHC	1	89.54	0.0003	ND	NLE
gamma-BHC	1	89.54	0.0004	ND	0.52
delta-BHC	1	89.54	0.0004	ND	NLE
Heptachlor	1	89.54	0.0003	ND	0.15
Aldrin	1	89.54	0.0004	ND	0.04
Heptachlor Epoxide	1	89.54	0.0006	ND	NLE
Endosulfan I	1	89.54	0.0005	ND	NLE
4,4'-DDE	1	89.54	0.0004	0.039	2
Dieldrin	1	89.54	0.0005	ND	0.042
Endrin	1	89.54	0.0005	ND	17
Endosulfan II	1	89.54	0.0004	ND	NLE
4,4'-DDD	1	89.54	0.0006	0.012	3
Endrin Aldehyde	1	89.54	0.0005	ND	NLE
4,4'-DDT	2	89.54	0.0024	0.085	2
Endosulfan-Sulfate	1	89.54	0.0004	ND	NLE
gamma -Chlordane	1	89.54	0.0005	ND	NLE
alpha-Chlordane	1	89.54	0.0005	ND	NLE
Toxaphene	1	89.54	0.0003	ND	0.1
Arochlor 1016	1	89.54	0.0121	ND	0.49
Arochlor 1221	1	89.54	0.0222	ND	0.49
Arochlor 1232	1	89.54	0.0151	ND	0.49
Arochlor 1242	1	89.54	0.0173	ND	0.49
Arochlor 1248	1	89.54	0.0069	ND	0.49
Arochlor 1254	1	89.54	0.0043	ND	0.49
Arochlor 1260	1	89.54	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	75

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.21	0.0003	ND	NLE
beta-BHC	1	86.21	0.0003	ND	NLE
gamma-BHC	1	86.21	0.0004	ND	0.52
delta-BHC	1	86.21	0.0004	ND	NLE
Heptachlor	1	86.21	0.0003	ND	0.15
Aldrin	1	86.21	0.0004	ND	0.04
Heptachlor Epoxide	1	86.21	0.0007	ND	NLE
Endosulfan I	1	86.21	0.0006	ND	NLE
4,4'-DDE	10	86.21	0.0044	0.491	2
Dieldrin	1	86.21	0.0006	ND	0.042
Endrin	1	86.21	0.0006	ND	17
Endosulfan II	1	86.21	0.0004	ND	NLE
4,4'-DDD	10	86.21	0.0066	0.689	3
Endrin Aldehyde	1	86.21	0.0006	ND	NLE
4,4'-DDT	10	86.21	0.0121	0.156	2
Endosulfan-Sulfate	1	86.21	0.0004	ND	NLE
gamma -Chlordane	1	86.21	0.0006	ND	NLE
alpha-Chlordane	1	86.21	0.0006	ND	NLE
Toxaphene	1	86.21	0.0003	ND	0.1
Arochlor 1016	1	86.21	0.0123	ND	0.49
Arochlor 1221	1	86.21	0.0227	ND	0.49
Arochlor 1232	1	86.21	0.0154	ND	0.49
Arochlor 1242	1	86.21	0.0176	ND	0.49
Arochlor 1248	1	86.21	0.0070	ND	0.49
Arochlor 1254	1	86.21	0.0044	ND	0.49
Arochlor 1260	1	86.21	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	76

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.55	0.0003	ND	NLE
beta-BHC	1	91.55	0.0003	ND	NLE
gamma-BHC	1	91.55	0.0004	ND	0.52
delta-BHC	1	91.55	0.0004	ND	NLE
Heptachlor	1	91.55	0.0003	ND	0.15
Aldrin	1	91.55	0.0004	ND	0.04
Heptachlor Epoxide	1	91.55	0.0006	ND	NLE
Endosulfan I	1	91.55	0.0005	ND	NLE
4,4'-DDE	10	91.55	0.0043	0.137	2
Dieldrin	1	91.55	0.0005	ND	0.042
Endrin	1	91.55	0.0005	ND	17
Endosulfan II	1	91.55	0.0004	ND	NLE
4,4'-DDD	10	91.55	0.0065	0.115	3
Endrin Aldehyde	1	91.55	0.0005	ND	NLE
4,4'-DDT	10	91.55	0.0119	0.246	2
Endosulfan-Sulfate	1	91.55	0.0004	ND	NLE
gamma -Chlordane	1	91.55	0.0005	ND	NLE
alpha-Chlordane	1	91.55	0.0005	ND	NLE
Toxaphene	1	91.55	0.0003	ND	0.1
Arochlor 1016	1	91.55	0.0121	ND	0.49
Arochlor 1221	1	91.55	0.0223	ND	0.49
Arochlor 1232	1	91.55	0.0151	ND	0.49
Arochlor 1242	1	91.55	0.0173	ND	0.49
Arochlor 1248	1	91.55	0.0069	ND	0.49
Arochlor 1254	1	91.55	0.0043	ND	0.49
Arochlor 1260	1	91.55	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	77

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.59	0.0003	ND	NLE
beta-BHC	1	87.59	0.0003	ND	NLE
gamma-BHC	1	87.59	0.0004	ND	0.52
delta-BHC	1	87.59	0.0004	ND	NLE
Heptachlor	1	87.59	0.0003	ND	0.15
Aldrin	1	87.59	0.0004	ND	0.04
Heptachlor Epoxide	1	87.59	0.0007	ND	NLE
Endosulfan I	1	87.59	0.0005	ND	NLE
4,4'-DDE	1	87.59	0.0004	ND	2
Dieldrin	1	87.59	0.0005	ND	0.042
Endrin	1	87.59	0.0005	ND	17
Endosulfan II	1	87.59	0.0004	ND	NLE
4,4'-DDD	1	87.59	0.0007	ND	3
Endrin Aldehyde	1	87.59	0.0005	ND	NLE
4,4'-DDT	1	87.59	0.0012	0.003	2
Endosulfan-Sulfate	1	87.59	0.0004	ND	NLE
gamma -Chlordane	1	87.59	0.0005	ND	NLE
alpha-Chlordane	1	87.59	0.0005	ND	NLE
Toxaphene	1	87.59	0.0003	ND	0.1
Arochlor 1016	1	87.59	0.0121	ND	0.49
Arochlor 1221	1	87.59	0.0223	ND	0.49
Arochlor 1232	1	87.59	0.0152	ND	0.49
Arochlor 1242	1	87.59	0.0173	ND	0.49
Arochlor 1248	1	87.59	0.0069	ND	0.49
Arochlor 1254	1	87.59	0.0043	ND	0.49
Arochlor 1260	1	87.59	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	78

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.82	0.0003	ND	NLE
beta-BHC	1	86.82	0.0003	ND	NLE
gamma-BHC	1	86.82	0.0004	ND	0.52
delta-BHC	1	86.82	0.0004	ND	NLE
Heptachlor	1	86.82	0.0003	ND	0.15
Aldrin	1	86.82	0.0004	ND	0.04
Heptachlor Epoxide	1	86.82	0.0007	ND	NLE
Endosulfan I	1	86.82	0.0005	ND	NLE
4,4'-DDE	1	86.82	0.0004	0.001	2
Dieldrin	1	86.82	0.0005	ND	0.042
Endrin	1	86.82	0.0005	ND	17
Endosulfan II	1	86.82	0.0004	ND	NLE
4,4'-DDD	1	86.82	0.0007	ND	3
Endrin Aldehyde	1	86.82	0.0005	ND	NLE
4,4'-DDT	1	86.82	0.0012	0.003	2
Endosulfan-Sulfate	1	86.82	0.0004	ND	NLE
gamma -Chlordane	1	86.82	0.0005	ND	NLE
alpha-Chlordane	1	86.82	0.0005	ND	NLE
Toxaphene	1	86.82	0.0003	ND	0.1
Arochlor 1016	1	86.82	0.0122	ND	0.49
Arochlor 1221	1	86.82	0.0224	ND	0.49
Arochlor 1232	1	86.82	0.0152	ND	0.49
Arochlor 1242	1	86.82	0.0174	ND	0.49
Arochlor 1248	1	86.82	0.0070	ND	0.49
Arochlor 1254	1	86.82	0.0043	ND	0.49
Arochlor 1260	1	86.82	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

001351

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	79

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	82.10	0.0004	ND	NLE
beta-BHC	1	82.10	0.0004	ND	NLE
gamma-BHC	1	82.10	0.0005	ND	0.52
delta-BHC	1	82.10	0.0005	ND	NLE
Heptachlor	1	82.10	0.0004	ND	0.15
Aldrin	1	82.10	0.0005	ND	0.04
Heptachlor Epoxide	1	82.10	0.0007	ND	NLE
Endosulfan I	1	82.10	0.0006	ND	NLE
4,4'-DDE	5	82.10	0.0024	0.097	2
Dieldrin	1	82.10	0.0006	ND	0.042
Endrin	1	82.10	0.0006	ND	17
Endosulfan II	1	82.10	0.0005	ND	NLE
4,4'-DDD	5	82.10	0.0036	0.230	3
Endrin Aldehyde	1	82.10	0.0006	ND	NLE
4,4'-DDT	1	82.10	0.0013	0.054	2
Endosulfan-Sulfate	1	82.10	0.0005	ND	NLE
gamma -Chlordane	1	82.10	0.0006	ND	NLE
alpha-Chlordane	1	82.10	0.0006	ND	NLE
Toxaphene	1	82.10	0.0004	ND	0.1
Arochlor 1016	1	82.10	0.0135	ND	0.49
Arochlor 1221	1	82.10	0.0249	ND	0.49
Arochlor 1232	1	82.10	0.0169	ND	0.49
Arochlor 1242	1	82.10	0.0194	ND	0.49
Arochlor 1248	1	82.10	0.0077	ND	0.49
Arochlor 1254	1	82.10	0.0048	ND	0.49
Arochlor 1260	1	82.10	0.0044	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	80

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.08	0.0003	ND	NLE
beta-BHC	1	85.08	0.0003	ND	NLE
gamma-BHC	1	85.08	0.0005	ND	0.52
delta-BHC	1	85.08	0.0005	ND	NLE
Heptachlor	1	85.08	0.0003	ND	0.15
Aldrin	1	85.08	0.0005	ND	0.04
Heptachlor Epoxide	1	85.08	0.0007	ND	NLE
Endosulfan I	1	85.08	0.0006	ND	NLE
4,4'-DDE	1	85.08	0.0005	ND	2
Dieldrin	1	85.08	0.0006	ND	0.042
Endrin	1	85.08	0.0006	ND	17
Endosulfan II	1	85.08	0.0005	ND	NLE
4,4'-DDD	1	85.08	0.0007	ND	3
Endrin Aldehyde	1	85.08	0.0006	ND	NLE
4,4'-DDT	1	85.08	0.0013	ND	2
Endosulfan-Sulfate	1	85.08	0.0005	ND	NLE
gamma -Chlordane	1	85.08	0.0006	ND	NLE
alpha-Chlordane	1	85.08	0.0006	ND	NLE
Toxaphene	1	85.08	0.0003	ND	0.1
Arochlor 1016	1	85.08	0.0130	ND	0.49
Arochlor 1221	1	85.08	0.0240	ND	0.49
Arochlor 1232	1	85.08	0.0163	ND	0.49
Arochlor 1242	1	85.08	0.0186	ND	0.49
Arochlor 1248	1	85.08	0.0074	ND	0.49
Arochlor 1254	1	85.08	0.0047	ND	0.49
Arochlor 1260	1	85.08	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/27/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	81

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	81.46	0.0004	ND	NLE
beta-BHC	1	81.46	0.0004	ND	NLE
gamma-BHC	1	81.46	0.0005	ND	0.52
delta-BHC	1	81.46	0.0005	ND	NLE
Heptachlor	1	81.46	0.0004	ND	0.15
Aldrin	1	81.46	0.0005	ND	0.04
Heptachlor Epoxide	1	81.46	0.0007	ND	NLE
Endosulfan I	1	81.46	0.0006	ND	NLE
4,4'-DDE	10	81.46	0.0047	0.751	2
Dieldrin	1	81.46	0.0006	ND	0.042
Endrin	1	81.46	0.0006	ND	17
Endosulfan II	1	81.46	0.0005	ND	NLE
4,4'-DDD	10	81.46	0.0070	0.414	3
Endrin Aldehyde	1	81.46	0.0006	ND	NLE
4,4'-DDT	50	81.46	0.0644	1.980	2
Endosulfan-Sulfate	1	81.46	0.0005	ND	NLE
gamma -Chlordane	1	81.46	0.0006	0.110	NLE
alpha-Chlordane	1	81.46	0.0006	0.063	NLE
Toxaphene	1	81.46	0.0004	ND	0.1
Arochlor 1016	1	81.46	0.0131	ND	0.49
Arochlor 1221	1	81.46	0.0241	ND	0.49
Arochlor 1232	1	81.46	0.0164	ND	0.49
Arochlor 1242	1	81.46	0.0187	ND	0.49
Arochlor 1248	1	81.46	0.0075	ND	0.49
Arochlor 1254	1	81.46	0.0047	ND	0.49
Arochlor 1260	1	81.46	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	82

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	79.33	0.0004	ND	NLE
beta-BHC	1	79.33	0.0004	ND	NLE
gamma-BHC	1	79.33	0.0005	ND	0.52
delta-BHC	1	79.33	0.0005	ND	NLE
Heptachlor	1	79.33	0.0004	ND	0.15
Aldrin	1	79.33	0.0005	ND	0.04
Heptachlor Epoxide	1	79.33	0.0007	ND	NLE
Endosulfan I	1	79.33	0.0006	ND	NLE
4,4'-DDE	5	79.33	0.0025	0.181	2
Dieldrin	1	79.33	0.0006	ND	0.042
Endrin	1	79.33	0.0006	ND	17
Endosulfan II	1	79.33	0.0005	ND	NLE
4,4'-DDD	5	79.33	0.0037	0.280	3
Endrin Aldehyde	1	79.33	0.0006	ND	NLE
4,4'-DDT	5	79.33	0.0068	0.124	2
Endosulfan-Sulfate	1	79.33	0.0005	ND	NLE
gamma -Chlordane	1	79.33	0.0006	ND	NLE
alpha-Chlordane	1	79.33	0.0006	ND	NLE
Toxaphene	1	79.33	0.0004	ND	0.1
Arochlor 1016	1	79.33	0.0138	ND	0.49
Arochlor 1221	1	79.33	0.0254	ND	0.49
Arochlor 1232	1	79.33	0.0172	ND	0.49
Arochlor 1242	1	79.33	0.0197	ND	0.49
Arochlor 1248	1	79.33	0.0079	ND	0.49
Arochlor 1254	1	79.33	0.0049	ND	0.49
Arochlor 1260	1	79.33	0.0044	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	83

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.73	0.0003	ND	NLE
beta-BHC	1	85.73	0.0003	ND	NLE
gamma-BHC	1	85.73	0.0005	ND	0.52
delta-BHC	1	85.73	0.0005	ND	NLE
Heptachlor	1	85.73	0.0003	ND	0.15
Aldrin	1	85.73	0.0005	ND	0.04
Heptachlor Epoxide	1	85.73	0.0007	ND	NLE
Endosulfan I	1	85.73	0.0006	ND	NLE
4,4'-DDE	1	85.73	0.0005	0.003	2
Dieldrin	1	85.73	0.0006	ND	0.042
Endrin	1	85.73	0.0006	ND	17
Endosulfan II	1	85.73	0.0005	ND	NLE
4,4'-DDD	1	85.73	0.0007	ND	3
Endrin Aldehyde	1	85.73	0.0006	ND	NLE
4,4'-DDT	1	85.73	0.0012	0.010	2
Endosulfan-Sulfate	1	85.73	0.0005	ND	NLE
gamma -Chlordane	1	85.73	0.0006	ND	NLE
alpha-Chlordane	1	85.73	0.0006	ND	NLE
Toxaphene	1	85.73	0.0003	ND	0.1
Arochlor 1016	1	85.73	0.0127	ND	0.49
Arochlor 1221	1	85.73	0.0234	ND	0.49
Arochlor 1232	1	85.73	0.0159	ND	0.49
Arochlor 1242	1	85.73	0.0182	ND	0.49
Arochlor 1248	1	85.73	0.0073	ND	0.49
Arochlor 1254	1	85.73	0.0045	ND	0.49
Arochlor 1260	1	85.73	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	84

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	82.18	0.0004	ND	NLE
beta-BHC	1	82.18	0.0004	ND	NLE
gamma-BHC	1	82.18	0.0005	ND	0.52
delta-BHC	1	82.18	0.0005	ND	NLE
Heptachlor	1	82.18	0.0004	ND	0.15
Aldrin	1	82.18	0.0005	ND	0.04
Heptachlor Epoxide	1	82.18	0.0007	ND	NLE
Endosulfan I	1	82.18	0.0006	ND	NLE
4,4'-DDE	1	82.18	0.0005	0.017	2
Dieldrin	1	82.18	0.0006	ND	0.042
Endrin	1	82.18	0.0006	ND	17
Endosulfan II	1	82.18	0.0005	ND	NLE
4,4'-DDD	1	82.18	0.0007	0.005	3
Endrin Aldehyde	1	82.18	0.0006	ND	NLE
4,4'-DDT	1	82.18	0.0013	0.076	2
Endosulfan-Sulfate	1	82.18	0.0005	ND	NLE
gamma -Chlordane	1	82.18	0.0006	ND	NLE
alpha-Chlordane	1	82.18	0.0006	ND	NLE
Toxaphene	1	82.18	0.0004	ND	0.1
Arochlor 1016	1	82.18	0.0134	ND	0.49
Arochlor 1221	1	82.18	0.0246	ND	0.49
Arochlor 1232	1	82.18	0.0167	ND	0.49
Arochlor 1242	1	82.18	0.0191	ND	0.49
Arochlor 1248	1	82.18	0.0076	ND	0.49
Arochlor 1254	1	82.18	0.0048	ND	0.49
Arochlor 1260	1	82.18	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	85

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	93.64	0.0003	ND	NLE
beta-BHC	1	93.64	0.0003	ND	NLE
gamma-BHC	1	93.64	0.0004	ND	0.52
delta-BHC	1	93.64	0.0004	ND	NLE
Heptachlor	1	93.64	0.0003	ND	0.15
Aldrin	1	93.64	0.0004	ND	0.04
Heptachlor Epoxide	1	93.64	0.0006	ND	NLE
Endosulfan I	1	93.64	0.0005	ND	NLE
4,4'-DDE	1	93.64	0.0004	0.061	2
Dieldrin	1	93.64	0.0005	ND	0.042
Endrin	1	93.64	0.0005	ND	17
Endosulfan II	1	93.64	0.0004	ND	NLE
4,4'-DDD	1	93.64	0.0006	0.100	3
Endrin Aldehyde	1	93.64	0.0005	ND	NLE
4,4'-DDT	1	93.64	0.0011	0.043	2
Endosulfan-Sulfate	1	93.64	0.0004	ND	NLE
gamma -Chlordane	1	93.64	0.0005	ND	NLE
alpha-Chlordane	1	93.64	0.0005	ND	NLE
Toxaphene	1	93.64	0.0003	ND	0.1
Arochlor 1016	1	93.64	0.0115	ND	0.49
Arochlor 1221	1	93.64	0.0212	ND	0.49
Arochlor 1232	1	93.64	0.0144	ND	0.49
Arochlor 1242	1	93.64	0.0165	ND	0.49
Arochlor 1248	1	93.64	0.0066	ND	0.49
Arochlor 1254	1	93.64	0.0041	ND	0.49
Arochlor 1260	1	93.64	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.26
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	86

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.24	0.0003	ND	NLE
beta-BHC	1	91.24	0.0003	ND	NLE
gamma-BHC	1	91.24	0.0004	ND	0.52
delta-BHC	1	91.24	0.0004	ND	NLE
Heptachlor	1	91.24	0.0003	ND	0.15
Aldrin	1	91.24	0.0004	ND	0.04
Heptachlor Epoxide	1	91.24	0.0006	ND	NLE
Endosulfan I	1	91.24	0.0005	ND	NLE
4,4'-DDE	1	91.24	0.0004	ND	2
Dieldrin	1	91.24	0.0005	ND	0.042
Endrin	1	91.24	0.0005	ND	17
Endosulfan II	1	91.24	0.0004	ND	NLE
4,4'-DDD	1	91.24	0.0006	ND	3
Endrin Aldehyde	1	91.24	0.0005	ND	NLE
4,4'-DDT	1	91.24	0.0011	ND	2
Endosulfan-Sulfate	1	91.24	0.0004	ND	NLE
gamma -Chlordane	1	91.24	0.0005	ND	NLE
alpha-Chlordane	1	91.24	0.0005	ND	NLE
Toxaphene	1	91.24	0.0003	ND	0.1
Arochlor 1016	1	91.24	0.0117	ND	0.49
Arochlor 1221	1	91.24	0.0215	ND	0.49
Arochlor 1232	1	91.24	0.0146	ND	0.49
Arochlor 1242	1	91.24	0.0167	ND	0.49
Arochlor 1248	1	91.24	0.0067	ND	0.49
Arochlor 1254	1	91.24	0.0042	ND	0.49
Arochlor 1260	1	91.24	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.28
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	87

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.67	0.0003	ND	NLE
beta-BHC	1	86.67	0.0003	ND	NLE
gamma-BHC	1	86.67	0.0005	ND	0.52
delta-BHC	1	86.67	0.0005	ND	NLE
Heptachlor	1	86.67	0.0003	ND	0.15
Aldrin	1	86.67	0.0005	ND	0.04
Heptachlor Epoxide	1	86.67	0.0007	ND	NLE
Endosulfan I	1	86.67	0.0006	ND	NLE
4,4'-DDE	1	86.67	0.0005	ND	2
Dieldrin	1	86.67	0.0006	ND	0.042
Endrin	1	86.67	0.0006	ND	17
Endosulfan II	1	86.67	0.0005	ND	NLE
4,4'-DDD	1	86.67	0.0007	ND	3
Endrin Aldehyde	1	86.67	0.0006	ND	NLE
4,4'-DDT	1	86.67	0.0013	ND	2
Endosulfan-Sulfate	1	86.67	0.0005	ND	NLE
gamma -Chlordane	1	86.67	0.0006	ND	NLE
alpha-Chlordane	1	86.67	0.0006	ND	NLE
Toxaphene	1	86.67	0.0003	ND	0.1
Arochlor 1016	1	86.67	0.0127	ND	0.49
Arochlor 1221	1	86.67	0.0234	ND	0.49
Arochlor 1232	1	86.67	0.0159	ND	0.49
Arochlor 1242	1	86.67	0.0182	ND	0.49
Arochlor 1248	1	86.67	0.0073	ND	0.49
Arochlor 1254	1	86.67	0.0045	ND	0.49
Arochlor 1260	1	86.67	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4760.30
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/30/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	88

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.90	0.0003	ND	NLE
beta-BHC	1	87.90	0.0003	ND	NLE
gamma-BHC	1	87.90	0.0005	ND	0.52
delta-BHC	1	87.90	0.0005	ND	NLE
Heptachlor	1	87.90	0.0003	ND	0.15
Aldrin	1	87.90	0.0005	ND	0.04
Heptachlor Epoxide	1	87.90	0.0007	ND	NLE
Endosulfan I	1	87.90	0.0006	ND	NLE
4,4'-DDE	10	87.90	0.0046	0.280	2
Dieldrin	1	87.90	0.0006	ND	0.042
Endrin	1	87.90	0.0006	ND	17
Endosulfan II	1	87.90	0.0005	ND	NLE
4,4'-DDD	10	87.90	0.0068	0.659	3
Endrin Aldehyde	1	87.90	0.0006	ND	NLE
4,4'-DDT	10	87.90	0.0125	0.077	2
Endosulfan-Sulfate	1	87.90	0.0005	ND	NLE
gamma -Chlordane	1	87.90	0.0006	ND	NLE
alpha-Chlordane	1	87.90	0.0006	ND	NLE
Toxaphene	1	87.90	0.0003	ND	0.1
Arochlor 1016	1	87.90	0.0127	ND	0.49
Arochlor 1221	1	87.90	0.0234	ND	0.49
Arochlor 1232	1	87.90	0.0159	ND	0.49
Arochlor 1242	1	87.90	0.0182	ND	0.49
Arochlor 1248	1	87.90	0.0073	ND	0.49
Arochlor 1254	1	87.90	0.0046	ND	0.49
Arochlor 1260	1	87.90	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	89

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.33	0.0003	ND	NLE
beta-BHC	1	86.33	0.0003	ND	NLE
gamma-BHC	1	86.33	0.0005	ND	0.52
delta-BHC	1	86.33	0.0005	ND	NLE
Heptachlor	1	86.33	0.0003	ND	0.15
Aldrin	1	86.33	0.0005	ND	0.04
Heptachlor Epoxide	1	86.33	0.0007	ND	NLE
Endosulfan I	1	86.33	0.0006	ND	NLE
4,4'-DDE	1	86.33	0.0005	0.103	2
Dieldrin	1	86.33	0.0006	ND	0.042
Endrin	1	86.33	0.0006	ND	17
Endosulfan II	1	86.33	0.0005	ND	NLE
4,4'-DDD	1	86.33	0.0007	0.111	3
Endrin Aldehyde	1	86.33	0.0006	ND	NLE
4,4'-DDT	2	86.33	0.0025	0.125	2
Endosulfan-Sulfate	1	86.33	0.0005	ND	NLE
gamma -Chlordane	1	86.33	0.0006	ND	NLE
alpha-Chlordane	1	86.33	0.0006	ND	NLE
Toxaphene	1	86.33	0.0003	ND	0.1
Arochlor 1016	1	86.33	0.0129	ND	0.49
Arochlor 1221	1	86.33	0.0238	ND	0.49
Arochlor 1232	1	86.33	0.0162	ND	0.49
Arochlor 1242	1	86.33	0.0185	ND	0.49
Arochlor 1248	1	86.33	0.0074	ND	0.49
Arochlor 1254	1	86.33	0.0046	ND	0.49
Arochlor 1260	1	86.33	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	90

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	94.58	0.0003	ND	NLE
beta-BHC	1	94.58	0.0003	ND	NLE
gamma-BHC	1	94.58	0.0004	ND	0.52
delta-BHC	1	94.58	0.0004	ND	NLE
Heptachlor	1	94.58	0.0003	ND	0.15
Aldrin	1	94.58	0.0004	ND	0.04
Heptachlor Epoxide	1	94.58	0.0006	ND	NLE
Endosulfan I	1	94.58	0.0005	ND	NLE
4,4'-DDE	1	94.58	0.0004	0.004	2
Dieldrin	1	94.58	0.0005	ND	0.042
Endrin	1	94.58	0.0005	ND	17
Endosulfan II	1	94.58	0.0004	ND	NLE
4,4'-DDD	1	94.58	0.0006	0.022	3
Endrin Aldehyde	1	94.58	0.0005	ND	NLE
4,4'-DDT	1	94.58	0.0011	0.003	2
Endosulfan-Sulfate	1	94.58	0.0004	ND	NLE
gamma -Chlordane	1	94.58	0.0005	ND	NLE
alpha-Chlordane	1	94.58	0.0005	ND	NLE
Toxaphene	1	94.58	0.0003	ND	0.1
Arochlor 1016	1	94.58	0.0116	ND	0.49
Arochlor 1221	1	94.58	0.0213	ND	0.49
Arochlor 1232	1	94.58	0.0145	ND	0.49
Arochlor 1242	1	94.58	0.0166	ND	0.49
Arochlor 1248	1	94.58	0.0066	ND	0.49
Arochlor 1254	1	94.58	0.0041	ND	0.49
Arochlor 1260	1	94.58	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	91

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.31	0.0003	ND	NLE
beta-BHC	1	87.31	0.0003	ND	NLE
gamma-BHC	1	87.31	0.0005	ND	0.52
delta-BHC	1	87.31	0.0005	ND	NLE
Heptachlor	1	87.31	0.0003	ND	0.15
Aldrin	1	87.31	0.0005	ND	0.04
Heptachlor Epoxide	1	87.31	0.0007	ND	NLE
Endosulfan I	1	87.31	0.0006	ND	NLE
4,4'-DDE	1	87.31	0.0005	0.016	2
Dieldrin	1	87.31	0.0006	ND	0.042
Endrin	1	87.31	0.0006	ND	17
Endosulfan II	1	87.31	0.0005	ND	NLE
4,4'-DDD	1	87.31	0.0007	0.048	3
Endrin Aldehyde	1	87.31	0.0006	ND	NLE
4,4'-DDT	1	87.31	0.0012	0.015	2
Endosulfan-Sulfate	1	87.31	0.0005	ND	NLE
gamma -Chlordane	1	87.31	0.0006	ND	NLE
alpha-Chlordane	1	87.31	0.0006	ND	NLE
Toxaphene	1	87.31	0.0003	ND	0.1
Arochlor 1016	1	87.31	0.0127	ND	0.49
Arochlor 1221	1	87.31	0.0233	ND	0.49
Arochlor 1232	1	87.31	0.0158	ND	0.49
Arochlor 1242	1	87.31	0.0181	ND	0.49
Arochlor 1248	1	87.31	0.0072	ND	0.49
Arochlor 1254	1	87.31	0.0045	ND	0.49
Arochlor 1260	1	87.31	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	92

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.30	0.0003	ND	NLE
beta-BHC	1	85.30	0.0003	ND	NLE
gamma-BHC	1	85.30	0.0005	ND	0.52
delta-BHC	1	85.30	0.0005	ND	NLE
Heptachlor	1	85.30	0.0003	ND	0.15
Aldrin	1	85.30	0.0005	ND	0.04
Heptachlor Epoxide	1	85.30	0.0007	ND	NLE
Endosulfan I	1	85.30	0.0006	ND	NLE
4,4'-DDE	1	85.30	0.0005	0.003	2
Dieldrin	1	85.30	0.0006	ND	0.042
Endrin	1	85.30	0.0006	ND	17
Endosulfan II	1	85.30	0.0005	ND	NLE
4,4'-DDD	1	85.30	0.0007	0.002	3
Endrin Aldehyde	1	85.30	0.0006	ND	NLE
4,4'-DDT	1	85.30	0.0013	0.006	2
Endosulfan-Sulfate	1	85.30	0.0005	ND	NLE
gamma -Chlordane	1	85.30	0.0006	ND	NLE
alpha-Chlordane	1	85.30	0.0006	ND	NLE
Toxaphene	1	85.30	0.0003	ND	0.1
Arochlor 1016	1	85.30	0.0128	ND	0.49
Arochlor 1221	1	85.30	0.0235	ND	0.49
Arochlor 1232	1	85.30	0.0160	ND	0.49
Arochlor 1242	1	85.30	0.0182	ND	0.49
Arochlor 1248	1	85.30	0.0073	ND	0.49
Arochlor 1254	1	85.30	0.0046	ND	0.49
Arochlor 1260	1	85.30	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/1/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	9/28/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	93

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.85	0.0003	ND	NLE
beta-BHC	1	85.85	0.0003	ND	NLE
gamma-BHC	1	85.85	0.0004	ND	0.52
delta-BHC	1	85.85	0.0004	ND	NLE
Heptachlor	1	85.85	0.0003	ND	0.15
Aldrin	1	85.85	0.0004	ND	0.04
Heptachlor Epoxide	1	85.85	0.0007	ND	NLE
Endosulfan I	1	85.85	0.0005	ND	NLE
4,4'-DDE	1	85.85	0.0004	ND	2
Dieldrin	1	85.85	0.0005	ND	0.042
Endrin	1	85.85	0.0005	ND	17
Endosulfan II	1	85.85	0.0004	ND	NLE
4,4'-DDD	1	85.85	0.0007	ND	3
Endrin Aldehyde	1	85.85	0.0005	ND	NLE
4,4'-DDT	1	85.85	0.0012	ND	2
Endosulfan-Sulfate	1	85.85	0.0004	ND	NLE
gamma -Chlordane	1	85.85	0.0005	ND	NLE
alpha-Chlordane	1	85.85	0.0005	ND	NLE
Toxaphene	1	85.85	0.0003	ND	0.1
Arochlor 1016	1	85.85	0.0122	ND	0.49
Arochlor 1221	1	85.85	0.0224	ND	0.49
Arochlor 1232	1	85.85	0.0152	ND	0.49
Arochlor 1242	1	85.85	0.0174	ND	0.49
Arochlor 1248	1	85.85	0.0070	ND	0.49
Arochlor 1254	1	85.85	0.0044	ND	0.49
Arochlor 1260	1	85.85	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/6/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	94

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	86.23	0.0003	ND	NLE
beta-BHC	1	86.23	0.0003	ND	NLE
gamma-BHC	1	86.23	0.0004	ND	0.52
delta-BHC	1	86.23	0.0004	ND	NLE
Heptachlor	1	86.23	0.0003	ND	0.15
Aldrin	1	86.23	0.0004	ND	0.04
Heptachlor Epoxide	1	86.23	0.0006	ND	NLE
Endosulfan I	1	86.23	0.0005	ND	NLE
4,4'-DDE	1	86.23	0.0004	0.008	2
Dieldrin	1	86.23	0.0005	ND	0.042
Endrin	1	86.23	0.0005	ND	17
Endosulfan II	1	86.23	0.0004	ND	NLE
4,4'-DDD	1	86.23	0.0006	0.010	3
Endrin Aldehyde	1	86.23	0.0005	ND	NLE
4,4'-DDT	1	86.23	0.0012	0.002	2
Endosulfan-Sulfate	1	86.23	0.0004	ND	NLE
gamma -Chlordane	1	86.23	0.0005	ND	NLE
alpha-Chlordane	1	86.23	0.0005	ND	NLE
Toxaphene	1	86.23	0.0003	ND	0.1
Arochlor 1016	1	86.23	0.0119	ND	0.49
Arochlor 1221	1	86.23	0.0219	ND	0.49
Arochlor 1232	1	86.23	0.0149	ND	0.49
Arochlor 1242	1	86.23	0.0170	ND	0.49
Arochlor 1248	1	86.23	0.0068	ND	0.49
Arochlor 1254	1	86.23	0.0042	ND	0.49
Arochlor 1260	1	86.23	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/6/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	95

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.38	0.0003	ND	NLE
beta-BHC	1	89.38	0.0003	ND	NLE
gamma-BHC	1	89.38	0.0004	ND	0.52
delta-BHC	1	89.38	0.0004	ND	NLE
Heptachlor	1	89.38	0.0003	ND	0.15
Aldrin	1	89.38	0.0004	ND	0.04
Heptachlor Epoxide	1	89.38	0.0007	ND	NLE
Endosulfan I	1	89.38	0.0005	ND	NLE
4,4'-DDE	1	89.38	0.0004	0.087	2
Dieldrin	1	89.38	0.0005	ND	0.042
Endrin	1	89.38	0.0005	ND	17
Endosulfan II	1	89.38	0.0004	ND	NLE
4,4'-DDD	2	89.38	0.0013	0.124	3
Endrin Aldehyde	1	89.38	0.0005	ND	NLE
4,4'-DDT	2	89.38	0.0024	0.157	2
Endosulfan-Sulfate	1	89.38	0.0004	ND	NLE
gamma -Chlordane	1	89.38	0.0005	ND	NLE
alpha-Chlordane	1	89.38	0.0005	ND	NLE
Toxaphene	1	89.38	0.0003	ND	0.1
Arochlor 1016	1	89.38	0.0122	ND	0.49
Arochlor 1221	1	89.38	0.0225	ND	0.49
Arochlor 1232	1	89.38	0.0153	ND	0.49
Arochlor 1242	1	89.38	0.0175	ND	0.49
Arochlor 1248	1	89.38	0.0070	ND	0.49
Arochlor 1254	1	89.38	0.0044	ND	0.49
Arochlor 1260	1	89.38	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/6/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	96

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	80.91	0.0004	ND	NLE
beta-BHC	1	80.91	0.0004	ND	NLE
gamma-BHC	1	80.91	0.0005	ND	0.52
delta-BHC	1	80.91	0.0005	ND	NLE
Heptachlor	1	80.91	0.0004	ND	0.15
Aldrin	1	80.91	0.0005	ND	0.04
Heptachlor Epoxide	1	80.91	0.0007	ND	NLE
Endosulfan I	1	80.91	0.0006	ND	NLE
4,4'-DDE	20	80.91	0.0097	0.492	2
Dieldrin	1	80.91	0.0006	ND	0.042
Endrin	1	80.91	0.0006	ND	17
Endosulfan II	1	80.91	0.0005	ND	NLE
4,4'-DDD	20	80.91	0.0146	1.165	3
Endrin Aldehyde	1	80.91	0.0006	ND	NLE
4,4'-DDT	20	80.91	0.0267	0.699	2
Endosulfan-Sulfate	1	80.91	0.0005	ND	NLE
gamma -Chlordane	1	80.91	0.0006	ND	NLE
alpha-Chlordane	1	80.91	0.0006	ND	NLE
Toxaphene	1	80.91	0.0004	ND	0.1
Arochlor 1016	1	80.91	0.0136	ND	0.49
Arochlor 1221	1	80.91	0.0250	ND	0.49
Arochlor 1232	1	80.91	0.0170	ND	0.49
Arochlor 1242	1	80.91	0.0194	ND	0.49
Arochlor 1248	1	80.91	0.0078	ND	0.49
Arochlor 1254	1	80.91	0.0049	ND	0.49
Arochlor 1260	1	80.91	0.0044	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/6/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	97

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.57	0.0003	ND	NLE
beta-BHC	1	83.57	0.0003	ND	NLE
gamma-BHC	1	83.57	0.0005	ND	0.52
delta-BHC	1	83.57	0.0005	ND	NLE
Heptachlor	1	83.57	0.0003	ND	0.15
Aldrin	1	83.57	0.0005	ND	0.04
Heptachlor Epoxide	1	83.57	0.0007	ND	NLE
Endosulfan I	1	83.57	0.0006	ND	NLE
4,4'-DDE	1	83.57	0.0005	0.003	2
Dieldrin	1	83.57	0.0006	ND	0.042
Endrin	1	83.57	0.0006	ND	17
Endosulfan II	1	83.57	0.0005	ND	NLE
4,4'-DDD	1	83.57	0.0007	ND	3
Endrin Aldehyde	1	83.57	0.0006	ND	NLE
4,4'-DDT	1	83.57	0.0013	0.014	2
Endosulfan-Sulfate	1	83.57	0.0005	ND	NLE
gamma -Chlordane	1	83.57	0.0006	ND	NLE
alpha-Chlordane	1	83.57	0.0006	ND	NLE
Toxaphene	1	83.57	0.0003	ND	0.1
Arochlor 1016	1	83.57	0.0129	ND	0.49
Arochlor 1221	1	83.57	0.0237	ND	0.49
Arochlor 1232	1	83.57	0.0161	ND	0.49
Arochlor 1242	1	83.57	0.0184	ND	0.49
Arochlor 1248	1	83.57	0.0074	ND	0.49
Arochlor 1254	1	83.57	0.0046	ND	0.49
Arochlor 1260	1	83.57	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	98

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.42	0.0003	ND	NLE
beta-BHC	1	89.42	0.0003	ND	NLE
gamma-BHC	1	89.42	0.0004	ND	0.52
delta-BHC	1	89.42	0.0004	ND	NLE
Heptachlor	1	89.42	0.0003	ND	0.15
Aldrin	1	89.42	0.0004	ND	0.04
Heptachlor Epoxide	1	89.42	0.0006	ND	NLE
Endosulfan I	1	89.42	0.0005	ND	NLE
4,4'-DDE	1	89.42	0.0004	0.045	2
Dieldrin	1	89.42	0.0005	0.002	0.042
Endrin	1	89.42	0.0005	ND	17
Endosulfan II	1	89.42	0.0004	ND	NLE
4,4'-DDD	1	89.42	0.0006	0.069	3
Endrin Aldehyde	1	89.42	0.0005	ND	NLE
4,4'-DDT	2	89.42	0.0023	0.148	2
Endosulfan-Sulfate	1	89.42	0.0004	ND	NLE
gamma -Chlordane	1	89.42	0.0005	ND	NLE
alpha-Chlordane	1	89.42	0.0005	ND	NLE
Toxaphene	1	89.42	0.0003	ND	0.1
Arochlor 1016	1	89.42	0.0118	ND	0.49
Arochlor 1221	1	89.42	0.0218	ND	0.49
Arochlor 1232	1	89.42	0.0148	ND	0.49
Arochlor 1242	1	89.42	0.0169	ND	0.49
Arochlor 1248	1	89.42	0.0068	ND	0.49
Arochlor 1254	1	89.42	0.0042	ND	0.49
Arochlor 1260	1	89.42	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	99

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	93.35	0.0003	ND	NLE
beta-BHC	1	93.35	0.0003	ND	NLE
gamma-BHC	1	93.35	0.0004	ND	0.52
delta-BHC	1	93.35	0.0004	ND	NLE
Heptachlor	1	93.35	0.0003	ND	0.15
Aldrin	1	93.35	0.0004	ND	0.04
Heptachlor Epoxide	1	93.35	0.0006	ND	NLE
Endosulfan I	1	93.35	0.0005	ND	NLE
4,4'-DDE	1	93.35	0.0004	0.021	2
Dieldrin	1	93.35	0.0005	ND	0.042
Endrin	1	93.35	0.0005	ND	17
Endosulfan II	1	93.35	0.0004	ND	NLE
4,4'-DDD	1	93.35	0.0006	0.006	3
Endrin Aldehyde	1	93.35	0.0005	ND	NLE
4,4'-DDT	1	93.35	0.0011	0.006	2
Endosulfan-Sulfate	1	93.35	0.0004	ND	NLE
gamma -Chlordane	1	93.35	0.0005	ND	NLE
alpha-Chlordane	1	93.35	0.0005	ND	NLE
Toxaphene	1	93.35	0.0003	ND	0.1
Arochlor 1016	1	93.35	0.0109	ND	0.49
Arochlor 1221	1	93.35	0.0201	ND	0.49
Arochlor 1232	1	93.35	0.0136	ND	0.49
Arochlor 1242	1	93.35	0.0156	ND	0.49
Arochlor 1248	1	93.35	0.0062	ND	0.49
Arochlor 1254	1	93.35	0.0039	ND	0.49
Arochlor 1260	1	93.35	0.0035	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	100

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.55	0.0004	ND	NLE
beta-BHC	1	84.55	0.0004	ND	NLE
gamma-BHC	1	84.55	0.0005	ND	0.52
delta-BHC	1	84.55	0.0005	ND	NLE
Heptachlor	1	84.55	0.0004	ND	0.15
Aldrin	1	84.55	0.0005	ND	0.04
Heptachlor Epoxide	1	84.55	0.0007	ND	NLE
Endosulfan I	1	84.55	0.0006	ND	NLE
4,4'-DDE	1	84.55	0.0005	0.012	2
Dieldrin	1	84.55	0.0006	ND	0.042
Endrin	1	84.55	0.0006	ND	17
Endosulfan II	1	84.55	0.0005	ND	NLE
4,4'-DDD	1	84.55	0.0007	0.011	3
Endrin Aldehyde	1	84.55	0.0006	ND	NLE
4,4'-DDT	1	84.55	0.0013	0.007	2
Endosulfan-Sulfate	1	84.55	0.0005	ND	NLE
gamma -Chlordane	1	84.55	0.0006	ND	NLE
alpha-Chlordane	1	84.55	0.0006	ND	NLE
Toxaphene	1	84.55	0.0004	ND	0.1
Arochlor 1016	1	84.55	0.0131	ND	0.49
Arochlor 1221	1	84.55	0.0241	ND	0.49
Arochlor 1232	1	84.55	0.0164	ND	0.49
Arochlor 1242	1	84.55	0.0187	ND	0.49
Arochlor 1248	1	84.55	0.0075	ND	0.49
Arochlor 1254	1	84.55	0.0047	ND	0.49
Arochlor 1260	1	84.55	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.26
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	101

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.89	0.0003	ND	NLE
beta-BHC	1	85.89	0.0003	ND	NLE
gamma-BHC	1	85.89	0.0005	ND	0.52
delta-BHC	1	85.89	0.0005	ND	NLE
Heptachlor	1	85.89	0.0003	ND	0.15
Aldrin	1	85.89	0.0005	ND	0.04
Heptachlor Epoxide	1	85.89	0.0007	ND	NLE
Endosulfan I	1	85.89	0.0006	ND	NLE
4,4'-DDE	1	85.89	0.0005	ND	2
Dieldrin	1	85.89	0.0006	ND	0.042
Endrin	1	85.89	0.0006	ND	17
Endosulfan II	1	85.89	0.0005	ND	NLE
4,4'-DDD	1	85.89	0.0007	ND	3
Endrin Aldehyde	1	85.89	0.0006	ND	NLE
4,4'-DDT	1	85.89	0.0013	ND	2
Endosulfan-Sulfate	1	85.89	0.0005	ND	NLE
gamma -Chlordane	1	85.89	0.0006	ND	NLE
alpha-Chlordane	1	85.89	0.0006	ND	NLE
Toxaphene	1	85.89	0.0003	ND	0.1
Arochlor 1016	1	85.89	0.0128	ND	0.49
Arochlor 1221	1	85.89	0.0236	ND	0.49
Arochlor 1232	1	85.89	0.0160	ND	0.49
Arochlor 1242	1	85.89	0.0183	ND	0.49
Arochlor 1248	1	85.89	0.0073	ND	0.49
Arochlor 1254	1	85.89	0.0046	ND	0.49
Arochlor 1260	1	85.89	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4762.28
	DPW. SELFM-PW-EV	**Date Rec'd:**	8/31/99
	Bldg. 173	**Extraction Date:**	9/3/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/7/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	102

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.67	0.0004	ND	NLE
beta-BHC	1	84.67	0.0004	ND	NLE
gamma-BHC	1	84.67	0.0005	ND	0.52
delta-BHC	1	84.67	0.0005	ND	NLE
Heptachlor	1	84.67	0.0004	ND	0.15
Aldrin	1	84.67	0.0005	ND	0.04
Heptachlor Epoxide	1	84.67	0.0007	ND	NLE
Endosulfan I	1	84.67	0.0006	ND	NLE
4,4'-DDE	1	84.67	0.0005	0.010	2
Dieldrin	1	84.67	0.0006	ND	0.042
Endrin	1	84.67	0.0006	ND	17
Endosulfan II	1	84.67	0.0005	ND	NLE
4,4'-DDD	1	84.67	0.0007	0.007	3
Endrin Aldehyde	1	84.67	0.0006	ND	NLE
4,4'-DDT	1	84.67	0.0013	ND	2
Endosulfan-Sulfate	1	84.67	0.0005	ND	NLE
gamma -Chlordane	1	84.67	0.0006	ND	NLE
alpha-Chlordane	1	84.67	0.0006	ND	NLE
Toxaphene	1	84.67	0.0004	ND	0.1
Arochlor 1016	1	84.67	0.0131	ND	0.49
Arochlor 1221	1	84.67	0.0242	ND	0.49
Arochlor 1232	1	84.67	0.0164	ND	0.49
Arochlor 1242	1	84.67	0.0188	ND	0.49
Arochlor 1248	1	84.67	0.0075	ND	0.49
Arochlor 1254	1	84.67	0.0047	ND	0.49
Arochlor 1260	1	84.67	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	103

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.49	0.0003	ND	NLE
beta-BHC	1	87.49	0.0003	ND	NLE
gamma-BHC	1	87.49	0.0004	ND	0.52
delta-BHC	1	87.49	0.0004	ND	NLE
Heptachlor	1	87.49	0.0003	ND	0.15
Aldrin	1	87.49	0.0004	ND	0.04
Heptachlor Epoxide	1	87.49	0.0007	ND	NLE
Endosulfan I	1	87.49	0.0005	ND	NLE
4,4'-DDE	10	87.49	0.0043	0.316	2
Dieldrin	1	87.49	0.0005	ND	0.042
Endrin	1	87.49	0.0005	ND	17
Endosulfan II	1	87.49	0.0004	ND	NLE
4,4'-DDD	10	87.49	0.0065	0.381	3
Endrin Aldehyde	1	87.49	0.0005	ND	NLE
4,4'-DDT	10	87.49	0.0119	0.380	2
Endosulfan-Sulfate	1	87.49	0.0004	ND	NLE
gamma -Chlordane	1	87.49	0.0005	ND	NLE
alpha-Chlordane	1	87.49	0.0005	ND	NLE
Toxaphene	1	87.49	0.0003	ND	0.1
Arochlor 1016	1	87.49	0.0122	ND	0.49
Arochlor 1221	1	87.49	0.0224	ND	0.49
Arochlor 1232	1	87.49	0.0152	ND	0.49
Arochlor 1242	1	87.49	0.0174	ND	0.49
Arochlor 1248	1	87.49	0.0069	ND	0.49
Arochlor 1254	1	87.49	0.0043	ND	0.49
Arochlor 1260	1	87.49	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	104

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	92.82	0.0003	ND	NLE
beta-BHC	1	92.82	0.0003	ND	NLE
gamma-BHC	1	92.82	0.0004	ND	0.52
delta-BHC	1	92.82	0.0004	ND	NLE
Heptachlor	1	92.82	0.0003	ND	0.15
Aldrin	1	92.82	0.0004	ND	0.04
Heptachlor Epoxide	1	92.82	0.0006	ND	NLE
Endosulfan I	1	92.82	0.0005	ND	NLE
4,4'-DDE	1	92.82	0.0004	0.010	2
Dieldrin	1	92.82	0.0005	ND	0.042
Endrin	1	92.82	0.0005	ND	17
Endosulfan II	1	92.82	0.0004	ND	NLE
4,4'-DDD	1	92.82	0.0006	ND	3
Endrin Aldehyde	1	92.82	0.0005	ND	NLE
4,4'-DDT	1	92.82	0.0011	0.051	2
Endosulfan-Sulfate	1	92.82	0.0004	ND	NLE
gamma -Chlordane	1	92.82	0.0005	ND	NLE
alpha-Chlordane	1	92.82	0.0005	ND	NLE
Toxaphene	1	92.82	0.0003	ND	0.1
Arochlor 1016	1	92.82	0.0110	ND	0.49
Arochlor 1221	1	92.82	0.0202	ND	0.49
Arochlor 1232	1	92.82	0.0138	ND	0.49
Arochlor 1242	1	92.82	0.0157	ND	0.49
Arochlor 1248	1	92.82	0.0063	ND	0.49
Arochlor 1254	1	92.82	0.0039	ND	0.49
Arochlor 1260	1	92.82	0.0035	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	105

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	94.31	0.0003	ND	NLE
beta-BHC	1	94.31	0.0003	ND	NLE
gamma-BHC	1	94.31	0.0004	ND	0.52
delta-BHC	1	94.31	0.0004	ND	NLE
Heptachlor	1	94.31	0.0003	ND	0.15
Aldrin	1	94.31	0.0004	ND	0.04
Heptachlor Epoxide	1	94.31	0.0006	ND	NLE
Endosulfan I	1	94.31	0.0005	ND	NLE
4,4'-DDE	1	94.31	0.0004	0.060	2
Dieldrin	1	94.31	0.0005	ND	0.042
Endrin	1	94.31	0.0005	ND	17
Endosulfan II	1	94.31	0.0004	ND	NLE
4,4'-DDD	1	94.31	0.0006	0.081	3
Endrin Aldehyde	1	94.31	0.0005	ND	NLE
4,4'-DDT	10	94.31	0.0116	0.231	2
Endosulfan-Sulfate	1	94.31	0.0004	ND	NLE
gamma -Chlordane	1	94.31	0.0005	ND	NLE
alpha-Chlordane	1	94.31	0.0005	ND	NLE
Toxaphene	1	94.31	0.0003	ND	0.1
Arochlor 1016	1	94.31	0.0118	ND	0.49
Arochlor 1221	1	94.31	0.0218	ND	0.49
Arochlor 1232	1	94.31	0.0148	ND	0.49
Arochlor 1242	1	94.31	0.0169	ND	0.49
Arochlor 1248	1	94.31	0.0068	ND	0.49
Arochlor 1254	1	94.31	0.0042	ND	0.49
Arochlor 1260	1	94.31	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	106

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.11	0.0003	ND	NLE
beta-BHC	1	85.11	0.0003	ND	NLE
gamma-BHC	1	85.11	0.0004	ND	0.52
delta-BHC	1	85.11	0.0004	ND	NLE
Heptachlor	1	85.11	0.0003	ND	0.15
Aldrin	1	85.11	0.0004	ND	0.04
Heptachlor Epoxide	1	85.11	0.0006	ND	NLE
Endosulfan I	1	85.11	0.0005	ND	NLE
4,4'-DDE	1	85.11	0.0004	0.076	2
Dieldrin	1	85.11	0.0005	ND	0.042
Endrin	1	85.11	0.0005	ND	17
Endosulfan II	1	85.11	0.0004	ND	NLE
4,4'-DDD	1	85.11	0.0006	0.050	3
Endrin Aldehyde	1	85.11	0.0005	ND	NLE
4,4'-DDT	1	85.11	0.0012	0.085	2
Endosulfan-Sulfate	1	85.11	0.0004	ND	NLE
gamma -Chlordane	1	85.11	0.0005	ND	NLE
alpha-Chlordane	1	85.11	0.0005	ND	NLE
Toxaphene	1	85.11	0.0003	ND	0.1
Arochlor 1016	1	85.11	0.0121	ND	0.49
Arochlor 1221	1	85.11	0.0222	ND	0.49
Arochlor 1232	1	85.11	0.0151	ND	0.49
Arochlor 1242	1	85.11	0.0173	ND	0.49
Arochlor 1248	1	85.11	0.0069	ND	0.49
Arochlor 1254	1	85.11	0.0043	ND	0.49
Arochlor 1260	1	85.11	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	107

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.70	0.0003	ND	NLE
beta-BHC	1	87.70	0.0003	ND	NLE
gamma-BHC	1	87.70	0.0004	ND	0.52
delta-BHC	1	87.70	0.0004	ND	NLE
Heptachlor	1	87.70	0.0003	ND	0.15
Aldrin	1	87.70	0.0004	ND	0.04
Heptachlor Epoxide	1	87.70	0.0007	ND	NLE
Endosulfan I	1	87.70	0.0006	ND	NLE
4,4'-DDE	1	87.70	0.0004	0.007	2
Dieldrin	1	87.70	0.0006	ND	0.042
Endrin	1	87.70	0.0006	ND	17
Endosulfan II	1	87.70	0.0004	ND	NLE
4,4'-DDD	1	87.70	0.0007	0.003	3
Endrin Aldehyde	1	87.70	0.0006	ND	NLE
4,4'-DDT	1	87.70	0.0012	0.007	2
Endosulfan-Sulfate	1	87.70	0.0004	ND	NLE
gamma -Chlordane	1	87.70	0.0006	ND	NLE
alpha-Chlordane	1	87.70	0.0006	ND	NLE
Toxaphene	1	87.70	0.0003	ND	0.1
Arochlor 1016	1	87.70	0.0125	ND	0.49
Arochlor 1221	1	87.70	0.0231	ND	0.49
Arochlor 1232	1	87.70	0.0157	ND	0.49
Arochlor 1242	1	87.70	0.0179	ND	0.49
Arochlor 1248	1	87.70	0.0072	ND	0.49
Arochlor 1254	1	87.70	0.0045	ND	0.49
Arochlor 1260	1	87.70	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/15/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	108

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.54	0.0003	ND	NLE
beta-BHC	1	87.54	0.0003	ND	NLE
gamma-BHC	1	87.54	0.0004	ND	0.52
delta-BHC	1	87.54	0.0004	ND	NLE
Heptachlor	1	87.54	0.0003	ND	0.15
Aldrin	1	87.54	0.0004	ND	0.04
Heptachlor Epoxide	1	87.54	0.0006	ND	NLE
Endosulfan I	1	87.54	0.0005	ND	NLE
4,4'-DDE	1	87.54	0.0004	ND	2
Dieldrin	1	87.54	0.0005	ND	0.042
Endrin	1	87.54	0.0005	ND	17
Endosulfan II	1	87.54	0.0004	ND	NLE
4,4'-DDD	1	87.54	0.0006	ND	3
Endrin Aldehyde	1	87.54	0.0005	ND	NLE
4,4'-DDT	1	87.54	0.0012	ND	2
Endosulfan-Sulfate	1	87.54	0.0004	ND	NLE
gamma -Chlordane	1	87.54	0.0005	ND	NLE
alpha-Chlordane	1	87.54	0.0005	ND	NLE
Toxaphene	1	87.54	0.0003	ND	0.1
Arochlor 1016	1	87.54	0.0121	ND	0.49
Arochlor 1221	1	87.54	0.0222	ND	0.49
Arochlor 1232	1	87.54	0.0151	ND	0.49
Arochlor 1242	1	87.54	0.0173	ND	0.49
Arochlor 1248	1	87.54	0.0069	ND	0.49
Arochlor 1254	1	87.54	0.0043	ND	0.49
Arochlor 1260	1	87.54	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	109

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.31	0.0003	ND	NLE
beta-BHC	1	84.31	0.0003	ND	NLE
gamma-BHC	1	84.31	0.0004	ND	0.52
delta-BHC	1	84.31	0.0004	ND	NLE
Heptachlor	1	84.31	0.0003	ND	0.15
Aldrin	1	84.31	0.0004	ND	0.04
Heptachlor Epoxide	1	84.31	0.0006	ND	NLE
Endosulfan I	1	84.31	0.0005	ND	NLE
4,4'-DDE	20	84.31	0.0086	0.810	2
Dieldrin	1	84.31	0.0005	0.002	0.042
Endrin	1	84.31	0.0005	ND	17
Endosulfan II	1	84.31	0.0004	ND	NLE
4,4'-DDD	20	84.31	0.0130	1.031	3
Endrin Aldehyde	1	84.31	0.0005	ND	NLE
4,4'-DDT	1	84.31	0.0012	0.030	2
Endosulfan-Sulfate	1	84.31	0.0004	ND	NLE
gamma -Chlordane	1	84.31	0.0005	ND	NLE
alpha-Chlordane	1	84.31	0.0005	ND	NLE
Toxaphene	1	84.31	0.0003	ND	0.1
Arochlor 1016	1	84.31	0.0121	ND	0.49
Arochlor 1221	1	84.31	0.0222	ND	0.49
Arochlor 1232	1	84.31	0.0151	ND	0.49
Arochlor 1242	1	84.31	0.0173	ND	0.49
Arochlor 1248	1	84.31	0.0069	ND	0.49
Arochlor 1254	1	84.31	0.0043	ND	0.49
Arochlor 1260	1	84.31	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army DPW. SELFM-PW-EV Bldg. 173 Ft. Monmouth, NJ 07703	**Lab. ID # :** **Date Rec'd:** **Extraction Date:** **Analysis Date:**	4774.16 9/7/99 9/10/99 10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	110

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.39	0.0003	ND	NLE
beta-BHC	1	91.39	0.0003	ND	NLE
gamma-BHC	1	91.39	0.0004	ND	0.52
delta-BHC	1	91.39	0.0004	ND	NLE
Heptachlor	1	91.39	0.0003	ND	0.15
Aldrin	1	91.39	0.0004	ND	0.04
Heptachlor Epoxide	1	91.39	0.0006	ND	NLE
Endosulfan I	1	91.39	0.0005	ND	NLE
4,4'-DDE	1	91.39	0.0004	0.064	2
Dieldrin	1	91.39	0.0005	ND	0.042
Endrin	1	91.39	0.0005	ND	17
Endosulfan II	1	91.39	0.0004	ND	NLE
4,4'-DDD	1	91.39	0.0006	0.084	3
Endrin Aldehyde	1	91.39	0.0005	ND	NLE
4,4'-DDT	1	91.39	0.0011	0.061	2
Endosulfan-Sulfate	1	91.39	0.0004	ND	NLE
gamma -Chlordane	1	91.39	0.0005	ND	NLE
alpha-Chlordane	1	91.39	0.0005	ND	NLE
Toxaphene	1	91.39	0.0003	ND	0.1
Arochlor 1016	1	91.39	0.0114	ND	0.49
Arochlor 1221	1	91.39	0.0210	ND	0.49
Arochlor 1232	1	91.39	0.0143	ND	0.49
Arochlor 1242	1	91.39	0.0163	ND	0.49
Arochlor 1248	1	91.39	0.0065	ND	0.49
Arochlor 1254	1	91.39	0.0041	ND	0.49
Arochlor 1260	1	91.39	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	111

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.92	0.0003	ND	NLE
beta-BHC	1	90.92	0.0003	ND	NLE
gamma-BHC	1	90.92	0.0004	ND	0.52
delta-BHC	1	90.92	0.0004	ND	NLE
Heptachlor	1	90.92	0.0003	ND	0.15
Aldrin	1	90.92	0.0004	ND	0.04
Heptachlor Epoxide	1	90.92	0.0006	ND	NLE
Endosulfan I	1	90.92	0.0005	ND	NLE
4,4'-DDE	1	90.92	0.0004	0.095	2
Dieldrin	1	90.92	0.0005	ND	0.042
Endrin	1	90.92	0.0005	ND	17
Endosulfan II	1	90.92	0.0004	ND	NLE
4,4'-DDD	1	90.92	0.0006	0.062	3
Endrin Aldehyde	1	90.92	0.0005	ND	NLE
4,4'-DDT	1	90.92	0.0012	0.065	2
Endosulfan-Sulfate	1	90.92	0.0004	ND	NLE
gamma -Chlordane	1	90.92	0.0005	ND	NLE
alpha-Chlordane	1	90.92	0.0005	ND	NLE
Toxaphene	1	90.92	0.0003	ND	0.1
Arochlor 1016	1	90.92	0.0121	ND	0.49
Arochlor 1221	1	90.92	0.0222	ND	0.49
Arochlor 1232	1	90.92	0.0151	ND	0.49
Arochlor 1242	1	90.92	0.0173	ND	0.49
Arochlor 1248	1	90.92	0.0069	ND	0.49
Arochlor 1254	1	90.92	0.0043	ND	0.49
Arochlor 1260	1	90.92	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	112

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	79.18	0.0004	ND	NLE
beta-BHC	1	79.18	0.0004	ND	NLE
gamma-BHC	1	79.18	0.0005	ND	0.52
delta-BHC	1	79.18	0.0005	ND	NLE
Heptachlor	1	79.18	0.0004	ND	0.15
Aldrin	1	79.18	0.0005	ND	0.04
Heptachlor Epoxide	1	79.18	0.0007	ND	NLE
Endosulfan I	1	79.18	0.0006	ND	NLE
4,4'-DDE	1	79.18	0.0005	0.022	2
Dieldrin	1	79.18	0.0006	ND	0.042
Endrin	1	79.18	0.0006	ND	17
Endosulfan II	1	79.18	0.0005	ND	NLE
4,4'-DDD	1	79.18	0.0007	0.057	3
Endrin Aldehyde	1	79.18	0.0006	ND	NLE
4,4'-DDT	1	79.18	0.0014	0.013	2
Endosulfan-Sulfate	1	79.18	0.0005	ND	NLE
gamma -Chlordane	1	79.18	0.0006	ND	NLE
alpha-Chlordane	1	79.18	0.0006	ND	NLE
Toxaphene	1	79.18	0.0004	ND	0.1
Arochlor 1016	1	79.18	0.0140	ND	0.49
Arochlor 1221	1	79.18	0.0257	ND	0.49
Arochlor 1232	1	79.18	0.0175	ND	0.49
Arochlor 1242	1	79.18	0.0199	ND	0.49
Arochlor 1248	1	79.18	0.0080	ND	0.49
Arochlor 1254	1	79.18	0.0050	ND	0.49
Arochlor 1260	1	79.18	0.0045	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4774.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/7/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	113

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.37	0.0003	ND	NLE
beta-BHC	1	87.37	0.0003	ND	NLE
gamma-BHC	1	87.37	0.0004	ND	0.52
delta-BHC	1	87.37	0.0004	ND	NLE
Heptachlor	1	87.37	0.0003	ND	0.15
Aldrin	1	87.37	0.0004	ND	0.04
Heptachlor Epoxide	1	87.37	0.0006	ND	NLE
Endosulfan I	1	87.37	0.0005	ND	NLE
4,4'-DDE	1	87.37	0.0004	0.069	2
Dieldrin	1	87.37	0.0005	ND	0.042
Endrin	1	87.37	0.0005	ND	17
Endosulfan II	1	87.37	0.0004	ND	NLE
4,4'-DDD	2	87.37	0.0013	0.138	3
Endrin Aldehyde	1	87.37	0.0005	ND	NLE
4,4'-DDT	1	87.37	0.0012	0.060	2
Endosulfan-Sulfate	1	87.37	0.0004	ND	NLE
gamma -Chlordane	1	87.37	0.0005	ND	NLE
alpha-Chlordane	1	87.37	0.0005	ND	NLE
Toxaphene	1	87.37	0.0003	ND	0.1
Arochlor 1016	1	87.37	0.0119	ND	0.49
Arochlor 1221	1	87.37	0.0220	ND	0.49
Arochlor 1232	1	87.37	0.0149	ND	0.49
Arochlor 1242	1	87.37	0.0171	ND	0.49
Arochlor 1248	1	87.37	0.0068	ND	0.49
Arochlor 1254	1	87.37	0.0043	ND	0.49
Arochlor 1260	1	87.37	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	114

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.31	0.0003	ND	NLE
beta-BHC	1	85.31	0.0003	ND	NLE
gamma-BHC	1	85.31	0.0004	ND	0.52
delta-BHC	1	85.31	0.0004	ND	NLE
Heptachlor	1	85.31	0.0003	ND	0.15
Aldrin	1	85.31	0.0004	ND	0.04
Heptachlor Epoxide	1	85.31	0.0007	ND	NLE
Endosulfan I	1	85.31	0.0006	ND	NLE
4,4'-DDE	1	85.31	0.0004	0.062	2
Dieldrin	1	85.31	0.0006	ND	0.042
Endrin	1	85.31	0.0006	ND	17
Endosulfan II	1	85.31	0.0004	ND	NLE
4,4'-DDD	1	85.31	0.0007	0.008	3
Endrin Aldehyde	1	85.31	0.0006	ND	NLE
4,4'-DDT	1	85.31	0.0012	0.016	2
Endosulfan-Sulfate	1	85.31	0.0004	ND	NLE
gamma -Chlordane	1	85.31	0.0006	ND	NLE
alpha-Chlordane	1	85.31	0.0006	ND	NLE
Toxaphene	1	85.31	0.0003	ND	0.1
Arochlor 1016	1	85.31	0.0125	ND	0.49
Arochlor 1221	1	85.31	0.0231	ND	0.49
Arochlor 1232	1	85.31	0.0157	ND	0.49
Arochlor 1242	1	85.31	0.0179	ND	0.49
Arochlor 1248	1	85.31	0.0072	ND	0.49
Arochlor 1254	1	85.31	0.0045	ND	0.49
Arochlor 1260	1	85.31	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	115

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.44	0.0003	ND	NLE
beta-BHC	1	90.44	0.0003	ND	NLE
gamma-BHC	1	90.44	0.0004	ND	0.52
delta-BHC	1	90.44	0.0004	ND	NLE
Heptachlor	1	90.44	0.0003	ND	0.15
Aldrin	1	90.44	0.0004	ND	0.04
Heptachlor Epoxide	1	90.44	0.0006	ND	NLE
Endosulfan I	1	90.44	0.0005	ND	NLE
4,4'-DDE	1	90.44	0.0004	0.012	2
Dieldrin	1	90.44	0.0005	ND	0.042
Endrin	1	90.44	0.0005	ND	17
Endosulfan II	1	90.44	0.0004	ND	NLE
4,4'-DDD	1	90.44	0.0006	0.085	3
Endrin Aldehyde	1	90.44	0.0005	ND	NLE
4,4'-DDT	1	90.44	0.0011	0.019	2
Endosulfan-Sulfate	1	90.44	0.0004	ND	NLE
gamma -Chlordane	1	90.44	0.0005	ND	NLE
alpha-Chlordane	1	90.44	0.0005	ND	NLE
Toxaphene	1	90.44	0.0003	ND	0.1
Arochlor 1016	1	90.44	0.0115	ND	0.49
Arochlor 1221	1	90.44	0.0211	ND	0.49
Arochlor 1232	1	90.44	0.0143	ND	0.49
Arochlor 1242	1	90.44	0.0164	ND	0.49
Arochlor 1248	1	90.44	0.0065	ND	0.49
Arochlor 1254	1	90.44	0.0041	ND	0.49
Arochlor 1260	1	90.44	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/10/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/18/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	116

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	88.24	0.0003	ND	NLE
beta-BHC	1	88.24	0.0003	ND	NLE
gamma-BHC	1	88.24	0.0004	ND	0.52
delta-BHC	1	88.24	0.0004	ND	NLE
Heptachlor	1	88.24	0.0003	ND	0.15
Aldrin	1	88.24	0.0004	ND	0.04
Heptachlor Epoxide	1	88.24	0.0007	ND	NLE
Endosulfan I	1	88.24	0.0006	ND	NLE
4,4'-DDE	1	88.24	0.0004	0.013	2
Dieldrin	1	88.24	0.0006	ND	0.042
Endrin	1	88.24	0.0006	ND	17
Endosulfan II	1	88.24	0.0004	ND	NLE
4,4'-DDD	1	88.24	0.0007	0.019	3
Endrin Aldehyde	1	88.24	0.0006	ND	NLE
4,4'-DDT	1	88.24	0.0012	0.029	2
Endosulfan-Sulfate	1	88.24	0.0004	ND	NLE
gamma -Chlordane	1	88.24	0.0006	0.005	NLE
alpha-Chlordane	1	88.24	0.0006	0.004	NLE
Toxaphene	1	88.24	0.0003	ND	0.1
Arochlor 1016	1	88.24	0.0125	ND	0.49
Arochlor 1221	1	88.24	0.0231	ND	0.49
Arochlor 1232	1	88.24	0.0157	ND	0.49
Arochlor 1242	1	88.24	0.0179	ND	0.49
Arochlor 1248	1	88.24	0.0072	ND	0.49
Arochlor 1254	1	88.24	0.0045	ND	0.49
Arochlor 1260	1	88.24	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	117

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.44	0.0003	ND	NLE
beta-BHC	1	89.44	0.0003	ND	NLE
gamma-BHC	1	89.44	0.0005	ND	0.52
delta-BHC	1	89.44	0.0005	ND	NLE
Heptachlor	1	89.44	0.0003	ND	0.15
Aldrin	1	89.44	0.0005	ND	0.04
Heptachlor Epoxide	1	89.44	0.0007	ND	NLE
Endosulfan I	1	89.44	0.0006	ND	NLE
4,4'-DDE	5	89.44	0.0023	0.131	2
Dieldrin	1	89.44	0.0006	ND	0.042
Endrin	1	89.44	0.0006	ND	17
Endosulfan II	1	89.44	0.0005	ND	NLE
4,4'-DDD	5	89.44	0.0034	0.183	3
Endrin Aldehyde	1	89.44	0.0006	ND	NLE
4,4'-DDT	1	89.44	0.0012	0.027	2
Endosulfan-Sulfate	1	89.44	0.0005	ND	NLE
gamma -Chlordane	1	89.44	0.0006	ND	NLE
alpha-Chlordane	1	89.44	0.0006	ND	NLE
Toxaphene	1	89.44	0.0003	ND	0.1
Arochlor 1016	1	89.44	0.0126	ND	0.49
Arochlor 1221	1	89.44	0.0232	ND	0.49
Arochlor 1232	1	89.44	0.0158	ND	0.49
Arochlor 1242	1	89.44	0.0181	ND	0.49
Arochlor 1248	1	89.44	0.0072	ND	0.49
Arochlor 1254	1	89.44	0.0045	ND	0.49
Arochlor 1260	1	89.44	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	118

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.09	0.0004	ND	NLE
beta-BHC	1	83.09	0.0004	ND	NLE
gamma-BHC	1	83.09	0.0005	ND	0.52
delta-BHC	1	83.09	0.0005	ND	NLE
Heptachlor	1	83.09	0.0004	ND	0.15
Aldrin	1	83.09	0.0005	ND	0.04
Heptachlor Epoxide	1	83.09	0.0007	ND	NLE
Endosulfan I	1	83.09	0.0006	ND	NLE
4,4'-DDE	1	83.09	0.0005	0.015	2
Dieldrin	1	83.09	0.0006	ND	0.042
Endrin	1	83.09	0.0006	ND	17
Endosulfan II	1	83.09	0.0005	ND	NLE
4,4'-DDD	1	83.09	0.0007	0.024	3
Endrin Aldehyde	1	83.09	0.0006	ND	NLE
4,4'-DDT	1	83.09	0.0013	0.013	2
Endosulfan-Sulfate	1	83.09	0.0005	ND	NLE
gamma -Chlordane	1	83.09	0.0006	ND	NLE
alpha-Chlordane	1	83.09	0.0006	ND	NLE
Toxaphene	1	83.09	0.0004	ND	0.1
Arochlor 1016	1	83.09	0.0135	ND	0.49
Arochlor 1221	1	83.09	0.0248	ND	0.49
Arochlor 1232	1	83.09	0.0169	ND	0.49
Arochlor 1242	1	83.09	0.0193	ND	0.49
Arochlor 1248	1	83.09	0.0077	ND	0.49
Arochlor 1254	1	83.09	0.0048	ND	0.49
Arochlor 1260	1	83.09	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	119

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	97.49	0.0003	ND	NLE
beta-BHC	1	97.49	0.0003	ND	NLE
gamma-BHC	1	97.49	0.0004	ND	0.52
delta-BHC	1	97.49	0.0004	ND	NLE
Heptachlor	1	97.49	0.0003	ND	0.15
Aldrin	1	97.49	0.0004	ND	0.04
Heptachlor Epoxide	1	97.49	0.0006	ND	NLE
Endosulfan I	1	97.49	0.0005	ND	NLE
4,4'-DDE	1	97.49	0.0004	0.052	2
Dieldrin	1	97.49	0.0005	0.002	0.042
Endrin	1	97.49	0.0005	ND	17
Endosulfan II	1	97.49	0.0004	ND	NLE
4,4'-DDD	1	97.49	0.0006	0.023	3
Endrin Aldehyde	1	97.49	0.0005	ND	NLE
4,4'-DDT	2	97.49	0.0021	0.103	2
Endosulfan-Sulfate	1	97.49	0.0004	ND	NLE
gamma -Chlordane	1	97.49	0.0005	0.005	NLE
alpha-Chlordane	1	97.49	0.0005	0.003	NLE
Toxaphene	1	97.49	0.0003	ND	0.1
Arochlor 1016	1	97.49	0.0105	ND	0.49
Arochlor 1221	1	97.49	0.0194	ND	0.49
Arochlor 1232	1	97.49	0.0132	ND	0.49
Arochlor 1242	1	97.49	0.0150	ND	0.49
Arochlor 1248	1	97.49	0.0060	ND	0.49
Arochlor 1254	1	97.49	0.0038	ND	0.49
Arochlor 1260	1	97.49	0.0034	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	120

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.76	0.0003	ND	NLE
beta-BHC	1	90.76	0.0003	ND	NLE
gamma-BHC	1	90.76	0.0004	ND	0.52
delta-BHC	1	90.76	0.0004	ND	NLE
Heptachlor	1	90.76	0.0003	ND	0.15
Aldrin	1	90.76	0.0004	ND	0.04
Heptachlor Epoxide	1	90.76	0.0006	ND	NLE
Endosulfan I	1	90.76	0.0005	ND	NLE
4,4'-DDE	1	90.76	0.0004	ND	2
Dieldrin	1	90.76	0.0005	ND	0.042
Endrin	1	90.76	0.0005	ND	17
Endosulfan II	1	90.76	0.0004	ND	NLE
4,4'-DDD	1	90.76	0.0006	0.007	3
Endrin Aldehyde	1	90.76	0.0005	ND	NLE
4,4'-DDT	1	90.76	0.0012	0.006	2
Endosulfan-Sulfate	1	90.76	0.0004	ND	NLE
gamma -Chlordane	1	90.76	0.0005	ND	NLE
alpha-Chlordane	1	90.76	0.0005	ND	NLE
Toxaphene	1	90.76	0.0003	ND	0.1
Arochlor 1016	1	90.76	0.0118	ND	0.49
Arochlor 1221	1	90.76	0.0218	ND	0.49
Arochlor 1232	1	90.76	0.0148	ND	0.49
Arochlor 1242	1	90.76	0.0169	ND	0.49
Arochlor 1248	1	90.76	0.0068	ND	0.49
Arochlor 1254	1	90.76	0.0042	ND	0.49
Arochlor 1260	1	90.76	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	121

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.91	0.0003	ND	NLE
beta-BHC	1	85.91	0.0003	ND	NLE
gamma-BHC	1	85.91	0.0004	ND	0.52
delta-BHC	1	85.91	0.0004	ND	NLE
Heptachlor	1	85.91	0.0003	ND	0.15
Aldrin	1	85.91	0.0004	ND	0.04
Heptachlor Epoxide	1	85.91	0.0007	ND	NLE
Endosulfan I	1	85.91	0.0005	ND	NLE
4,4'-DDE	1	85.91	0.0004	0.041	2
Dieldrin	1	85.91	0.0005	ND	0.042
Endrin	1	85.91	0.0005	ND	17
Endosulfan II	1	85.91	0.0004	ND	NLE
4,4'-DDD	1	85.91	0.0007	0.068	3
Endrin Aldehyde	1	85.91	0.0005	ND	NLE
4,4'-DDT	1	85.91	0.0012	0.020	2
Endosulfan-Sulfate	1	85.91	0.0004	ND	NLE
gamma -Chlordane	1	85.91	0.0005	ND	NLE
alpha-Chlordane	1	85.91	0.0005	ND	NLE
Toxaphene	1	85.91	0.0003	ND	0.1
Arochlor 1016	1	85.91	0.0122	ND	0.49
Arochlor 1221	1	85.91	0.0225	ND	0.49
Arochlor 1232	1	85.91	0.0153	ND	0.49
Arochlor 1242	1	85.91	0.0175	ND	0.49
Arochlor 1248	1	85.91	0.0070	ND	0.49
Arochlor 1254	1	85.91	0.0044	ND	0.49
Arochlor 1260	1	85.91	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	122

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	80.36	0.0004	ND	NLE
beta-BHC	1	80.36	0.0004	ND	NLE
gamma-BHC	1	80.36	0.0005	ND	0.52
delta-BHC	1	80.36	0.0005	ND	NLE
Heptachlor	1	80.36	0.0004	ND	0.15
Aldrin	1	80.36	0.0005	ND	0.04
Heptachlor Epoxide	1	80.36	0.0007	ND	NLE
Endosulfan I	1	80.36	0.0006	ND	NLE
4,4'-DDE	1	80.36	0.0005	0.059	2
Dieldrin	1	80.36	0.0006	ND	0.042
Endrin	1	80.36	0.0006	ND	17
Endosulfan II	1	80.36	0.0005	ND	NLE
4,4'-DDD	1	80.36	0.0007	0.057	3
Endrin Aldehyde	1	80.36	0.0006	ND	NLE
4,4'-DDT	1	80.36	0.0013	0.057	2
Endosulfan-Sulfate	1	80.36	0.0005	ND	NLE
gamma -Chlordane	1	80.36	0.0006	ND	NLE
alpha-Chlordane	1	80.36	0.0006	ND	NLE
Toxaphene	1	80.36	0.0004	ND	0.1
Arochlor 1016	1	80.36	0.0133	ND	0.49
Arochlor 1221	1	80.36	0.0245	ND	0.49
Arochlor 1232	1	80.36	0.0166	ND	0.49
Arochlor 1242	1	80.36	0.0190	ND	0.49
Arochlor 1248	1	80.36	0.0076	ND	0.49
Arochlor 1254	1	80.36	0.0047	ND	0.49
Arochlor 1260	1	80.36	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	123

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.10	0.0003	ND	NLE
beta-BHC	1	90.10	0.0003	ND	NLE
gamma-BHC	1	90.10	0.0004	ND	0.52
delta-BHC	1	90.10	0.0004	ND	NLE
Heptachlor	1	90.10	0.0003	ND	0.15
Aldrin	1	90.10	0.0004	ND	0.04
Heptachlor Epoxide	1	90.10	0.0007	ND	NLE
Endosulfan I	1	90.10	0.0005	ND	NLE
4,4'-DDE	1	90.10	0.0004	0.015	2
Dieldrin	1	90.10	0.0005	ND	0.042
Endrin	1	90.10	0.0005	ND	17
Endosulfan II	1	90.10	0.0004	ND	NLE
4,4'-DDD	1	90.10	0.0007	0.018	3
Endrin Aldehyde	1	90.10	0.0005	ND	NLE
4,4'-DDT	1	90.10	0.0012	0.003	2
Endosulfan-Sulfate	1	90.10	0.0004	ND	NLE
gamma -Chlordane	1	90.10	0.0005	ND	NLE
alpha-Chlordane	1	90.10	0.0005	ND	NLE
Toxaphene	1	90.10	0.0003	ND	0.1
Arochlor 1016	1	90.10	0.0122	ND	0.49
Arochlor 1221	1	90.10	0.0224	ND	0.49
Arochlor 1232	1	90.10	0.0152	ND	0.49
Arochlor 1242	1	90.10	0.0174	ND	0.49
Arochlor 1248	1	90.10	0.0070	ND	0.49
Arochlor 1254	1	90.10	0.0043	ND	0.49
Arochlor 1260	1	90.10	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	124

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.93	0.0003	ND	NLE
beta-BHC	1	90.93	0.0003	ND	NLE
gamma-BHC	1	90.93	0.0004	ND	0.52
delta-BHC	1	90.93	0.0004	ND	NLE
Heptachlor	1	90.93	0.0003	ND	0.15
Aldrin	1	90.93	0.0004	ND	0.04
Heptachlor Epoxide	1	90.93	0.0006	ND	NLE
Endosulfan I	1	90.93	0.0005	ND	NLE
4,4'-DDE	1	90.93	0.0004	ND	2
Dieldrin	1	90.93	0.0005	ND	0.042
Endrin	1	90.93	0.0005	ND	17
Endosulfan II	1	90.93	0.0004	ND	NLE
4,4'-DDD	1	90.93	0.0006	ND	3
Endrin Aldehyde	1	90.93	0.0005	ND	NLE
4,4'-DDT	1	90.93	0.0011	ND	2
Endosulfan-Sulfate	1	90.93	0.0004	ND	NLE
gamma -Chlordane	1	90.93	0.0005	ND	NLE
alpha-Chlordane	1	90.93	0.0005	ND	NLE
Toxaphene	1	90.93	0.0003	ND	0.1
Arochlor 1016	1	90.93	0.0113	ND	0.49
Arochlor 1221	1	90.93	0.0208	ND	0.49
Arochlor 1232	1	90.93	0.0142	ND	0.49
Arochlor 1242	1	90.93	0.0162	ND	0.49
Arochlor 1248	1	90.93	0.0065	ND	0.49
Arochlor 1254	1	90.93	0.0040	ND	0.49
Arochlor 1260	1	90.93	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	125

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	80.28	0.0004	ND	NLE
beta-BHC	1	80.28	0.0004	ND	NLE
gamma-BHC	1	80.28	0.0005	ND	0.52
delta-BHC	1	80.28	0.0005	ND	NLE
Heptachlor	1	80.28	0.0004	ND	0.15
Aldrin	1	80.28	0.0005	ND	0.04
Heptachlor Epoxide	1	80.28	0.0007	ND	NLE
Endosulfan I	1	80.28	0.0006	ND	NLE
4,4'-DDE	1	80.28	0.0005	0.005	2
Dieldrin	1	80.28	0.0006	ND	0.042
Endrin	1	80.28	0.0006	ND	17
Endosulfan II	1	80.28	0.0005	ND	NLE
4,4'-DDD	1	80.28	0.0007	0.005	3
Endrin Aldehyde	1	80.28	0.0006	ND	NLE
4,4'-DDT	1	80.28	0.0014	0.005	2
Endosulfan-Sulfate	1	80.28	0.0005	ND	NLE
gamma -Chlordane	1	80.28	0.0006	ND	NLE
alpha-Chlordane	1	80.28	0.0006	ND	NLE
Toxaphene	1	80.28	0.0004	ND	0.1
Arochlor 1016	1	80.28	0.0140	ND	0.49
Arochlor 1221	1	80.28	0.0257	ND	0.49
Arochlor 1232	1	80.28	0.0175	ND	0.49
Arochlor 1242	1	80.28	0.0200	ND	0.49
Arochlor 1248	1	80.28	0.0080	ND	0.49
Arochlor 1254	1	80.28	0.0050	ND	0.49
Arochlor 1260	1	80.28	0.0045	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4777.26
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/8/99
	Bldg. 173	**Extraction Date:**	9/13/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/19/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12-WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	126

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.46	0.0004	ND	NLE
beta-BHC	1	83.46	0.0004	ND	NLE
gamma-BHC	1	83.46	0.0005	ND	0.52
delta-BHC	1	83.46	0.0005	ND	NLE
Heptachlor	1	83.46	0.0004	ND	0.15
Aldrin	1	83.46	0.0005	ND	0.04
Heptachlor Epoxide	1	83.46	0.0007	ND	NLE
Endosulfan I	1	83.46	0.0006	ND	NLE
4,4'-DDE	1	83.46	0.0005	ND	2
Dieldrin	1	83.46	0.0006	ND	0.042
Endrin	1	83.46	0.0006	ND	17
Endosulfan II	1	83.46	0.0005	ND	NLE
4,4'-DDD	1	83.46	0.0007	0.036	3
Endrin Aldehyde	1	83.46	0.0006	ND	NLE
4,4'-DDT	1	83.46	0.0013	0.064	2
Endosulfan-Sulfate	1	83.46	0.0005	ND	NLE
gamma -Chlordane	1	83.46	0.0006	ND	NLE
alpha-Chlordane	1	83.46	0.0006	ND	NLE
Toxaphene	1	83.46	0.0004	ND	0.1
Arochlor 1016	1	83.46	0.0133	ND	0.49
Arochlor 1221	1	83.46	0.0244	ND	0.49
Arochlor 1232	1	83.46	0.0166	ND	0.49
Arochlor 1242	1	83.46	0.0189	ND	0.49
Arochlor 1248	1	83.46	0.0076	ND	0.49
Arochlor 1254	1	83.46	0.0047	ND	0.49
Arochlor 1260	1	83.46	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	127

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.76	0.0003	ND	NLE
beta-BHC	1	89.76	0.0003	ND	NLE
gamma-BHC	1	89.76	0.0004	ND	0.52
delta-BHC	1	89.76	0.0004	ND	NLE
Heptachlor	1	89.76	0.0003	ND	0.15
Aldrin	1	89.76	0.0004	ND	0.04
Heptachlor Epoxide	1	89.76	0.0006	ND	NLE
Endosulfan I	1	89.76	0.0005	ND	NLE
4,4'-DDE	1	89.76	0.0004	0.019	2
Dieldrin	1	89.76	0.0005	ND	0.042
Endrin	1	89.76	0.0005	ND	17
Endosulfan II	1	89.76	0.0004	ND	NLE
4,4'-DDD	1	89.76	0.0006	0.013	3
Endrin Aldehyde	1	89.76	0.0005	ND	NLE
4,4'-DDT	1	89.76	0.0012	0.021	2
Endosulfan-Sulfate	1	89.76	0.0004	ND	NLE
gamma -Chlordane	1	89.76	0.0005	ND	NLE
alpha-Chlordane	1	89.76	0.0005	ND	NLE
Toxaphene	1	89.76	0.0003	ND	0.1
Arochlor 1016	1	89.76	0.0117	ND	0.49
Arochlor 1221	1	89.76	0.0216	ND	0.49
Arochlor 1232	1	89.76	0.0147	ND	0.49
Arochlor 1242	1	89.76	0.0168	ND	0.49
Arochlor 1248	1	89.76	0.0067	ND	0.49
Arochlor 1254	1	89.76	0.0042	ND	0.49
Arochlor 1260	1	89.76	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	128

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	93.89	0.0003	ND	NLE
beta-BHC	1	93.89	0.0003	ND	NLE
gamma-BHC	1	93.89	0.0004	ND	0.52
delta-BHC	1	93.89	0.0004	ND	NLE
Heptachlor	1	93.89	0.0003	ND	0.15
Aldrin	1	93.89	0.0004	ND	0.04
Heptachlor Epoxide	1	93.89	0.0006	ND	NLE
Endosulfan I	1	93.89	0.0005	ND	NLE
4,4'-DDE	1	93.89	0.0004	0.007	2
Dieldrin	1	93.89	0.0005	ND	0.042
Endrin	1	93.89	0.0005	ND	17
Endosulfan II	1	93.89	0.0004	ND	NLE
4,4'-DDD	1	93.89	0.0006	0.004	3
Endrin Aldehyde	1	93.89	0.0005	ND	NLE
4,4'-DDT	1	93.89	0.0012	0.008	2
Endosulfan-Sulfate	1	93.89	0.0004	ND	NLE
gamma -Chlordane	1	93.89	0.0005	ND	NLE
alpha-Chlordane	1	93.89	0.0005	ND	NLE
Toxaphene	1	93.89	0.0003	ND	0.1
Arochlor 1016	1	93.89	0.0120	ND	0.49
Arochlor 1221	1	93.89	0.0221	ND	0.49
Arochlor 1232	1	93.89	0.0150	ND	0.49
Arochlor 1242	1	93.89	0.0171	ND	0.49
Arochlor 1248	1	93.89	0.0069	ND	0.49
Arochlor 1254	1	93.89	0.0043	ND	0.49
Arochlor 1260	1	93.89	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	129

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	63.11	0.0005	ND	NLE
beta-BHC	1	63.11	0.0005	ND	NLE
gamma-BHC	1	63.11	0.0006	ND	0.52
delta-BHC	1	63.11	0.0006	ND	NLE
Heptachlor	1	63.11	0.0005	ND	0.15
Aldrin	1	63.11	0.0006	ND	0.04
Heptachlor Epoxide	1	63.11	0.0009	ND	NLE
Endosulfan I	1	63.11	0.0008	ND	NLE
4,4'-DDE	1	63.11	0.0006	0.010	2
Dieldrin	1	63.11	0.0008	ND	0.042
Endrin	1	63.11	0.0008	ND	17
Endosulfan II	1	63.11	0.0006	ND	NLE
4,4'-DDD	1	63.11	0.0009	0.022	3
Endrin Aldehyde	1	63.11	0.0008	ND	NLE
4,4'-DDT	1	63.11	0.0017	0.013	2
Endosulfan-Sulfate	1	63.11	0.0006	ND	NLE
gamma -Chlordane	1	63.11	0.0008	ND	NLE
alpha-Chlordane	1	63.11	0.0008	ND	NLE
Toxaphene	1	63.11	0.0005	ND	0.1
Arochlor 1016	1	63.11	0.0172	ND	0.49
Arochlor 1221	1	63.11	0.0317	ND	0.49
Arochlor 1232	1	63.11	0.0215	ND	0.49
Arochlor 1242	1	63.11	0.0246	ND	0.49
Arochlor 1248	1	63.11	0.0098	ND	0.49
Arochlor 1254	1	63.11	0.0062	ND	0.49
Arochlor 1260	1	63.11	0.0055	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	130

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.75	0.0004	ND	NLE
beta-BHC	1	83.75	0.0004	ND	NLE
gamma-BHC	1	83.75	0.0005	ND	0.52
delta-BHC	1	83.75	0.0005	ND	NLE
Heptachlor	1	83.75	0.0004	ND	0.15
Aldrin	1	83.75	0.0005	ND	0.04
Heptachlor Epoxide	1	83.75	0.0007	ND	NLE
Endosulfan I	1	83.75	0.0006	ND	NLE
4,4'-DDE	1	83.75	0.0005	ND	2
Dieldrin	1	83.75	0.0006	ND	0.042
Endrin	1	83.75	0.0006	ND	17
Endosulfan II	1	83.75	0.0005	ND	NLE
4,4'-DDD	1	83.75	0.0007	ND	3
Endrin Aldehyde	1	83.75	0.0006	ND	NLE
4,4'-DDT	1	83.75	0.0013	ND	2
Endosulfan-Sulfate	1	83.75	0.0005	ND	NLE
gamma -Chlordane	1	83.75	0.0006	ND	NLE
alpha-Chlordane	1	83.75	0.0006	ND	NLE
Toxaphene	1	83.75	0.0004	ND	0.1
Arochlor 1016	1	83.75	0.0132	ND	0.49
Arochlor 1221	1	83.75	0.0243	ND	0.49
Arochlor 1232	1	83.75	0.0165	ND	0.49
Arochlor 1242	1	83.75	0.0189	ND	0.49
Arochlor 1248	1	83.75	0.0076	ND	0.49
Arochlor 1254	1	83.75	0.0047	ND	0.49
Arochlor 1260	1	83.75	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	131

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	89.75	0.0003	ND	NLE
beta-BHC	1	89.75	0.0003	ND	NLE
gamma-BHC	1	89.75	0.0004	ND	0.52
delta-BHC	1	89.75	0.0004	ND	NLE
Heptachlor	1	89.75	0.0003	ND	0.15
Aldrin	1	89.75	0.0004	ND	0.04
Heptachlor Epoxide	1	89.75	0.0006	ND	NLE
Endosulfan I	1	89.75	0.0005	ND	NLE
4,4'-DDE	1	89.75	0.0004	0.064	2
Dieldrin	1	89.75	0.0005	ND	0.042
Endrin	1	89.75	0.0005	ND	17
Endosulfan II	1	89.75	0.0004	ND	NLE
4,4'-DDD	1	89.75	0.0006	0.067	3
Endrin Aldehyde	1	89.75	0.0005	ND	NLE
4,4'-DDT	5	89.75	0.0057	0.313	2
Endosulfan-Sulfate	1	89.75	0.0004	ND	NLE
gamma -Chlordane	1	89.75	0.0005	ND	NLE
alpha-Chlordane	1	89.75	0.0005	ND	NLE
Toxaphene	1	89.75	0.0003	ND	0.1
Arochlor 1016	1	89.75	0.0116	ND	0.49
Arochlor 1221	1	89.75	0.0213	ND	0.49
Arochlor 1232	1	89.75	0.0145	ND	0.49
Arochlor 1242	1	89.75	0.0166	ND	0.49
Arochlor 1248	1	89.75	0.0066	ND	0.49
Arochlor 1254	1	89.75	0.0041	ND	0.49
Arochlor 1260	1	89.75	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	132

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.76	0.0003	ND	NLE
beta-BHC	1	85.76	0.0003	ND	NLE
gamma-BHC	1	85.76	0.0004	ND	0.52
delta-BHC	1	85.76	0.0004	ND	NLE
Heptachlor	1	85.76	0.0003	ND	0.15
Aldrin	1	85.76	0.0004	ND	0.04
Heptachlor Epoxide	1	85.76	0.0007	ND	NLE
Endosulfan I	1	85.76	0.0005	ND	NLE
4,4'-DDE	1	85.76	0.0004	0.008	2
Dieldrin	1	85.76	0.0005	ND	0.042
Endrin	1	85.76	0.0005	ND	17
Endosulfan II	1	85.76	0.0004	ND	NLE
4,4'-DDD	1	85.76	0.0007	0.007	3
Endrin Aldehyde	1	85.76	0.0005	ND	NLE
4,4'-DDT	1	85.76	0.0012	0.004	2
Endosulfan-Sulfate	1	85.76	0.0004	ND	NLE
gamma -Chlordane	1	85.76	0.0005	ND	NLE
alpha-Chlordane	1	85.76	0.0005	ND	NLE
Toxaphene	1	85.76	0.0003	ND	0.1
Arochlor 1016	1	85.76	0.0122	ND	0.49
Arochlor 1221	1	85.76	0.0225	ND	0.49
Arochlor 1232	1	85.76	0.0153	ND	0.49
Arochlor 1242	1	85.76	0.0175	ND	0.49
Arochlor 1248	1	85.76	0.0070	ND	0.49
Arochlor 1254	1	85.76	0.0044	ND	0.49
Arochlor 1260	1	85.76	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	133

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	90.02	0.0003	ND	NLE
beta-BHC	1	90.02	0.0003	ND	NLE
gamma-BHC	1	90.02	0.0004	ND	0.52
delta-BHC	1	90.02	0.0004	ND	NLE
Heptachlor	1	90.02	0.0003	ND	0.15
Aldrin	1	90.02	0.0004	ND	0.04
Heptachlor Epoxide	1	90.02	0.0006	ND	NLE
Endosulfan I	1	90.02	0.0005	ND	NLE
4,4'-DDE	1	90.02	0.0004	0.011	2
Dieldrin	1	90.02	0.0005	ND	0.042
Endrin	1	90.02	0.0005	ND	17
Endosulfan II	1	90.02	0.0004	ND	NLE
4,4'-DDD	1	90.02	0.0006	0.009	3
Endrin Aldehyde	1	90.02	0.0005	ND	NLE
4,4'-DDT	1	90.02	0.0011	0.021	2
Endosulfan-Sulfate	1	90.02	0.0004	ND	NLE
gamma -Chlordane	1	90.02	0.0005	ND	NLE
alpha-Chlordane	1	90.02	0.0005	ND	NLE
Toxaphene	1	90.02	0.0003	ND	0.1
Arochlor 1016	1	90.02	0.0116	ND	0.49
Arochlor 1221	1	90.02	0.0214	ND	0.49
Arochlor 1232	1	90.02	0.0145	ND	0.49
Arochlor 1242	1	90.02	0.0166	ND	0.49
Arochlor 1248	1	90.02	0.0066	ND	0.49
Arochlor 1254	1	90.02	0.0041	ND	0.49
Arochlor 1260	1	90.02	0.0037	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	134

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	91.70	0.0003	ND	NLE
beta-BHC	1	91.70	0.0003	ND	NLE
gamma-BHC	1	91.70	0.0004	ND	0.52
delta-BHC	1	91.70	0.0004	ND	NLE
Heptachlor	1	91.70	0.0003	ND	0.15
Aldrin	1	91.70	0.0004	ND	0.04
Heptachlor Epoxide	1	91.70	0.0006	ND	NLE
Endosulfan I	1	91.70	0.0005	ND	NLE
4,4'-DDE	1	91.70	0.0004	0.017	2
Dieldrin	1	91.70	0.0005	ND	0.042
Endrin	1	91.70	0.0005	ND	17
Endosulfan II	1	91.70	0.0004	ND	NLE
4,4'-DDD	1	91.70	0.0006	0.014	3
Endrin Aldehyde	1	91.70	0.0005	ND	NLE
4,4'-DDT	1	91.70	0.0012	0.012	2
Endosulfan-Sulfate	1	91.70	0.0004	ND	NLE
gamma -Chlordane	1	91.70	0.0005	ND	NLE
alpha-Chlordane	1	91.70	0.0005	ND	NLE
Toxaphene	1	91.70	0.0003	ND	0.1
Arochlor 1016	1	91.70	0.0118	ND	0.49
Arochlor 1221	1	91.70	0.0218	ND	0.49
Arochlor 1232	1	91.70	0.0148	ND	0.49
Arochlor 1242	1	91.70	0.0169	ND	0.49
Arochlor 1248	1	91.70	0.0068	ND	0.49
Arochlor 1254	1	91.70	0.0042	ND	0.49
Arochlor 1260	1	91.70	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	135

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.71	0.0004	ND	NLE
beta-BHC	1	83.71	0.0004	ND	NLE
gamma-BHC	1	83.71	0.0005	ND	0.52
delta-BHC	1	83.71	0.0005	ND	NLE
Heptachlor	1	83.71	0.0004	ND	0.15
Aldrin	1	83.71	0.0005	ND	0.04
Heptachlor Epoxide	1	83.71	0.0007	ND	NLE
Endosulfan I	1	83.71	0.0006	ND	NLE
4,4'-DDE	1	83.71	0.0005	ND	2
Dieldrin	1	83.71	0.0006	ND	0.042
Endrin	1	83.71	0.0006	ND	17
Endosulfan II	1	83.71	0.0005	ND	NLE
4,4'-DDD	1	83.71	0.0007	ND	3
Endrin Aldehyde	1	83.71	0.0006	ND	NLE
4,4'-DDT	1	83.71	0.0013	ND	2
Endosulfan-Sulfate	1	83.71	0.0005	ND	NLE
gamma -Chlordane	1	83.71	0.0006	ND	NLE
alpha-Chlordane	1	83.71	0.0006	ND	NLE
Toxaphene	1	83.71	0.0004	ND	0.1
Arochlor 1016	1	83.71	0.0135	ND	0.49
Arochlor 1221	1	83.71	0.0248	ND	0.49
Arochlor 1232	1	83.71	0.0168	ND	0.49
Arochlor 1242	1	83.71	0.0192	ND	0.49
Arochlor 1248	1	83.71	0.0077	ND	0.49
Arochlor 1254	1	83.71	0.0048	ND	0.49
Arochlor 1260	1	83.71	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	136

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.74	0.0003	ND	NLE
beta-BHC	1	85.74	0.0003	ND	NLE
gamma-BHC	1	85.74	0.0005	ND	0.52
delta-BHC	1	85.74	0.0005	ND	NLE
Heptachlor	1	85.74	0.0003	ND	0.15
Aldrin	1	85.74	0.0005	ND	0.04
Heptachlor Epoxide	1	85.74	0.0007	ND	NLE
Endosulfan I	1	85.74	0.0006	ND	NLE
4,4'-DDE	1	85.74	0.0005	0.030	2
Dieldrin	1	85.74	0.0006	ND	0.042
Endrin	1	85.74	0.0006	ND	17
Endosulfan II	1	85.74	0.0005	ND	NLE
4,4'-DDD	1	85.74	0.0007	0.013	3
Endrin Aldehyde	1	85.74	0.0006	ND	NLE
4,4'-DDT	1	85.74	0.0013	0.008	2
Endosulfan-Sulfate	1	85.74	0.0005	ND	NLE
gamma -Chlordane	1	85.74	0.0006	ND	NLE
alpha-Chlordane	1	85.74	0.0006	ND	NLE
Toxaphene	1	85.74	0.0003	ND	0.1
Arochlor 1016	1	85.74	0.0128	ND	0.49
Arochlor 1221	1	85.74	0.0235	ND	0.49
Arochlor 1232	1	85.74	0.0160	ND	0.49
Arochlor 1242	1	85.74	0.0183	ND	0.49
Arochlor 1248	1	85.74	0.0073	ND	0.49
Arochlor 1254	1	85.74	0.0046	ND	0.49
Arochlor 1260	1	85.74	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	137

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.95	0.0003	ND	NLE
beta-BHC	1	84.95	0.0003	ND	NLE
gamma-BHC	1	84.95	0.0005	ND	0.52
delta-BHC	1	84.95	0.0005	ND	NLE
Heptachlor	1	84.95	0.0003	ND	0.15
Aldrin	1	84.95	0.0005	ND	0.04
Heptachlor Epoxide	1	84.95	0.0007	ND	NLE
Endosulfan I	1	84.95	0.0006	ND	NLE
4,4'-DDE	1	84.95	0.0005	0.011	2
Dieldrin	1	84.95	0.0006	ND	0.042
Endrin	1	84.95	0.0006	ND	17
Endosulfan II	1	84.95	0.0005	ND	NLE
4,4'-DDD	1	84.95	0.0007	0.009	3
Endrin Aldehyde	1	84.95	0.0006	ND	NLE
4,4'-DDT	1	84.95	0.0013	0.012	2
Endosulfan-Sulfate	1	84.95	0.0005	ND	NLE
gamma -Chlordane	1	84.95	0.0006	ND	NLE
alpha-Chlordane	1	84.95	0.0006	ND	NLE
Toxaphene	1	84.95	0.0003	ND	0.1
Arochlor 1016	1	84.95	0.0129	ND	0.49
Arochlor 1221	1	84.95	0.0237	ND	0.49
Arochlor 1232	1	84.95	0.0161	ND	0.49
Arochlor 1242	1	84.95	0.0184	ND	0.49
Arochlor 1248	1	84.95	0.0074	ND	0.49
Arochlor 1254	1	84.95	0.0046	ND	0.49
Arochlor 1260	1	84.95	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	138

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.57	0.0004	ND	NLE
beta-BHC	1	83.57	0.0004	ND	NLE
gamma-BHC	1	83.57	0.0005	ND	0.52
delta-BHC	1	83.57	0.0005	ND	NLE
Heptachlor	1	83.57	0.0004	ND	0.15
Aldrin	1	83.57	0.0005	ND	0.04
Heptachlor Epoxide	1	83.57	0.0007	ND	NLE
Endosulfan I	1	83.57	0.0006	ND	NLE
4,4'-DDE	1	83.57	0.0005	0.010	2
Dieldrin	1	83.57	0.0006	ND	0.042
Endrin	1	83.57	0.0006	ND	17
Endosulfan II	1	83.57	0.0005	ND	NLE
4,4'-DDD	1	83.57	0.0007	0.013	3
Endrin Aldehyde	1	83.57	0.0006	ND	NLE
4,4'-DDT	1	83.57	0.0013	0.005	2
Endosulfan-Sulfate	1	83.57	0.0005	ND	NLE
gamma -Chlordane	1	83.57	0.0006	ND	NLE
alpha-Chlordane	1	83.57	0.0006	ND	NLE
Toxaphene	1	83.57	0.0004	ND	0.1
Arochlor 1016	1	83.57	0.0131	ND	0.49
Arochlor 1221	1	83.57	0.0241	ND	0.49
Arochlor 1232	1	83.57	0.0164	ND	0.49
Arochlor 1242	1	83.57	0.0187	ND	0.49
Arochlor 1248	1	83.57	0.0075	ND	0.49
Arochlor 1254	1	83.57	0.0047	ND	0.49
Arochlor 1260	1	83.57	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4790.26
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/15/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/21/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	139

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.02	0.0003	ND	NLE
beta-BHC	1	87.02	0.0003	ND	NLE
gamma-BHC	1	87.02	0.0005	ND	0.52
delta-BHC	1	87.02	0.0005	ND	NLE
Heptachlor	1	87.02	0.0003	ND	0.15
Aldrin	1	87.02	0.0005	ND	0.04
Heptachlor Epoxide	1	87.02	0.0007	ND	NLE
Endosulfan I	1	87.02	0.0006	ND	NLE
4,4'-DDE	1	87.02	0.0005	0.111	2
Dieldrin	1	87.02	0.0006	ND	0.042
Endrin	1	87.02	0.0006	ND	17
Endosulfan II	1	87.02	0.0005	ND	NLE
4,4'-DDD	1	87.02	0.0007	0.069	3
Endrin Aldehyde	1	87.02	0.0006	ND	NLE
4,4'-DDT	1	87.02	0.0012	0.030	2
Endosulfan-Sulfate	1	87.02	0.0005	ND	NLE
gamma -Chlordane	1	87.02	0.0006	ND	NLE
alpha-Chlordane	1	87.02	0.0006	ND	NLE
Toxaphene	1	87.02	0.0003	ND	0.1
Arochlor 1016	1	87.02	0.0127	ND	0.49
Arochlor 1221	1	87.02	0.0233	ND	0.49
Arochlor 1232	1	87.02	0.0159	ND	0.49
Arochlor 1242	1	87.02	0.0181	ND	0.49
Arochlor 1248	1	87.02	0.0072	ND	0.49
Arochlor 1254	1	87.02	0.0045	ND	0.49
Arochlor 1260	1	87.02	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

001412

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	140

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.44	0.0003	ND	NLE
beta-BHC	1	84.44	0.0003	ND	NLE
gamma-BHC	1	84.44	0.0005	ND	0.52
delta-BHC	1	84.44	0.0005	ND	NLE
Heptachlor	1	84.44	0.0003	ND	0.15
Aldrin	1	84.44	0.0005	ND	0.04
Heptachlor Epoxide	1	84.44	0.0007	ND	NLE
Endosulfan I	1	84.44	0.0006	ND	NLE
4,4'-DDE	1	84.44	0.0005	0.010	2
Dieldrin	1	84.44	0.0006	ND	0.042
Endrin	1	84.44	0.0006	ND	17
Endosulfan II	1	84.44	0.0005	ND	NLE
4,4'-DDD	1	84.44	0.0007	0.009	3
Endrin Aldehyde	1	84.44	0.0006	ND	NLE
4,4'-DDT	1	84.44	0.0012	0.016	2
Endosulfan-Sulfate	1	84.44	0.0005	ND	NLE
gamma -Chlordane	1	84.44	0.0006	ND	NLE
alpha-Chlordane	1	84.44	0.0006	ND	NLE
Toxaphene	1	84.44	0.0003	ND	0.1
Arochlor 1016	1	84.44	0.0126	ND	0.49
Arochlor 1221	1	84.44	0.0232	ND	0.49
Arochlor 1232	1	84.44	0.0158	ND	0.49
Arochlor 1242	1	84.44	0.0180	ND	0.49
Arochlor 1248	1	84.44	0.0072	ND	0.49
Arochlor 1254	1	84.44	0.0045	ND	0.49
Arochlor 1260	1	84.44	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	141

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	85.62	0.0003	ND	NLE
beta-BHC	1	85.62	0.0003	ND	NLE
gamma-BHC	1	85.62	0.0005	ND	0.52
delta-BHC	1	85.62	0.0005	ND	NLE
Heptachlor	1	85.62	0.0003	ND	0.15
Aldrin	1	85.62	0.0005	ND	0.04
Heptachlor Epoxide	1	85.62	0.0007	ND	NLE
Endosulfan I	1	85.62	0.0006	ND	NLE
4,4'-DDE	1	85.62	0.0005	0.003	2
Dieldrin	1	85.62	0.0006	ND	0.042
Endrin	1	85.62	0.0006	ND	17
Endosulfan II	1	85.62	0.0005	ND	NLE
4,4'-DDD	1	85.62	0.0007	0.003	3
Endrin Aldehyde	1	85.62	0.0006	ND	NLE
4,4'-DDT	1	85.62	0.0013	0.003	2
Endosulfan-Sulfate	1	85.62	0.0005	ND	NLE
gamma -Chlordane	1	85.62	0.0006	ND	NLE
alpha-Chlordane	1	85.62	0.0006	ND	NLE
Toxaphene	1	85.62	0.0003	ND	0.1
Arochlor 1016	1	85.62	0.0130	ND	0.49
Arochlor 1221	1	85.62	0.0238	ND	0.49
Arochlor 1232	1	85.62	0.0162	ND	0.49
Arochlor 1242	1	85.62	0.0185	ND	0.49
Arochlor 1248	1	85.62	0.0074	ND	0.49
Arochlor 1254	1	85.62	0.0046	ND	0.49
Arochlor 1260	1	85.62	0.0042	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	142

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	82.15	0.0004	ND	NLE
beta-BHC	1	82.15	0.0004	ND	NLE
gamma-BHC	1	82.15	0.0005	ND	0.52
delta-BHC	1	82.15	0.0005	ND	NLE
Heptachlor	1	82.15	0.0004	ND	0.15
Aldrin	1	82.15	0.0005	ND	0.04
Heptachlor Epoxide	1	82.15	0.0007	ND	NLE
Endosulfan I	1	82.15	0.0006	ND	NLE
4,4'-DDE	1	82.15	0.0005	0.029	2
Dieldrin	1	82.15	0.0006	0.007	0.042
Endrin	1	82.15	0.0006	ND	17
Endosulfan II	1	82.15	0.0005	ND	NLE
4,4'-DDD	1	82.15	0.0007	0.030	3
Endrin Aldehyde	1	82.15	0.0006	ND	NLE
4,4'-DDT	1	82.15	0.0013	0.023	2
Endosulfan-Sulfate	1	82.15	0.0005	ND	NLE
gamma -Chlordane	1	82.15	0.0006	ND	NLE
alpha-Chlordane	1	82.15	0.0006	ND	NLE
Toxaphene	1	82.15	0.0004	ND	0.1
Arochlor 1016	1	82.15	0.0136	ND	0.49
Arochlor 1221	1	82.15	0.0249	ND	0.49
Arochlor 1232	1	82.15	0.0169	ND	0.49
Arochlor 1242	1	82.15	0.0194	ND	0.49
Arochlor 1248	1	82.15	0.0077	ND	0.49
Arochlor 1254	1	82.15	0.0048	ND	0.49
Arochlor 1260	1	82.15	0.0044	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	143

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.78	0.0004	ND	NLE
beta-BHC	1	83.78	0.0004	ND	NLE
gamma-BHC	1	83.78	0.0005	ND	0.52
delta-BHC	1	83.78	0.0005	ND	NLE
Heptachlor	1	83.78	0.0004	ND	0.15
Aldrin	1	83.78	0.0005	ND	0.04
Heptachlor Epoxide	1	83.78	0.0007	ND	NLE
Endosulfan I	1	83.78	0.0006	ND	NLE
4,4'-DDE	1	83.78	0.0005	0.032	2
Dieldrin	1	83.78	0.0006	ND	0.042
Endrin	1	83.78	0.0006	ND	17
Endosulfan II	1	83.78	0.0005	ND	NLE
4,4'-DDD	1	83.78	0.0007	0.006	3
Endrin Aldehyde	1	83.78	0.0006	ND	NLE
4,4'-DDT	1	83.78	0.0013	0.036	2
Endosulfan-Sulfate	1	83.78	0.0005	ND	NLE
gamma -Chlordane	1	83.78	0.0006	ND	NLE
alpha-Chlordane	1	83.78	0.0006	ND	NLE
Toxaphene	1	83.78	0.0004	ND	0.1
Arochlor 1016	1	83.78	0.0133	ND	0.49
Arochlor 1221	1	83.78	0.0245	ND	0.49
Arochlor 1232	1	83.78	0.0166	ND	0.49
Arochlor 1242	1	83.78	0.0190	ND	0.49
Arochlor 1248	1	83.78	0.0076	ND	0.49
Arochlor 1254	1	83.78	0.0048	ND	0.49
Arochlor 1260	1	83.78	0.0043	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	144

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.91	0.0003	ND	NLE
beta-BHC	1	87.91	0.0003	ND	NLE
gamma-BHC	1	87.91	0.0004	ND	0.52
delta-BHC	1	87.91	0.0004	ND	NLE
Heptachlor	1	87.91	0.0003	ND	0.15
Aldrin	1	87.91	0.0004	ND	0.04
Heptachlor Epoxide	1	87.91	0.0007	ND	NLE
Endosulfan I	1	87.91	0.0006	ND	NLE
4,4'-DDE	1	87.91	0.0004	ND	2
Dieldrin	1	87.91	0.0006	ND	0.042
Endrin	1	87.91	0.0006	ND	17
Endosulfan II	1	87.91	0.0004	ND	NLE
4,4'-DDD	1	87.91	0.0007	ND	3
Endrin Aldehyde	1	87.91	0.0006	ND	NLE
4,4'-DDT	1	87.91	0.0012	0.002	2
Endosulfan-Sulfate	1	87.91	0.0004	ND	NLE
gamma -Chlordane	1	87.91	0.0006	ND	NLE
alpha-Chlordane	1	87.91	0.0006	ND	NLE
Toxaphene	1	87.91	0.0003	ND	0.1
Arochlor 1016	1	87.91	0.0125	ND	0.49
Arochlor 1221	1	87.91	0.0230	ND	0.49
Arochlor 1232	1	87.91	0.0156	ND	0.49
Arochlor 1242	1	87.91	0.0179	ND	0.49
Arochlor 1248	1	87.91	0.0072	ND	0.49
Arochlor 1254	1	87.91	0.0045	ND	0.49
Arochlor 1260	1	87.91	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	145

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.77	0.0003	ND	NLE
beta-BHC	1	83.77	0.0003	ND	NLE
gamma-BHC	1	83.77	0.0005	ND	0.52
delta-BHC	1	83.77	0.0005	ND	NLE
Heptachlor	1	83.77	0.0003	ND	0.15
Aldrin	1	83.77	0.0005	ND	0.04
Heptachlor Epoxide	1	83.77	0.0007	ND	NLE
Endosulfan I	1	83.77	0.0006	ND	NLE
4,4'-DDE	1	83.77	0.0005	ND	2
Dieldrin	1	83.77	0.0006	ND	0.042
Endrin	1	83.77	0.0006	ND	17
Endosulfan II	1	83.77	0.0005	ND	NLE
4,4'-DDD	1	83.77	0.0007	ND	3
Endrin Aldehyde	1	83.77	0.0006	ND	NLE
4,4'-DDT	1	83.77	0.0013	0.002	2
Endosulfan-Sulfate	1	83.77	0.0005	ND	NLE
gamma -Chlordane	1	83.77	0.0006	ND	NLE
alpha-Chlordane	1	83.77	0.0006	ND	NLE
Toxaphene	1	83.77	0.0003	ND	0.1
Arochlor 1016	1	83.77	0.0128	ND	0.49
Arochlor 1221	1	83.77	0.0236	ND	0.49
Arochlor 1232	1	83.77	0.0161	ND	0.49
Arochlor 1242	1	83.77	0.0183	ND	0.49
Arochlor 1248	1	83.77	0.0073	ND	0.49
Arochlor 1254	1	83.77	0.0046	ND	0.49
Arochlor 1260	1	83.77	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	146

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	83.19	0.0003	ND	NLE
beta-BHC	1	83.19	0.0003	ND	NLE
gamma-BHC	1	83.19	0.0005	ND	0.52
delta-BHC	1	83.19	0.0005	ND	NLE
Heptachlor	1	83.19	0.0003	ND	0.15
Aldrin	1	83.19	0.0005	ND	0.04
Heptachlor Epoxide	1	83.19	0.0007	ND	NLE
Endosulfan I	1	83.19	0.0006	ND	NLE
4,4'-DDE	1	83.19	0.0005	ND	2
Dieldrin	1	83.19	0.0006	ND	0.042
Endrin	1	83.19	0.0006	ND	17
Endosulfan II	1	83.19	0.0005	ND	NLE
4,4'-DDD	1	83.19	0.0007	ND	3
Endrin Aldehyde	1	83.19	0.0006	ND	NLE
4,4'-DDT	1	83.19	0.0012	0.057	2
Endosulfan-Sulfate	1	83.19	0.0005	ND	NLE
gamma -Chlordane	1	83.19	0.0006	ND	NLE
alpha-Chlordane	1	83.19	0.0006	ND	NLE
Toxaphene	1	83.19	0.0003	ND	0.1
Arochlor 1016	1	83.19	0.0127	ND	0.49
Arochlor 1221	1	83.19	0.0233	ND	0.49
Arochlor 1232	1	83.19	0.0158	ND	0.49
Arochlor 1242	1	83.19	0.0181	ND	0.49
Arochlor 1248	1	83.19	0.0072	ND	0.49
Arochlor 1254	1	83.19	0.0045	ND	0.49
Arochlor 1260	1	83.19	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	147

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	88.95	0.0003	ND	NLE
beta-BHC	1	88.95	0.0003	ND	NLE
gamma-BHC	1	88.95	0.0004	ND	0.52
delta-BHC	1	88.95	0.0004	ND	NLE
Heptachlor	1	88.95	0.0003	ND	0.15
Aldrin	1	88.95	0.0004	ND	0.04
Heptachlor Epoxide	1	88.95	0.0007	ND	NLE
Endosulfan I	1	88.95	0.0005	ND	NLE
4,4'-DDE	1	88.95	0.0004	0.014	2
Dieldrin	1	88.95	0.0005	0.032	0.042
Endrin	1	88.95	0.0005	ND	17
Endosulfan II	1	88.95	0.0004	ND	NLE
4,4'-DDD	1	88.95	0.0007	0.018	3
Endrin Aldehyde	1	88.95	0.0005	ND	NLE
4,4'-DDT	1	88.95	0.0012	0.079	2
Endosulfan-Sulfate	1	88.95	0.0004	ND	NLE
gamma -Chlordane	1	88.95	0.0005	ND	NLE
alpha-Chlordane	1	88.95	0.0005	ND	NLE
Toxaphene	1	88.95	0.0003	ND	0.1
Arochlor 1016	1	88.95	0.0123	ND	0.49
Arochlor 1221	1	88.95	0.0226	ND	0.49
Arochlor 1232	1	88.95	0.0153	ND	0.49
Arochlor 1242	1	88.95	0.0175	ND	0.49
Arochlor 1248	1	88.95	0.0070	ND	0.49
Arochlor 1254	1	88.95	0.0044	ND	0.49
Arochlor 1260	1	88.95	0.0039	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4793.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	9/20/99
	Bldg. 173	**Extraction Date:**	9/21/99
	Ft. Monmouth, NJ 07703	**Analysis Date:**	10/22/99
Analysis:	SW-846 Method 8081/8082	**Location :**	M-12 WEST
Matrix:	Soil		
Analyst:	T. Frankovich	**Field ID:**	148

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	88.66	0.0003	ND	NLE
beta-BHC	1	88.66	0.0003	ND	NLE
gamma-BHC	1	88.66	0.0004	ND	0.52
delta-BHC	1	88.66	0.0004	ND	NLE
Heptachlor	1	88.66	0.0003	ND	0.15
Aldrin	1	88.66	0.0004	ND	0.04
Heptachlor Epoxide	1	88.66	0.0006	ND	NLE
Endosulfan I	1	88.66	0.0005	ND	NLE
4,4'-DDE	1	88.66	0.0004	0.005	2
Dieldrin	1	88.66	0.0005	0.031	0.042
Endrin	1	88.66	0.0005	ND	17
Endosulfan II	1	88.66	0.0004	ND	NLE
4,4'-DDD	1	88.66	0.0006	0.008	3
Endrin Aldehyde	1	88.66	0.0005	ND	NLE
4,4'-DDT	1	88.66	0.0011	0.026	2
Endosulfan-Sulfate	1	88.66	0.0004	ND	NLE
gamma -Chlordane	1	88.66	0.0005	ND	NLE
alpha-Chlordane	1	88.66	0.0005	ND	NLE
Toxaphene	1	88.66	0.0003	ND	0.1
Arochlor 1016	1	88.66	0.0117	ND	0.49
Arochlor 1221	1	88.66	0.0215	ND	0.49
Arochlor 1232	1	88.66	0.0146	ND	0.49
Arochlor 1242	1	88.66	0.0167	ND	0.49
Arochlor 1248	1	88.66	0.0067	ND	0.49
Arochlor 1254	1	88.66	0.0042	ND	0.49
Arochlor 1260	1	88.66	0.0038	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPesticide 30m/.32mmID/.25um
Column-Confirmation: RTX-CLPesticide2 30m/.32mmID/.25um

TAL METALS

METHOD BLANKS

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424
Sample Received: 03/20/98
Sample Preparation: 03/30/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

METHOD BLANK SUMMARY (ppm)

Element	Date Analyzed	Result	MDL
Aluminum	03/31/98	0.07	0.01
Antimony	03/31/98	ND	0.002
Arsenic	03/31/98	ND	0.002
Barium	03/31/98	0.0016	0.0005
Beryllium	03/31/98	ND	0.0005
Cadmium	03/31/98	0.0022	0.0005
Calcium	03/31/98	0.58	0.02
Chromium	03/31/98	ND	0.0005
Cobalt	03/31/98	ND	0.0005
Copper	03/31/98	ND	0.003
Iron	03/31/98	0.12	0.01
Lead	03/31/98	ND	0.002
Magnesium	03/31/98	0.04	0.02
Manganese	03/31/98	0.0008	0.0005
Mercury	03/27/98	ND	0.0002
Nickel	03/31/98	0.0008	0.0005
Potassium	03/31/98	ND	0.02
Selenium	03/31/98	ND	0.002
Silver	03/31/98	ND	0.003
Sodium	03/31/98	0.26	0.02
Thallium	03/31/98	ND	0.003
Vanadium	03/31/98	ND	0.001
Zinc	03/31/98	0.004	0.001

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748
Sample Prepared: 09/01/99

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Method Blank

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result	MDL
Aluminum	09/01/99	0.059	0.01
Antimony	09/01/99	ND	0.002
Arsenic	09/01/99	ND	0.002
Barium	09/01/99	0.0010	0.0005
Beryllium	09/01/99	ND	0.0005
Cadmium	09/01/99	ND	0.0005
Calcium	09/01/99	0.175	0.02
Chromium	09/01/99	0.0022	0.0005
Cobalt	09/01/99	ND	0.0005
Copper	09/01/99	0.169	0.003
Iron	09/01/99	0.056	0.01
Lead	09/01/99	ND	0.002
Magnesium	09/01/99	0.064	0.02
Manganese	09/01/99	0.0009	0.0005
Mercury	09/01/99	ND	0.0001
Nickel	09/01/99	0.0029	0.0005
Potassium	09/01/99	0.493	0.02
Selenium	09/01/99	ND	0.002
Silver	09/01/99	ND	0.003
Sodium	09/01/99	0.548	0.02
Thallium	09/01/99	ND	0.003
Vanadium	09/01/99	ND	0.001
Zinc	09/01/99	0.034	0.001

ND = Not Detected, MDL = Method Detection Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754
Sample Prepared: 09/09/99

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Method Blank

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result	MDL
Aluminum	09/09/99	0.088	0.01
Antimony	09/09/99	ND	0.002
Arsenic	09/09/99	0.008	0.002
Barium	09/09/99	0.147	0.0005
Beryllium	09/09/99	ND	0.0005
Cadmium	09/09/99	0.0006	0.0005
Calcium	09/09/99	0.223	0.02
Chromium	09/09/99	0.0017	0.0005
Cobalt	09/09/99	ND	0.0005
Copper	09/09/99	0.169	0.003
Iron	09/09/99	0.296	0.01
Lead	09/09/99	0.016	0.002
Magnesium	09/09/99	ND	0.02
Manganese	09/09/99	0.0053	0.0005
Mercury	09/08/99	ND	0.0001
Nickel	09/09/99	0.0029	0.0005
Potassium	09/09/99	0.363	0.02
Selenium	09/09/99	0.004	0.002
Silver	09/09/99	0.005	0.003
Sodium	09/09/99	7.66	0.02
Thallium	09/09/99	ND	0.003
Vanadium	09/09/99	ND	0.001
Zinc	09/09/99	0.034	0.001

ND = Not Detected, MDL = Method Detection Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777
Sample Prepared: 09/21/99

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Method Blank

TAL-METALS RESULTS SUMMARY (mg/L)

Element	Date of Analysis	Result	MDL
Aluminum	09/22/99	ND	0.01
Antimony	09/22/99	0.004	0.002
Arsenic	09/22/99	ND	0.002
Barium	09/22/99	0.0010	0.0005
Beryllium	09/22/99	ND	0.0005
Cadmium	09/22/99	0.0005	0.0005
Calcium	09/22/99	0.241	0.02
Chromium	09/22/99	0.0018	0.0005
Cobalt	09/22/99	ND	0.0005
Copper	09/22/99	0.141	0.003
Iron	09/22/99	0.183	0.01
Lead	09/22/99	ND	0.002
Magnesium	09/22/99	0.137	0.02
Manganese	09/22/99	ND	0.0005
Mercury	09/14/99	ND	0.0001
Nickel	09/22/99	0.0027	0.0005
Potassium	09/22/99	0.232	0.02
Selenium	09/22/99	ND	0.002
Silver	09/22/99	ND	0.003
Sodium	09/22/99	0.186	0.02
Thallium	09/22/99	ND	0.003
Vanadium	09/22/99	ND	0.001
Zinc	09/22/99	0.028	0.001

ND = Not Detected, MDL = Method Detection Limit

FIELD DUPLICATES

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.24
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Field Dup

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5021	NLE	1.111
Antimony	03/31/98	0.717	14	0.222
Arsenic	03/31/98	4.409	20	0.222
Barium	03/31/98	19.65	700	0.056
Beryllium	03/31/98	0.3926	1	0.056
Cadmium	03/31/98	0.1791	1	0.056
Calcium	03/31/98	421.1	NLE	2.222
Chromium	03/31/98	39.15	NLE	0.056
Cobalt	03/31/98	1.202	NLE	0.056
Copper	03/31/98	10.68	600	0.333
Iron	03/31/98	9427	NLE	1.111
Lead	03/31/98	18.19	100	0.222
Magnesium	03/31/98	1095	NLE	2.222
Manganese	03/31/98	23.91	NLE	0.056
Mercury	03/27/98	0.297	14	0.010
Nickel	03/31/98	4.139	250	0.056
Potassium	03/31/98	3145	NLE	2.222
Selenium	03/31/98	ND	63	0.333
Silver	03/31/98	ND	110	0.333
Sodium	03/31/98	73.27	NLE	2.222
Thallium	03/31/98	ND	2	0.333
Vanadium	03/31/98	21.36	370	0.111
Zinc	03/31/98	176.7	1500	0.111

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.24
Sample Received: 03/24/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Field Dup.

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4053	NLE	1.278
Antimony	03/31/98	0.863	14	0.256
Arsenic	03/31/98	14.58	20	0.256
Barium	03/31/98	70.08	700	0.064
Beryllium	03/31/98	0.4958	1	0.064
Cadmium	03/31/98	ND	1	0.064
Calcium	03/31/98	1271	NLE	2.555
Chromium	03/31/98	51.15	NLE	0.064
Cobalt	03/31/98	1.116	NLE	0.064
Copper	03/31/98	17.75	600	0.383
Iron	03/31/98	14460	NLE	1.278
Lead	03/31/98	23.37	100	0.256
Magnesium	03/31/98	1321	NLE	2.555
Manganese	03/31/98	18.91	NLE	0.064
Mercury	04/01/98	0.093	14	0.012
Nickel	03/31/98	3.999	250	0.064
Potassium	03/31/98	4211	NLE	2.555
Selenium	03/31/98	1.305	63	0.383
Silver	03/31/98	ND	110	0.383
Sodium	03/31/98	135.8	NLE	2.555
Thallium	03/31/98	ND	2	0.383
Vanadium	03/31/98	13.25	370	0.128
Zinc	03/31/98	52.61	1500	0.128

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.24
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Field Dup

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	19100	NLE	2.362
Antimony	09/09/99	ND	14	0.472
Arsenic	09/09/99	42.1	20	0.472
Barium	09/09/99	11.8	700	0.118
Beryllium	09/09/99	2.56	1	0.118
Cadmium	09/09/99	0.600	1	0.118
Calcium	09/09/99	426	NLE	4.724
Chromium	09/09/99	295	NLE	0.118
Cobalt	09/09/99	1.22	NLE	0.118
Copper	09/09/99	2.14	600	0.709
Iron	09/09/99	65200	NLE	2.362
Lead	09/09/99	11.3	100	0.472
Magnesium	09/09/99	9420	NLE	4.724
Manganese	09/09/99	23.9	NLE	0.118
Mercury	09/08/99	0.043	14	0.025
Nickel	09/09/99	6.68	250	0.118
Potassium	09/09/99	22100	NLE	4.724
Selenium	09/09/99	ND	63	0.709
Silver	09/09/99	ND	110	0.709
Sodium	09/09/99	187	NLE	4.724
Thallium	09/09/99	ND	2	0.709
Vanadium	09/09/99	121	370	0.236
Zinc	09/09/99	56.8	1500	0.236

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.30
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Field Dup, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	21400	NLE	2.282
Antimony	09/09/99	ND	14	0.456
Arsenic	09/09/99	26.9	20	0.456
Barium	09/09/99	30.1	700	0.114
Beryllium	09/09/99	1.58	1	0.114
Cadmium	09/09/99	0.578	1	0.114
Calcium	09/09/99	669	NLE	4.563
Chromium	09/09/99	193	NLE	0.114
Cobalt	09/09/99	1.48	NLE	0.114
Copper	09/09/99	14.7	600	0.684
Iron	09/09/99	39800	NLE	2.282
Lead	09/09/99	26.7	100	0.456
Magnesium	09/09/99	5370	NLE	4.563
Manganese	09/09/99	54.9	NLE	0.114
Mercury	09/08/99	ND	14	0.025
Nickel	09/09/99	5.95	250	0.114
Potassium	09/09/99	11500	NLE	4.563
Selenium	09/09/99	ND	63	0.684
Silver	09/09/99	ND	110	0.684
Sodium	09/09/99	134	NLE	4.563
Thallium	09/09/99	ND	2	0.684
Vanadium	09/09/99	91.0	370	0.228
Zinc	09/09/99	142	1500	0.228

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.24
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: Field Dup, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	10400	NLE	2.237
Antimony	09/09/99	ND	14	0.447
Arsenic	09/09/99	9.67	20	0.447
Barium	09/09/99	98.5	700	0.112
Beryllium	09/09/99	1.07	1	0.112
Cadmium	09/09/99	0.335	1	0.112
Calcium	09/09/99	1200	NLE	4.474
Chromium	09/09/99	97.6	NLE	0.112
Cobalt	09/09/99	3.28	NLE	0.112
Copper	09/09/99	11.5	600	0.671
Iron	09/09/99	24600	NLE	2.237
Lead	09/09/99	18.6	100	0.447
Magnesium	09/09/99	2720	NLE	4.474
Manganese	09/09/99	25.5	NLE	0.112
Mercury	09/08/99	ND	14	0.018
Nickel	09/09/99	9.27	250	0.112
Potassium	09/09/99	5880	NLE	4.474
Selenium	09/09/99	ND	63	0.671
Silver	09/09/99	ND	110	0.671
Sodium	09/09/99	148	NLE	4.474
Thallium	09/09/99	ND	2	0.671
Vanadium	09/09/99	49.5	370	0.224
Zinc	09/09/99	60.6	1500	0.224

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.28
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-Field Dup, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	14100	NLE	2.233
Antimony	09/22/99	ND	14	0.447
Arsenic	09/22/99	50.6	20	0.447
Barium	09/22/99	39.1	700	0.112
Beryllium	09/22/99	1.69	1	0.112
Cadmium	09/22/99	0.819	1	0.112
Calcium	09/22/99	1650	NLE	4.466
Chromium	09/22/99	187	NLE	0.112
Cobalt	09/22/99	2.23	NLE	0.112
Copper	09/22/99	49.7	600	0.670
Iron	09/22/99	45200	NLE	2.233
Lead	09/22/99	79.5	400	0.447
Magnesium	09/22/99	5390	NLE	4.466
Manganese	09/22/99	79.6	NLE	0.112
Mercury	09/21/99	ND	14	0.023
Nickel	09/22/99	7.45	250	0.112
Potassium	09/22/99	11700	NLE	4.466
Selenium	09/22/99	ND	63	0.670
Silver	09/22/99	ND	110	0.670
Sodium	09/22/99	119	NLE	4.466
Thallium	09/22/99	ND	2	0.670
Vanadium	09/22/99	89.6	370	0.223
Zinc	09/22/99	142	1500	0.223

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

SAMPLES

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.01
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-1

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5642	NLE	0.977
Antimony	03/31/98	0.710	14	0.195
Arsenic	03/31/98	5.558	20	0.195
Barium	03/31/98	26.94	700	0.049
Beryllium	03/31/98	0.535	1	0.049
Cadmium	03/31/98	1.307	1	0.049
Calcium	03/31/98	172.2	NLE	1.955
Chromium	03/31/98	39.64	NLE	0.049
Cobalt	03/31/98	1.599	NLE	0.049
Copper	03/31/98	6.895	600	0.293
Iron	03/31/98	14940	NLE	0.977
Lead	03/31/98	52.03	100	0.195
Magnesium	03/31/98	1257	NLE	1.955
Manganese	03/31/98	51.87	NLE	0.049
Mercury	03/27/98	29.909	14	6.042
Nickel	03/31/98	4.266	250	0.049
Potassium	03/31/98	3509	NLE	1.955
Selenium	03/31/98	ND	63	0.293
Silver	03/31/98	ND	110	0.293
Sodium	03/31/98	24.61	NLE	1.955
Thallium	03/31/98	ND	2	0.293
Vanadium	03/31/98	22.45	370	0.098
Zinc	03/31/98	48.29	1500	0.098

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.03
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-2

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	6919	NLE	1.284
Antimony	03/31/98	1.051	14	0.257
Arsenic	03/31/98	10.87	20	0.257
Barium	03/31/98	35.36	700	0.064
Beryllium	03/31/98	0.461	1	0.064
Cadmium	03/31/98	ND	1	0.064
Calcium	03/31/98	251.3	NLE	2.569
Chromium	03/31/98	64.16	NLE	0.064
Cobalt	03/31/98	1.463	NLE	0.064
Copper	03/31/98	40.21	600	0.385
Iron	03/31/98	18570	NLE	1.284
Lead	03/31/98	53.54	100	0.257
Magnesium	03/31/98	1477	NLE	2.569
Manganese	03/31/98	17.21	NLE	0.064
Mercury	03/27/98	0.390	14	0.014
Nickel	03/31/98	5.328	250	0.064
Potassium	03/31/98	3656	NLE	2.569
Selenium	03/31/98	0.885	63	0.385
Silver	03/31/98	1.571	110	0.385
Sodium	03/31/98	207.6	NLE	2.569
Thallium	03/31/98	ND	2	0.385
Vanadium	03/31/98	32.82	370	0.128
Zinc	03/31/98	29.07	1500	0.128

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.05
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-3

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	12820	NLE	1.237
Antimony	03/31/98	2.367	14	0.247
Arsenic	03/31/98	12.76	20	0.247
Barium	03/31/98	49.88	700	0.062
Beryllium	03/31/98	1.180	1	0.062
Cadmium	03/31/98	ND	1	0.062
Calcium	03/31/98	320.3	NLE	2.474
Chromium	03/31/98	135.6	NLE	0.062
Cobalt	03/31/98	1.435	NLE	0.062
Copper	03/31/98	18.34	600	0.371
Iron	03/31/98	37620	NLE	1.237
Lead	03/31/98	65.37	100	0.247
Magnesium	03/31/98	4207	NLE	2.474
Manganese	03/31/98	21.31	NLE	0.062
Mercury	03/27/98	0.210	14	0.013
Nickel	03/31/98	6.129	250	0.062
Potassium	03/31/98	8666	NLE	2.474
Selenium	03/31/98	ND	63	0.371
Silver	03/31/98	1.699	110	0.371
Sodium	03/31/98	91.26	NLE	2.474
Thallium	03/31/98	ND	2	0.371
Vanadium	03/31/98	65.10	370	0.124
Zinc	03/31/98	51.51	1500	0.124

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.07
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-4

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	9691	NLE	1.212
Antimony	03/31/98	1.731	14	0.242
Arsenic	03/31/98	10.61	20	0.242
Barium	03/31/98	60.55	700	0.061
Beryllium	03/31/98	0.555	1	0.061
Cadmium	03/31/98	ND	1	0.061
Calcium	03/31/98	383.6	NLE	2.424
Chromium	03/31/98	80.22	NLE	0.061
Cobalt	03/31/98	1.243	NLE	0.061
Copper	03/31/98	45.30	600	0.364
Iron	03/31/98	45290	NLE	1.212
Lead	03/31/98	33.97	100	0.242
Magnesium	03/31/98	2117	NLE	2.424
Manganese	03/31/98	25.55	NLE	0.061
Mercury	03/27/98	0.051	14	0.012
Nickel	03/31/98	5.360	250	0.061
Potassium	03/31/98	5885	NLE	2.424
Selenium	03/31/98	0.429	63	0.364
Silver	03/31/98	ND	110	0.364
Sodium	03/31/98	574.1	NLE	2.424
Thallium	03/31/98	ND	2	0.364
Vanadium	03/31/98	58.32	370	0.121
Zinc	03/31/98	42.63	1500	0.121

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.09
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-5

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5612	NLE	1.336
Antimony	03/31/98	1.483	14	0.267
Arsenic	03/31/98	11.11	20	0.267
Barium	03/31/98	85.09	700	0.067
Beryllium	03/31/98	0.664	1	0.067
Cadmium	03/31/98	ND	1	0.067
Calcium	03/31/98	488.9	NLE	2.672
Chromium	03/31/98	75.81	NLE	0.067
Cobalt	03/31/98	1.208	NLE	0.067
Copper	03/31/98	50.19	600	0.401
Iron	03/31/98	23110	NLE	1.336
Lead	03/31/98	32.95	100	0.267
Magnesium	03/31/98	2073	NLE	2.672
Manganese	03/31/98	16.93	NLE	0.067
Mercury	03/27/98	0.050	14	0.012
Nickel	03/31/98	4.669	250	0.067
Potassium	03/31/98	6901	NLE	2.672
Selenium	03/31/98	1.159	63	0.401
Silver	03/31/98	ND	110	0.401
Sodium	03/31/98	411.4	NLE	2.672
Thallium	03/31/98	ND	2	0.401
Vanadium	03/31/98	29.18	370	0.134
Zinc	03/31/98	24.21	1500	0.134

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.11
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-6

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	6598	NLE	1.187
Antimony	03/31/98	1.046	14	0.237
Arsenic	03/31/98	9.919	20	0.237
Barium	03/31/98	44.48	700	0.059
Beryllium	03/31/98	0.4763	1	0.059
Cadmium	03/31/98	ND	1	0.059
Calcium	03/31/98	338.2	NLE	2.373
Chromium	03/31/98	61.98	NLE	0.059
Cobalt	03/31/98	1.372	NLE	0.059
Copper	03/31/98	46.45	600	0.356
Iron	03/31/98	19700	NLE	1.187
Lead	03/31/98	67.67	100	0.237
Magnesium	03/31/98	1905	NLE	2.373
Manganese	03/31/98	22.75	NLE	0.059
Mercury	03/27/98	0.118	14	0.014
Nickel	03/31/98	5.057	250	0.059
Potassium	03/31/98	5405	NLE	2.373
Selenium	03/31/98	0.709	63	0.356
Silver	03/31/98	ND	110	0.356
Sodium	03/31/98	376.3	NLE	2.373
Thallium	03/31/98	ND	2	0.356
Vanadium	03/31/98	31.03	370	0.119
Zinc	03/31/98	36.88	1500	0.119

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.13
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-7

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8075	NLE	1.314
Antimony	03/31/98	1.001	14	0.263
Arsenic	03/31/98	17.43	20	0.263
Barium	03/31/98	74.22	700	0.066
Beryllium	03/31/98	0.5101	1	0.066
Cadmium	03/31/98	ND	1	0.066
Calcium	03/31/98	223.3	NLE	2.627
Chromium	03/31/98	83.75	NLE	0.066
Cobalt	03/31/98	1.415	NLE	0.066
Copper	03/31/98	45.52	600	0.394
Iron	03/31/98	27560	NLE	1.314
Lead	03/31/98	77.75	100	0.263
Magnesium	03/31/98	1914	NLE	2.627
Manganese	03/31/98	22.02	NLE	0.066
Mercury	03/27/98	0.234	14	0.012
Nickel	03/31/98	5.464	250	0.066
Potassium	03/31/98	5755	NLE	2.627
Selenium	03/31/98	1.033	63	0.394
Silver	03/31/98	0.581	110	0.394
Sodium	03/31/98	646.7	NLE	2.627
Thallium	03/31/98	ND	2	0.394
Vanadium	03/31/98	40.81	370	0.131
Zinc	03/31/98	36.02	1500	0.131

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.15
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-8

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5616	NLE	1.271
Antimony	03/31/98	1.034	14	0.254
Arsenic	03/31/98	6.688	20	0.254
Barium	03/31/98	289.3	700	0.064
Beryllium	03/31/98	0.6405	1	0.064
Cadmium	03/31/98	ND	1	0.064
Calcium	03/31/98	453.0	NLE	2.542
Chromium	03/31/98	42.50	NLE	0.064
Cobalt	03/31/98	1.515	NLE	0.064
Copper	03/31/98	197.1	600	0.381
Iron	03/31/98	13090	NLE	1.271
Lead	03/31/98	84.35	100	0.254
Magnesium	03/31/98	1314	NLE	2.542
Manganese	03/31/98	35.40	NLE	0.064
Mercury	03/27/98	0.012	14	0.000
Nickel	03/31/98	4.738	250	0.064
Potassium	03/31/98	4024	NLE	2.542
Selenium	03/31/98	0.394	63	0.381
Silver	03/31/98	1.013	110	0.381
Sodium	03/31/98	229.5	NLE	2.542
Thallium	03/31/98	ND	2	0.381
Vanadium	03/31/98	30.22	370	0.127
Zinc	03/31/98	49.93	1500	0.127

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3420.17
Sample Received: 03/19/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-9

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	12110	NLE	1.217
Antimony	03/31/98	3.401	14	0.243
Arsenic	03/31/98	38.02	20	0.243
Barium	03/31/98	60.36	700	0.061
Beryllium	03/31/98	1.304	1	0.061
Cadmium	03/31/98	ND	1	0.061
Calcium	03/31/98	594.4	NLE	2.433
Chromium	03/31/98	133.9	NLE	0.061
Cobalt	03/31/98	1.896	NLE	0.061
Copper	03/31/98	141.7	600	0.365
Iron	03/31/98	41770	NLE	1.217
Lead	03/31/98	123.5	100	0.243
Magnesium	03/31/98	3514	NLE	2.433
Manganese	03/31/98	32.09	NLE	0.061
Mercury	03/27/98	1.461	14	0.325
Nickel	03/31/98	8.985	250	0.061
Potassium	03/31/98	7195	NLE	2.433
Selenium	03/31/98	1.374	63	0.365
Silver	03/31/98	1.493	110	0.365
Sodium	03/31/98	139.0	NLE	2.433
Thallium	03/31/98	ND	2	0.365
Vanadium	03/31/98	54.67	370	0.122
Zinc	03/31/98	112.4	1500	0.122

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.02
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-10

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4508	NLE	0.978
Antimony	03/31/98	0.580	14	0.196
Arsenic	03/31/98	7.287	20	0.196
Barium	03/31/98	54.95	700	0.049
Beryllium	03/31/98	0.7108	1	0.049
Cadmium	03/31/98	ND	1	0.049
Calcium	03/31/98	376.9	NLE	1.956
Chromium	03/31/98	37.92	NLE	0.049
Cobalt	03/31/98	5.776	NLE	0.049
Copper	03/31/98	112.0	600	0.293
Iron	03/31/98	13640	NLE	0.978
Lead	03/31/98	95.11	100	0.196
Magnesium	03/31/98	745.9	NLE	1.956
Manganese	03/31/98	24.13	NLE	0.049
Mercury	03/27/98	0.501	14	0.055
Nickel	03/31/98	13.03	250	0.049
Potassium	03/31/98	1989	NLE	1.956
Selenium	03/31/98	0.589	63	0.293
Silver	03/31/98	0.548	110	0.293
Sodium	03/31/98	196.5	NLE	1.956
Thallium	03/31/98	ND	2	0.293
Vanadium	03/31/98	21.20	370	0.098
Zinc	03/31/98	416.3	1500	0.098

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.04
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-11

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	10700	NLE	1.085
Antimony	03/31/98	2.641	14	0.217
Arsenic	03/31/98	12.19	20	0.217
Barium	03/31/98	42.85	700	0.054
Beryllium	03/31/98	1.462	1	0.054
Cadmium	03/31/98	ND	1	0.054
Calcium	03/31/98	333.2	NLE	2.171
Chromium	03/31/98	168.8	NLE	0.054
Cobalt	03/31/98	0.7841	NLE	0.054
Copper	03/31/98	12.21	600	0.326
Iron	03/31/98	31460	NLE	1.085
Lead	03/31/98	11.72	100	0.217
Magnesium	03/31/98	4609	NLE	2.171
Manganese	03/31/98	10.60	NLE	0.054
Mercury	03/27/98	0.061	14	0.011
Nickel	03/31/98	4.273	250	0.054
Potassium	03/31/98	10140	NLE	2.171
Selenium	03/31/98	0.505	63	0.326
Silver	03/31/98	ND	110	0.326
Sodium	03/31/98	124.1	NLE	2.171
Thallium	03/31/98	ND	2	0.326
Vanadium	03/31/98	48.00	370	0.109
Zinc	03/31/98	48.45	1500	0.109

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.06
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-12

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5997	NLE	1.046
Antimony	03/31/98	1.738	14	0.209
Arsenic	03/31/98	7.383	20	0.209
Barium	03/31/98	50.36	700	0.052
Beryllium	03/31/98	0.7754	1	0.052
Cadmium	03/31/98	ND	1	0.052
Calcium	03/31/98	205.5	NLE	2.093
Chromium	03/31/98	90.86	NLE	0.052
Cobalt	03/31/98	0.5523	NLE	0.052
Copper	03/31/98	13.34	600	0.314
Iron	03/31/98	16200	NLE	1.046
Lead	03/31/98	16.93	100	0.209
Magnesium	03/31/98	2133	NLE	2.093
Manganese	03/31/98	9.861	NLE	0.052
Mercury	03/27/98	0.085	14	0.012
Nickel	03/31/98	2.672	250	0.052
Potassium	03/31/98	4544	NLE	2.093
Selenium	03/31/98	ND	63	0.314
Silver	03/31/98	ND	110	0.314
Sodium	03/31/98	71.27	NLE	2.093
Thallium	03/31/98	ND	2	0.314
Vanadium	03/31/98	16.35	370	0.105
Zinc	03/31/98	34.98	1500	0.105

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.08
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-13

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	7942	NLE	1.150
Antimony	03/31/98	2.273	14	0.230
Arsenic	03/31/98	13.66	20	0.230
Barium	03/31/98	65.44	700	0.057
Beryllium	03/31/98	0.9925	1	0.057
Cadmium	03/31/98	ND	1	0.057
Calcium	03/31/98	360.0	NLE	2.300
Chromium	03/31/98	124.6	NLE	0.057
Cobalt	03/31/98	0.8438	NLE	0.057
Copper	03/31/98	6.003	600	0.345
Iron	03/31/98	21030	NLE	1.150
Lead	03/31/98	3.550	100	0.230
Magnesium	03/31/98	2946	NLE	2.300
Manganese	03/31/98	7.919	NLE	0.057
Mercury	03/27/98	0.015	14	0.011
Nickel	03/31/98	3.231	250	0.057
Potassium	03/31/98	6153	NLE	2.300
Selenium	03/31/98	ND	63	0.345
Silver	03/31/98	ND	110	0.345
Sodium	03/31/98	72.53	NLE	2.300
Thallium	03/31/98	ND	2	0.345
Vanadium	03/31/98	13.61	370	0.115
Zinc	03/31/98	54.28	1500	0.115

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.10
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-14

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	2469	NLE	1.050
Antimony	03/31/98	0.467	14	0.210
Arsenic	03/31/98	1.655	20	0.210
Barium	03/31/98	10.62	700	0.053
Beryllium	03/31/98	0.2271	1	0.053
Cadmium	03/31/98	0.0659	1	0.053
Calcium	03/31/98	81.68	NLE	2.100
Chromium	03/31/98	24.03	NLE	0.053
Cobalt	03/31/98	0.3294	NLE	0.053
Copper	03/31/98	4.121	600	0.315
Iron	03/31/98	4887	NLE	1.050
Lead	03/31/98	4.462	100	0.210
Magnesium	03/31/98	456.8	NLE	2.100
Manganese	03/31/98	5.807	NLE	0.053
Mercury	03/27/98	0.021	14	0.011
Nickel	03/31/98	1.820	250	0.053
Potassium	03/31/98	1171	NLE	2.100
Selenium	03/31/98	ND	63	0.315
Silver	03/31/98	ND	110	0.315
Sodium	03/31/98	30.94	NLE	2.100
Thallium	03/31/98	ND	2	0.315
Vanadium	03/31/98	12.98	370	0.105
Zinc	03/31/98	12.55	1500	0.105

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.12
Sample Received: 03/10/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-15

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	2620	NLE	1.258
Antimony	03/31/98	0.345	14	0.252
Arsenic	03/31/98	2.987	20	0.252
Barium	03/31/98	28.31	700	0.063
Beryllium	03/31/98	0.2784	1	0.063
Cadmium	03/31/98	ND	1	0.063
Calcium	03/31/98	650.6	NLE	2.515
Chromium	03/31/98	7.636	NLE	0.063
Cobalt	03/31/98	1.586	NLE	0.063
Copper	03/31/98	81.92	600	0.377
Iron	03/31/98	4008	NLE	1.258
Lead	03/31/98	21.63	100	0.252
Magnesium	03/31/98	286.1	NLE	2.515
Manganese	03/31/98	13.92	NLE	0.063
Mercury	03/27/98	0.045	14	0.011
Nickel	03/31/98	4.973	250	0.063
Potassium	03/31/98	530.5	NLE	2.515
Selenium	03/31/98	0.383	63	0.377
Silver	03/31/98	ND	110	0.377
Sodium	03/31/98	136.2	NLE	2.515
Thallium	03/31/98	ND	2	0.377
Vanadium	03/31/98	12.17	370	0.126
Zinc	03/31/98	15.35	1500	0.126

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.14
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-16

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4328	NLE	1.189
Antimony	03/31/98	1.020	14	0.238
Arsenic	03/31/98	3.420	20	0.238
Barium	03/31/98	72.64	700	0.059
Beryllium	03/31/98	0.8532	1	0.059
Cadmium	03/31/98	0.6784	1	0.059
Calcium	03/31/98	2110	NLE	2.379
Chromium	03/31/98	31.38	NLE	0.059
Cobalt	03/31/98	3.902	NLE	0.059
Copper	03/31/98	31.96	600	0.357
Iron	03/31/98	6384	NLE	1.189
Lead	03/31/98	75.93	100	0.238
Magnesium	03/31/98	326.9	NLE	2.379
Manganese	03/31/98	29.19	NLE	0.059
Mercury	03/27/98	0.258	14	0.013
Nickel	03/31/98	11.59	250	0.059
Potassium	03/31/98	595.0	NLE	2.379
Selenium	03/31/98	0.528	63	0.357
Silver	03/31/98	ND	110	0.357
Sodium	03/31/98	228.9	NLE	2.379
Thallium	03/31/98	ND	2	0.357
Vanadium	03/31/98	14.33	370	0.119
Zinc	03/31/98	55.18	1500	0.119

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.16
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-17

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5798	NLE	1.138
Antimony	03/31/98	1.526	14	0.228
Arsenic	03/31/98	7.245	20	0.228
Barium	03/31/98	138.7	700	0.057
Beryllium	03/31/98	0.5120	1	0.057
Cadmium	03/31/98	0.1049	1	0.057
Calcium	03/31/98	3422	NLE	2.275
Chromium	03/31/98	7.333	NLE	0.057
Cobalt	03/31/98	2.603	NLE	0.057
Copper	03/31/98	22.16	600	0.341
Iron	03/31/98	13410	NLE	1.138
Lead	03/31/98	83.68	100	0.228
Magnesium	03/31/98	311.6	NLE	2.275
Manganese	03/31/98	36.44	NLE	0.057
Mercury	03/27/98	0.021	14	0.013
Nickel	03/31/98	10.22	250	0.057
Potassium	03/31/98	464.3	NLE	2.275
Selenium	03/31/98	0.453	63	0.341
Silver	03/31/98	ND	110	0.341
Sodium	03/31/98	249.3	NLE	2.275
Thallium	03/31/98	ND	2	0.341
Vanadium	03/31/98	16.03	370	0.114
Zinc	03/31/98	70.97	1500	0.114

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.18
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-18

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	1336	NLE	1.332
Antimony	03/31/98	0.319	14	0.266
Arsenic	03/31/98	1.479	20	0.266
Barium	03/31/98	59.20	700	0.067
Beryllium	03/31/98	0.1552	1	0.067
Cadmium	03/31/98	0.1673	1	0.067
Calcium	03/31/98	1379	NLE	2.664
Chromium	03/31/98	2.010	NLE	0.067
Cobalt	03/31/98	1.813	NLE	0.067
Copper	03/31/98	12.58	600	0.400
Iron	03/31/98	1710	NLE	1.332
Lead	03/31/98	4.709	100	0.266
Magnesium	03/31/98	165.3	NLE	2.664
Manganese	03/31/98	10.51	NLE	0.067
Mercury	03/27/98	0.017	14	0.013
Nickel	03/31/98	5.396	250	0.067
Potassium	03/31/98	176.6	NLE	2.664
Selenium	03/31/98	0.521	63	0.400
Silver	03/31/98	ND	110	0.400
Sodium	03/31/98	170.6	NLE	2.664
Thallium	03/31/98	ND	2	0.400
Vanadium	03/31/98	7.215	370	0.133
Zinc	03/31/98	59.54	1500	0.133

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3424.20
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-19

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3624	NLE	1.247
Antimony	03/31/98	1.340	14	0.249
Arsenic	03/31/98	6.735	20	0.249
Barium	03/31/98	71.49	700	0.062
Beryllium	03/31/98	1.148	1	0.062
Cadmium	03/31/98	0.7389	1	0.062
Calcium	03/31/98	1033	NLE	2.494
Chromium	03/31/98	32.18	NLE	0.062
Cobalt	03/31/98	6.331	NLE	0.062
Copper	03/31/98	182.0	600	0.374
Iron	03/31/98	11100	NLE	1.247
Lead	03/31/98	149.2	100	0.249
Magnesium	03/31/98	832.9	NLE	2.494
Manganese	03/31/98	37.97	NLE	0.062
Mercury	03/27/98	0.138	14	0.013
Nickel	03/31/98	17.57	250	0.062
Potassium	03/31/98	1968	NLE	2.494
Selenium	03/31/98	0.818	63	0.374
Silver	03/31/98	ND	110	0.374
Sodium	03/31/98	141.0	NLE	2.494
Thallium	03/31/98	ND	2	0.374
Vanadium	03/31/98	18.92	370	0.125
Zinc	03/31/98	619.7	1500	0.125

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.02
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-20

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4607	NLE	0.853
Antimony	03/31/98	0.947	14	0.171
Arsenic	03/31/98	5.143	20	0.171
Barium	03/31/98	13.94	700	0.043
Beryllium	03/31/98	0.492	1	0.043
Cadmium	03/31/98	ND	1	0.043
Calcium	03/31/98	494.4	NLE	1.706
Chromium	03/31/98	60.39	NLE	0.043
Cobalt	03/31/98	0.368	NLE	0.043
Copper	03/31/98	7.432	600	0.256
Iron	03/31/98	11940	NLE	0.853
Lead	03/31/98	9.944	100	0.171
Magnesium	03/31/98	1600	NLE	1.706
Manganese	03/31/98	5.166	NLE	0.043
Mercury	03/27/98	0.058	14	0.011
Nickel	03/31/98	2.437	250	0.043
Potassium	03/31/98	2931	NLE	1.706
Selenium	03/31/98	ND	63	0.256
Silver	03/31/98	ND	110	0.256
Sodium	03/31/98	36.77	NLE	1.706
Thallium	03/31/98	0.502	2	0.256
Vanadium	03/31/98	22.07	370	0.085
Zinc	03/31/98	35.67	1500	0.085

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.04
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-21

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3855	NLE	1.287
Antimony	03/31/98	1.281	14	0.257
Arsenic	03/31/98	4.345	20	0.257
Barium	03/31/98	29.90	700	0.064
Beryllium	03/31/98	0.3599	1	0.064
Cadmium	03/31/98	0.9103	1	0.064
Calcium	03/31/98	320.3	NLE	2.573
Chromium	03/31/98	59.63	NLE	0.064
Cobalt	03/31/98	1.067	NLE	0.064
Copper	03/31/98	502.4	600	0.386
Iron	03/31/98	12300	NLE	1.287
Lead	03/31/98	404.4	100	0.257
Magnesium	03/31/98	654.0	NLE	2.573
Manganese	03/31/98	36.35	NLE	0.064
Mercury	03/27/98	0.493	14	0.052
Nickel	03/31/98	11.76	250	0.064
Potassium	03/31/98	1611	NLE	2.573
Selenium	03/31/98	ND	63	0.386
Silver	03/31/98	1.180	110	0.386
Sodium	03/31/98	54.23	NLE	2.573
Thallium	03/31/98	ND	2	0.386
Vanadium	03/31/98	16.46	370	0.129
Zinc	03/31/98	753.8	1500	0.129

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.06
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-22

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5241	NLE	1.283
Antimony	03/31/98	0.458	14	0.257
Arsenic	03/31/98	4.688	20	0.257
Barium	03/31/98	15.92	700	0.064
Beryllium	03/31/98	0.4215	1	0.064
Cadmium	03/31/98	1.677	1	0.064
Calcium	03/31/98	3112	NLE	2.565
Chromium	03/31/98	12.92	NLE	0.064
Cobalt	03/31/98	2.251	NLE	0.064
Copper	03/31/98	35.26	600	0.385
Iron	03/31/98	6758	NLE	1.283
Lead	03/31/98	22.43	100	0.257
Magnesium	03/31/98	322.6	NLE	2.565
Manganese	03/31/98	126.3	NLE	0.064
Mercury	03/27/98	0.683	14	0.062
Nickel	03/31/98	5.666	250	0.064
Potassium	03/31/98	621.1	NLE	2.565
Selenium	03/31/98	ND	63	0.385
Silver	03/31/98	ND	110	0.385
Sodium	03/31/98	110.2	NLE	2.565
Thallium	03/31/98	ND	2	0.385
Vanadium	03/31/98	11.38	370	0.128
Zinc	03/31/98	910.2	1500	0.128

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.08
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-23

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8348	NLE	1.312
Antimony	03/31/98	0.653	14	0.262
Arsenic	03/31/98	5.923	20	0.262
Barium	03/31/98	42.62	700	0.066
Beryllium	03/31/98	0.8002	1	0.066
Cadmium	03/31/98	0.549	1	0.066
Calcium	03/31/98	556.0	NLE	2.624
Chromium	03/31/98	41.83	NLE	0.066
Cobalt	03/31/98	4.349	NLE	0.066
Copper	03/31/98	80.43	600	0.394
Iron	03/31/98	11120	NLE	1.312
Lead	03/31/98	149.0	100	0.262
Magnesium	03/31/98	1102	NLE	2.624
Manganese	03/31/98	64.37	NLE	0.066
Mercury	03/27/98	0.092	14	0.012
Nickel	03/31/98	16.19	250	0.066
Potassium	03/31/98	3165	NLE	2.624
Selenium	03/31/98	0.952	63	0.394
Silver	03/31/98	ND	110	0.394
Sodium	03/31/98	25.22	NLE	2.624
Thallium	03/31/98	ND	2	0.394
Vanadium	03/31/98	29.96	370	0.131
Zinc	03/31/98	195.6	1500	0.131

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.10
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-24

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3407	NLE	1.017
Antimony	03/31/98	0.458	14	0.203
Arsenic	03/31/98	2.446	20	0.203
Barium	03/31/98	18.26	700	0.051
Beryllium	03/31/98	0.2194	1	0.051
Cadmium	03/31/98	0.2835	1	0.051
Calcium	03/31/98	445.1	NLE	2.034
Chromium	03/31/98	19.37	NLE	0.051
Cobalt	03/31/98	0.5124	NLE	0.051
Copper	03/31/98	7.057	600	0.305
Iron	03/31/98	4743	NLE	1.017
Lead	03/31/98	13.96	100	0.203
Magnesium	03/31/98	555.1	NLE	2.034
Manganese	03/31/98	14.35	NLE	0.051
Mercury	03/27/98	0.031	14	0.011
Nickel	03/31/98	2.344	250	0.051
Potassium	03/31/98	1315	NLE	2.034
Selenium	03/31/98	ND	63	0.305
Silver	03/31/98	ND	110	0.305
Sodium	03/31/98	61.06	NLE	2.034
Thallium	03/31/98	ND	2	0.305
Vanadium	03/31/98	13.33	370	0.102
Zinc	03/31/98	38.34	1500	0.102

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.12
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-25

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4485	NLE	1.058
Antimony	03/31/98	0.787	14	0.212
Arsenic	03/31/98	6.348	20	0.212
Barium	03/31/98	31.35	700	0.053
Beryllium	03/31/98	0.3329	1	0.053
Cadmium	03/31/98	1.219	1	0.053
Calcium	03/31/98	530.7	NLE	2.116
Chromium	03/31/98	31.53	NLE	0.053
Cobalt	03/31/98	0.9139	NLE	0.053
Copper	03/31/98	13.97	600	0.317
Iron	03/31/98	8822	NLE	1.058
Lead	03/31/98	33.86	100	0.212
Magnesium	03/31/98	689.6	NLE	2.116
Manganese	03/31/98	9.481	NLE	0.053
Mercury	03/27/98	0.160	14	0.011
Nickel	03/31/98	4.075	250	0.053
Potassium	03/31/98	1472	NLE	2.116
Selenium	03/31/98	0.341	63	0.317
Silver	03/31/98	ND	110	0.317
Sodium	03/31/98	50.03	NLE	2.116
Thallium	03/31/98	ND	2	0.317
Vanadium	03/31/98	22.48	370	0.106
Zinc	03/31/98	120.4	1500	0.106

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.14
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-26

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	2628	NLE	1.207
Antimony	03/31/98	0.371	14	0.241
Arsenic	03/31/98	1.722	20	0.241
Barium	03/31/98	7.015	700	0.060
Beryllium	03/31/98	0.1691	1	0.060
Cadmium	03/31/98	ND	1	0.060
Calcium	03/31/98	273.4	NLE	2.415
Chromium	03/31/98	17.93	NLE	0.060
Cobalt	03/31/98	0.6978	NLE	0.060
Copper	03/31/98	5.848	600	0.362
Iron	03/31/98	4258	NLE	1.207
Lead	03/31/98	6.379	100	0.241
Magnesium	03/31/98	440.2	NLE	2.415
Manganese	03/31/98	10.97	NLE	0.060
Mercury	03/27/98	0.020	14	0.011
Nickel	03/31/98	1.512	250	0.060
Potassium	03/31/98	711.2	NLE	2.415
Selenium	03/31/98	ND	63	0.362
Silver	03/31/98	ND	110	0.362
Sodium	03/31/98	24.80	NLE	2.415
Thallium	03/31/98	ND	2	0.362
Vanadium	03/31/98	11.77	370	0.121
Zinc	03/31/98	26.73	1500	0.121

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.16
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-27

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8444	NLE	1.289
Antimony	03/31/98	2.104	14	0.258
Arsenic	03/31/98	21.54	20	0.258
Barium	03/31/98	14.10	700	0.064
Beryllium	03/31/98	0.9307	1	0.064
Cadmium	03/31/98	ND	1	0.064
Calcium	03/31/98	1138	NLE	2.578
Chromium	03/31/98	125.1	NLE	0.064
Cobalt	03/31/98	0.7505	NLE	0.064
Copper	03/31/98	21.01	600	0.387
Iron	03/31/98	20310	NLE	1.289
Lead	03/31/98	18.90	100	0.258
Magnesium	03/31/98	2896	NLE	2.578
Manganese	03/31/98	20.80	NLE	0.064
Mercury	03/27/98	0.013	14	0.012
Nickel	03/31/98	3.944	250	0.064
Potassium	03/31/98	5945	NLE	2.578
Selenium	03/31/98	ND	63	0.387
Silver	03/31/98	ND	110	0.387
Sodium	03/31/98	86.46	NLE	2.578
Thallium	03/31/98	ND	2	0.387
Vanadium	03/31/98	16.77	370	0.129
Zinc	03/31/98	45.95	1500	0.129

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.18
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-28

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8185	NLE	0.987
Antimony	03/31/98	1.951	14	0.197
Arsenic	03/31/98	19.35	20	0.197
Barium	03/31/98	13.03	700	0.049
Beryllium	03/31/98	0.9068	1	0.049
Cadmium	03/31/98	ND	1	0.049
Calcium	03/31/98	2421	NLE	1.974
Chromium	03/31/98	131.8	NLE	0.049
Cobalt	03/31/98	0.6415	NLE	0.049
Copper	03/31/98	5.498	600	0.296
Iron	03/31/98	21280	NLE	0.987
Lead	03/31/98	4.030	100	0.197
Magnesium	03/31/98	3065	NLE	1.974
Manganese	03/31/98	17.65	NLE	0.049
Mercury	03/27/98	0.013	14	0.012
Nickel	03/31/98	3.926	250	0.049
Potassium	03/31/98	6312	NLE	1.974
Selenium	03/31/98	ND	63	0.296
Silver	03/31/98	ND	110	0.296
Sodium	03/31/98	65.74	NLE	1.974
Thallium	03/31/98	ND	2	0.296
Vanadium	03/31/98	19.77	370	0.099
Zinc	03/31/98	27.66	1500	0.099

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.20
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-29

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	7810	NLE	1.299
Antimony	03/31/98	1.980	14	0.260
Arsenic	03/31/98	24.33	20	0.260
Barium	03/31/98	9.416	700	0.065
Beryllium	03/31/98	0.9298	1	0.065
Cadmium	03/31/98	ND	1	0.065
Calcium	03/31/98	832.5	NLE	2.599
Chromium	03/31/98	123.9	NLE	0.065
Cobalt	03/31/98	0.8132	NLE	0.065
Copper	03/31/98	5.660	600	0.390
Iron	03/31/98	18960	NLE	1.299
Lead	03/31/98	4.268	100	0.260
Magnesium	03/31/98	3019	NLE	2.599
Manganese	03/31/98	14.72	NLE	0.065
Mercury	03/27/98	ND	14	0.013
Nickel	03/31/98	3.968	250	0.065
Potassium	03/31/98	6000	NLE	2.599
Selenium	03/31/98	ND	63	0.390
Silver	03/31/98	ND	110	0.390
Sodium	03/31/98	65.74	NLE	2.599
Thallium	03/31/98	ND	2	0.390
Vanadium	03/31/98	16.38	370	0.130
Zinc	03/31/98	28.30	1500	0.130

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3425.22
Sample Received: 03/23/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-30

TAL-METALS RESULTS SUMMARY (mg/Kg)

Element	Date Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5413	NLE	1.263
Antimony	03/31/98	1.448	14	0.253
Arsenic	03/31/98	14.68	20	0.253
Barium	03/31/98	70.55	700	0.063
Beryllium	03/31/98	0.6609	1	0.063
Cadmium	03/31/98	0.1488	1	0.063
Calcium	03/31/98	1231	NLE	2.526
Chromium	03/31/98	67.89	NLE	0.063
Cobalt	03/31/98	1.317	NLE	0.063
Copper	03/31/98	47.89	600	0.379
Iron	03/31/98	16300	NLE	1.263
Lead	03/31/98	56.31	100	0.253
Magnesium	03/31/98	1883	NLE	2.526
Manganese	03/31/98	46.26	NLE	0.063
Mercury	03/27/98	0.108	14	0.011
Nickel	03/31/98	4.600	250	0.063
Potassium	03/31/98	5250	NLE	2.526
Selenium	03/31/98	ND	63	0.379
Silver	03/31/98	ND	110	0.379
Sodium	03/31/98	135.0	NLE	2.526
Thallium	03/31/98	ND	2	0.379
Vanadium	03/31/98	18.24	370	0.126
Zinc	03/31/98	65.28	1500	0.126

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.02
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-31

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4364	NLE	1.312
Antimony	03/31/98	1.060	14	0.262
Arsenic	03/31/98	11.32	20	0.262
Barium	03/31/98	61.24	700	0.066
Beryllium	03/31/98	0.5325	1	0.066
Cadmium	03/31/98	0.1458	1	0.066
Calcium	03/31/98	1396	NLE	2.623
Chromium	03/31/98	54.13	NLE	0.066
Cobalt	03/31/98	1.087	NLE	0.066
Copper	03/31/98	20.64	600	0.393
Iron	03/31/98	13620	NLE	1.312
Lead	03/31/98	32.83	100	0.262
Magnesium	03/31/98	1631	NLE	2.623
Manganese	03/31/98	37.65	NLE	0.066
Mercury	04/01/98	0.076	14	0.012
Nickel	03/31/98	3.909	250	0.066
Potassium	03/31/98	4738	NLE	2.623
Selenium	03/31/98	0.450	63	0.393
Silver	03/31/98	ND	110	0.393
Sodium	03/31/98	81.76	NLE	2.623
Thallium	03/31/98	ND	2	0.393
Vanadium	03/31/98	16.48	370	0.131
Zinc	03/31/98	54.90	1500	0.131

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.04
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-32

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5564	NLE	1.287
Antimony	03/31/98	0.687	14	0.257
Arsenic	03/31/98	8.863	20	0.257
Barium	03/31/98	46.39	700	0.064
Beryllium	03/31/98	0.5311	1	0.064
Cadmium	03/31/98	0.2347	1	0.064
Calcium	03/31/98	1394	NLE	2.574
Chromium	03/31/98	43.96	NLE	0.064
Cobalt	03/31/98	1.799	NLE	0.064
Copper	03/31/98	35.33	600	0.386
Iron	03/31/98	12970	NLE	1.287
Lead	03/31/98	45.47	100	0.257
Magnesium	03/31/98	1474	NLE	2.574
Manganese	03/31/98	64.16	NLE	0.064
Mercury	04/01/98	0.073	14	0.013
Nickel	03/31/98	7.046	250	0.064
Potassium	03/31/98	3611	NLE	2.574
Selenium	03/31/98	0.683	63	0.386
Silver	03/31/98	ND	110	0.386
Sodium	03/31/98	174.0	NLE	2.574
Thallium	03/31/98	ND	2	0.386
Vanadium	03/31/98	21.78	370	0.129
Zinc	03/31/98	57.21	1500	0.129

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.06
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-33

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	11890	NLE	1.219
Antimony	03/31/98	2.650	14	0.244
Arsenic	03/31/98	14.73	20	0.244
Barium	03/31/98	45.66	700	0.061
Beryllium	03/31/98	1.329	1	0.061
Cadmium	03/31/98	0.1126	1	0.061
Calcium	03/31/98	1671	NLE	2.439
Chromium	03/31/98	142.8	NLE	0.061
Cobalt	03/31/98	1.703	NLE	0.061
Copper	03/31/98	25.16	600	0.366
Iron	03/31/98	31800	NLE	1.219
Lead	03/31/98	45.28	100	0.244
Magnesium	03/31/98	4675	NLE	2.439
Manganese	03/31/98	55.22	NLE	0.061
Mercury	04/01/98	0.102	14	0.012
Nickel	03/31/98	7.272	250	0.061
Potassium	03/31/98	9811	NLE	2.439
Selenium	03/31/98	ND	63	0.366
Silver	03/31/98	ND	110	0.366
Sodium	03/31/98	158.7	NLE	2.439
Thallium	03/31/98	ND	2	0.366
Vanadium	03/31/98	47.65	370	0.122
Zinc	03/31/98	79.91	1500	0.122

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.08
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-34

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8151	NLE	1.244
Antimony	03/31/98	2.078	14	0.249
Arsenic	03/31/98	11.10	20	0.249
Barium	03/31/98	48.79	700	0.062
Beryllium	03/31/98	0.8959	1	0.062
Cadmium	03/31/98	0.1174	1	0.062
Calcium	03/31/98	2981	NLE	2.489
Chromium	03/31/98	127.6	NLE	0.062
Cobalt	03/31/98	1.563	NLE	0.062
Copper	03/31/98	89.97	600	0.373
Iron	03/31/98	20940	NLE	1.244
Lead	03/31/98	37.17	100	0.249
Magnesium	03/31/98	2802	NLE	2.489
Manganese	03/31/98	34.04	NLE	0.062
Mercury	04/01/98	0.077	14	0.013
Nickel	03/31/98	5.997	250	0.062
Potassium	03/31/98	5084	NLE	2.489
Selenium	03/31/98	ND	63	0.373
Silver	03/31/98	ND	110	0.373
Sodium	03/31/98	147.4	NLE	2.489
Thallium	03/31/98	ND	2	0.373
Vanadium	03/31/98	33.17	370	0.124
Zinc	03/31/98	59.09	1500	0.124

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.10
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-35

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	6575	NLE	1.081
Antimony	03/31/98	1.272	14	0.216
Arsenic	03/31/98	11.02	20	0.216
Barium	03/31/98	40.17	700	0.054
Beryllium	03/31/98	0.7196	1	0.054
Cadmium	03/31/98	0.3434	1	0.054
Calcium	03/31/98	960.9	NLE	2.161
Chromium	03/31/98	72.95	NLE	0.054
Cobalt	03/31/98	1.172	NLE	0.054
Copper	03/31/98	23.25	600	0.324
Iron	03/31/98	18550	NLE	1.081
Lead	03/31/98	33.38	100	0.216
Magnesium	03/31/98	2070	NLE	2.161
Manganese	03/31/98	25.04	NLE	0.054
Mercury	04/01/98	0.082	14	0.012
Nickel	03/31/98	5.129	250	0.054
Potassium	03/31/98	6139	NLE	2.161
Selenium	03/31/98	0.490	63	0.324
Silver	03/31/98	ND	110	0.324
Sodium	03/31/98	153.7	NLE	2.161
Thallium	03/31/98	ND	2	0.324
Vanadium	03/31/98	24.74	370	0.108
Zinc	03/31/98	58.70	1500	0.108

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.12
Sample Received: 03/10/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-36

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	1855	NLE	1.157
Antimony	03/31/98	0.426	14	0.231
Arsenic	03/31/98	1.315	20	0.231
Barium	03/31/98	5.639	700	0.058
Beryllium	03/31/98	0.1270	1	0.058
Cadmium	03/31/98	ND	1	0.058
Calcium	03/31/98	996.7	NLE	2.313
Chromium	03/31/98	23.75	NLE	0.058
Cobalt	03/31/98	0.2485	NLE	0.058
Copper	03/31/98	24.37	600	0.347
Iron	03/31/98	3564	NLE	1.157
Lead	03/31/98	3.324	100	0.231
Magnesium	03/31/98	314.8	NLE	2.313
Manganese	03/31/98	5.719	NLE	0.058
Mercury	04/01/98	0.031	14	0.011
Nickel	03/31/98	1.095	250	0.058
Potassium	03/31/98	424.6	NLE	2.313
Selenium	03/31/98	ND	63	0.347
Silver	03/31/98	ND	110	0.347
Sodium	03/31/98	88.89	NLE	2.313
Thallium	03/31/98	ND	2	0.347
Vanadium	03/31/98	11.45	370	0.116
Zinc	03/31/98	9.468	1500	0.116

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.14
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-37

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3235	NLE	1.339
Antimony	03/31/98	0.474	14	0.268
Arsenic	03/31/98	3.544	20	0.268
Barium	03/31/98	45.59	700	0.067
Beryllium	03/31/98	0.8634	1	0.067
Cadmium	03/31/98	0.5593	1	0.067
Calcium	03/31/98	1143	NLE	2.677
Chromium	03/31/98	5.249	NLE	0.067
Cobalt	03/31/98	4.283	NLE	0.067
Copper	03/31/98	26.39	600	0.402
Iron	03/31/98	1569	NLE	1.339
Lead	03/31/98	18.56	100	0.268
Magnesium	03/31/98	96.27	NLE	2.677
Manganese	03/31/98	38.80	NLE	0.067
Mercury	04/01/98	0.084	14	0.014
Nickel	03/31/98	11.74	250	0.067
Potassium	03/31/98	265.2	NLE	2.677
Selenium	03/31/98	ND	63	0.402
Silver	03/31/98	ND	110	0.402
Sodium	03/31/98	115.3	NLE	2.677
Thallium	03/31/98	ND	2	0.402
Vanadium	03/31/98	10.93	370	0.134
Zinc	03/31/98	181.7	1500	0.134

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.16
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-38

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3410	NLE	1.313
Antimony	03/31/98	0.801	14	0.263
Arsenic	03/31/98	12.05	20	0.263
Barium	03/31/98	128.7	700	0.066
Beryllium	03/31/98	0.4662	1	0.066
Cadmium	03/31/98	0.2638	1	0.066
Calcium	03/31/98	1109	NLE	2.625
Chromium	03/31/98	29.69	NLE	0.066
Cobalt	03/31/98	2.585	NLE	0.066
Copper	03/31/98	44.16	600	0.394
Iron	03/31/98	13290	NLE	1.313
Lead	03/31/98	129.4	100	0.263
Magnesium	03/31/98	820.2	NLE	2.625
Manganese	03/31/98	66.82	NLE	0.066
Mercury	04/01/98	0.212	14	0.012
Nickel	03/31/98	6.638	250	0.066
Potassium	03/31/98	2133	NLE	2.625
Selenium	03/31/98	1.126	63	0.394
Silver	03/31/98	ND	110	0.394
Sodium	03/31/98	130.1	NLE	2.625
Thallium	03/31/98	ND	2	0.394
Vanadium	03/31/98	13.96	370	0.131
Zinc	03/31/98	84.81	1500	0.131

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.18
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-39

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3162	NLE	1.167
Antimony	03/31/98	1.016	14	0.233
Arsenic	03/31/98	9.484	20	0.233
Barium	03/31/98	17.24	700	0.058
Beryllium	03/31/98	0.3693	1	0.058
Cadmium	03/31/98	0.4148	1	0.058
Calcium	03/31/98	931.5	NLE	2.335
Chromium	03/31/98	27.07	NLE	0.058
Cobalt	03/31/98	3.301	NLE	0.058
Copper	03/31/98	37.37	600	0.350
Iron	03/31/98	16380	NLE	1.167
Lead	03/31/98	40.67	100	0.233
Magnesium	03/31/98	460.3	NLE	2.335
Manganese	03/31/98	46.57	NLE	0.058
Mercury	04/01/98	0.054	14	0.012
Nickel	03/31/98	10.18	250	0.058
Potassium	03/31/98	997.4	NLE	2.335
Selenium	03/31/98	1.046	63	0.350
Silver	03/31/98	ND	110	0.350
Sodium	03/31/98	50.75	NLE	2.335
Thallium	03/31/98	ND	2	0.350
Vanadium	03/31/98	19.15	370	0.117
Zinc	03/31/98	157.7	1500	0.117

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.20
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-40

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5132	NLE	1.184
Antimony	03/31/98	1.075	14	0.237
Arsenic	03/31/98	11.61	20	0.237
Barium	03/31/98	71.02	700	0.059
Beryllium	03/31/98	0.6631	1	0.059
Cadmium	03/31/98	0.1471	1	0.059
Calcium	03/31/98	1317	NLE	2.368
Chromium	03/31/98	63.37	NLE	0.059
Cobalt	03/31/98	1.679	NLE	0.059
Copper	03/31/98	23.91	600	0.355
Iron	03/31/98	15810	NLE	1.184
Lead	03/31/98	35.42	100	0.237
Magnesium	03/31/98	1663	NLE	2.368
Manganese	03/31/98	34.75	NLE	0.059
Mercury	04/01/98	0.100	14	0.012
Nickel	03/31/98	5.603	250	0.059
Potassium	03/31/98	5385	NLE	2.368
Selenium	03/31/98	1.198	63	0.355
Silver	03/31/98	ND	110	0.355
Sodium	03/31/98	319.1	NLE	2.368
Thallium	03/31/98	ND	2	0.355
Vanadium	03/31/98	16.68	370	0.118
Zinc	03/31/98	58.14	1500	0.118

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3428.22
Sample Received: 03/20/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-41

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	6090	NLE	1.242
Antimony	03/31/98	1.380	14	0.248
Arsenic	03/31/98	9.922	20	0.248
Barium	03/31/98	84.03	700	0.062
Beryllium	03/31/98	0.6972	1	0.062
Cadmium	03/31/98	0.8425	1	0.062
Calcium	03/31/98	1478	NLE	2.485
Chromium	03/31/98	56.51	NLE	0.062
Cobalt	03/31/98	1.863	NLE	0.062
Copper	03/31/98	58.75	600	0.373
Iron	03/31/98	16560	NLE	1.242
Lead	03/31/98	82.95	100	0.248
Magnesium	03/31/98	1584	NLE	2.485
Manganese	03/31/98	50.74	NLE	0.062
Mercury	04/01/98	0.136	14	0.012
Nickel	03/31/98	10.42	250	0.062
Potassium	03/31/98	4839	NLE	2.485
Selenium	03/31/98	ND	63	0.373
Silver	03/31/98	ND	110	0.373
Sodium	03/31/98	105.6	NLE	2.485
Thallium	03/31/98	ND	2	0.373
Vanadium	03/31/98	25.89	370	0.124
Zinc	03/31/98	129.7	1500	0.124

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.02
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-42

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5180	NLE	1.210
Antimony	03/31/98	0.690	14	0.242
Arsenic	03/31/98	11.23	20	0.242
Barium	03/31/98	49.63	700	0.061
Beryllium	03/31/98	1.5599	1	0.061
Cadmium	03/31/98	0.1605	1	0.061
Calcium	03/31/98	1111	NLE	2.421
Chromium	03/31/98	46.02	NLE	0.061
Cobalt	03/31/98	1.767	NLE	0.061
Copper	03/31/98	61.41	600	0.363
Iron	03/31/98	16950	NLE	1.210
Lead	03/31/98	49.10	100	0.242
Magnesium	03/31/98	1388	NLE	2.421
Manganese	03/31/98	49.29	NLE	0.061
Mercury	04/01/98	0.113	14	0.012
Nickel	03/31/98	6.326	250	0.061
Potassium	03/31/98	3470	NLE	2.421
Selenium	03/31/98	ND	63	0.363
Silver	03/31/98	ND	110	0.363
Sodium	03/31/98	61.41	NLE	2.421
Thallium	03/31/98	ND	2	0.363
Vanadium	03/31/98	19.26	370	0.121
Zinc	03/31/98	68.39	1500	0.121

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.04
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-43

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	10420	NLE	1.240
Antimony	03/31/98	2.230	14	0.248
Arsenic	03/31/98	16.21	20	0.248
Barium	03/31/98	54.09	700	0.062
Beryllium	03/31/98	1.267	1	0.062
Cadmium	03/31/98	ND	1	0.062
Calcium	03/31/98	1687	NLE	2.481
Chromium	03/31/98	134.0	NLE	0.062
Cobalt	03/31/98	1.629	NLE	0.062
Copper	03/31/98	25.73	600	0.372
Iron	03/31/98	29340	NLE	1.240
Lead	03/31/98	37.93	100	0.248
Magnesium	03/31/98	4127	NLE	2.481
Manganese	03/31/98	41.07	NLE	0.062
Mercury	04/01/98	0.078	14	0.011
Nickel	03/31/98	6.554	250	0.062
Potassium	03/31/98	9093	NLE	2.481
Selenium	03/31/98	ND	63	0.372
Silver	03/31/98	ND	110	0.372
Sodium	03/31/98	162.2	NLE	2.481
Thallium	03/31/98	ND	2	0.372
Vanadium	03/31/98	43.12	370	0.124
Zinc	03/31/98	78.77	1500	0.124

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.06
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-44

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8551	NLE	1.066
Antimony	03/31/98	0.696	14	0.213
Arsenic	03/31/98	10.00	20	0.213
Barium	03/31/98	49.56	700	0.053
Beryllium	03/31/98	0.5654	1	0.053
Cadmium	03/31/98	0.2881	1	0.053
Calcium	03/31/98	1054	NLE	2.132
Chromium	03/31/98	37.94	NLE	0.053
Cobalt	03/31/98	2.152	NLE	0.053
Copper	03/31/98	39.89	600	0.320
Iron	03/31/98	14440	NLE	1.066
Lead	03/31/98	54.89	100	0.213
Magnesium	03/31/98	1113	NLE	2.132
Manganese	03/31/98	60.75	NLE	0.053
Mercury	04/01/98	0.095	14	0.012
Nickel	03/31/98	6.718	250	0.053
Potassium	03/31/98	2890	NLE	2.132
Selenium	03/31/98	0.334	63	0.320
Silver	03/31/98	ND	110	0.320
Sodium	03/31/98	94.87	NLE	2.132
Thallium	03/31/98	ND	2	0.320
Vanadium	03/31/98	16.99	370	0.107
Zinc	03/31/98	87.89	1500	0.107

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.08
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-45

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	1757	NLE	1.137
Antimony	03/31/98	5.670	14	0.227
Arsenic	03/31/98	4.379	20	0.227
Barium	03/31/98	28.44	700	0.057
Beryllium	03/31/98	0.1800	1	0.057
Cadmium	03/31/98	0.1212	1	0.057
Calcium	03/31/98	475.2	NLE	2.275
Chromium	03/31/98	10.56	NLE	0.057
Cobalt	03/31/98	0.9717	NLE	0.057
Copper	03/31/98	9.757	600	0.341
Iron	03/31/98	3999	NLE	1.137
Lead	03/31/98	28.98	100	0.227
Magnesium	03/31/98	286.6	NLE	2.275
Manganese	03/31/98	17.01	NLE	0.057
Mercury	04/01/98	0.113	14	0.013
Nickel	03/31/98	4.667	250	0.057
Potassium	03/31/98	307.1	NLE	2.275
Selenium	03/31/98	ND	63	0.341
Silver	03/31/98	ND	110	0.341
Sodium	03/31/98	52.82	NLE	2.275
Thallium	03/31/98	ND	2	0.341
Vanadium	03/31/98	8.171	370	0.114
Zinc	03/31/98	35.31	1500	0.114

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.10
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-46

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	4696	NLE	1.203
Antimony	03/31/98	0.979	14	0.241
Arsenic	03/31/98	8.333	20	0.241
Barium	03/31/98	82.10	700	0.060
Beryllium	03/31/98	0.6231	1	0.060
Cadmium	03/31/98	0.1333	1	0.060
Calcium	03/31/98	810.8	NLE	2.406
Chromium	03/31/98	43.98	NLE	0.060
Cobalt	03/31/98	2.176	NLE	0.060
Copper	03/31/98	41.31	600	0.361
Iron	03/31/98	12530	NLE	1.203
Lead	03/31/98	28.24	100	0.241
Magnesium	03/31/98	1346	NLE	2.406
Manganese	03/31/98	27.42	NLE	0.060
Mercury	04/01/98	0.102	14	0.012
Nickel	03/31/98	6.517	250	0.060
Potassium	03/31/98	3777	NLE	2.406
Selenium	03/31/98	0.777	63	0.361
Silver	03/31/98	ND	110	0.361
Sodium	03/31/98	123.6	NLE	2.406
Thallium	03/31/98	ND	2	0.361
Vanadium	03/31/98	18.76	370	0.120
Zinc	03/31/98	40.08	1500	0.120

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.12
Sample Received: 03/15/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-47

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3458	NLE	1.224
Antimony	03/31/98	0.451	14	0.245
Arsenic	03/31/98	4.976	20	0.245
Barium	03/31/98	34.50	700	0.061
Beryllium	03/31/98	0.3267	1	0.061
Cadmium	03/31/98	0.2149	1	0.061
Calcium	03/31/98	529.5	NLE	2.449
Chromium	03/31/98	18.74	NLE	0.061
Cobalt	03/31/98	1.182	NLE	0.061
Copper	03/31/98	19.19	600	0.367
Iron	03/31/98	7228	NLE	1.224
Lead	03/31/98	56.02	100	0.245
Magnesium	03/31/98	619.9	NLE	2.449
Manganese	03/31/98	26.87	NLE	0.061
Mercury	04/01/98	0.140	14	0.012
Nickel	03/31/98	3.272	250	0.061
Potassium	03/31/98	1120	NLE	2.449
Selenium	03/31/98	ND	63	0.367
Silver	03/31/98	ND	110	0.367
Sodium	03/31/98	67.61	NLE	2.449
Thallium	03/31/98	ND	2	0.367
Vanadium	03/31/98	11.81	370	0.122
Zinc	03/31/98	44.42	1500	0.122

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.14
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-48

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	8286	NLE	1.224
Antimony	03/31/98	0.969	14	0.245
Arsenic	03/31/98	8.409	20	0.245
Barium	03/31/98	26.35	700	0.061
Beryllium	03/31/98	0.7705	1	0.061
Cadmium	03/31/98	ND	1	0.061
Calcium	03/31/98	753.4	NLE	2.448
Chromium	03/31/98	61.33	NLE	0.061
Cobalt	03/31/98	1.755	NLE	0.061
Copper	03/31/98	12.98	600	0.367
Iron	03/31/98	18920	NLE	1.224
Lead	03/31/98	36.42	100	0.245
Magnesium	03/31/98	2045	NLE	2.448
Manganese	03/31/98	37.70	NLE	0.061
Mercury	04/01/98	0.166	14	0.011
Nickel	03/31/98	5.857	250	0.061
Potassium	03/31/98	6228	NLE	2.448
Selenium	03/31/98	ND	63	0.367
Silver	03/31/98	ND	110	0.367
Sodium	03/31/98	124.6	NLE	2.448
Thallium	03/31/98	ND	2	0.367
Vanadium	03/31/98	33.25	370	0.122
Zinc	03/31/98	50.77	1500	0.122

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.16
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-49

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	3854	NLE	1.213
Antimony	03/31/98	0.565	14	0.243
Arsenic	03/31/98	8.337	20	0.243
Barium	03/31/98	35.95	700	0.061
Beryllium	03/31/98	0.4051	1	0.061
Cadmium	03/31/98	0.0833	1	0.061
Calcium	03/31/98	1062	NLE	2.426
Chromium	03/31/98	37.89	NLE	0.061
Cobalt	03/31/98	0.9757	NLE	0.061
Copper	03/31/98	8.154	600	0.364
Iron	03/31/98	11470	NLE	1.213
Lead	03/31/98	18.73	100	0.243
Magnesium	03/31/98	1166	NLE	2.426
Manganese	03/31/98	21.86	NLE	0.061
Mercury	04/01/98	0.087	14	0.012
Nickel	03/31/98	3.606	250	0.061
Potassium	03/31/98	3119	NLE	2.426
Selenium	03/31/98	ND	63	0.364
Silver	03/31/98	ND	110	0.364
Sodium	03/31/98	43.61	NLE	2.426
Thallium	03/31/98	ND	2	0.364
Vanadium	03/31/98	12.98	370	0.121
Zinc	03/31/98	42.09	1500	0.121

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.18
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-50

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	5679	NLE	1.212
Antimony	03/31/98	0.618	14	0.242
Arsenic	03/31/98	7.217	20	0.242
Barium	03/31/98	21.40	700	0.061
Beryllium	03/31/98	0.5608	1	0.061
Cadmium	03/31/98	ND	1	0.061
Calcium	03/31/98	640.5	NLE	2.424
Chromium	03/31/98	35.65	NLE	0.061
Cobalt	03/31/98	2.081	NLE	0.061
Copper	03/31/98	10.21	600	0.364
Iron	03/31/98	14250	NLE	1.212
Lead	03/31/98	27.98	100	0.242
Magnesium	03/31/98	1031	NLE	2.424
Manganese	03/31/98	49.01	NLE	0.061
Mercury	04/01/98	0.057	14	0.012
Nickel	03/31/98	4.805	250	0.061
Potassium	03/31/98	2451	NLE	2.424
Selenium	03/31/98	ND	63	0.364
Silver	03/31/98	ND	110	0.364
Sodium	03/31/98	32.32	NLE	2.424
Thallium	03/31/98	ND	2	0.364
Vanadium	03/31/98	21.22	370	0.121
Zinc	03/31/98	45.21	1500	0.121

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3432.20
Sample Received: 03/25/98
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: B-51

TAL-METALS RESULTS SUMMARY (ppm)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	03/31/98	6382	NLE	1.144
Antimony	03/31/98	0.707	14	0.229
Arsenic	03/31/98	9.589	20	0.229
Barium	03/31/98	29.13	700	0.057
Beryllium	03/31/98	0.6929	1	0.057
Cadmium	03/31/98	ND	1	0.057
Calcium	03/31/98	1341	NLE	2.288
Chromium	03/31/98	48.86	NLE	0.057
Cobalt	03/31/98	1.857	NLE	0.057
Copper	03/31/98	30.46	600	0.343
Iron	03/31/98	17640	NLE	1.144
Lead	03/31/98	28.40	100	0.229
Magnesium	03/31/98	1523	NLE	2.288
Manganese	03/31/98	45.29	NLE	0.057
Mercury	04/01/98	0.102	14	0.011
Nickel	03/31/98	5.213	250	0.057
Potassium	03/31/98	4066	NLE	2.288
Selenium	03/31/98	ND	63	0.343
Silver	03/31/98	ND	110	0.343
Sodium	03/31/98	37.33	NLE	2.288
Thallium	03/31/98	ND	2	0.343
Vanadium	03/31/98	23.79	370	0.114
Zinc	03/31/98	69.75	1500	0.114

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.02
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-52, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	20800	NLE	2.232
Antimony	09/01/99	ND	14	0.446
Arsenic	09/01/99	27.2	20	0.446
Barium	09/01/99	26.9	700	0.112
Beryllium	09/01/99	2.65	1	0.112
Cadmium	09/01/99	2.43	1	0.112
Calcium	09/01/99	1130	NLE	4.465
Chromium	09/01/99	333	NLE	0.112
Cobalt	09/01/99	1.17	NLE	0.112
Copper	09/01/99	23.3	600	0.670
Iron	09/01/99	68500	NLE	2.232
Lead	09/01/99	38.8	400	0.446
Magnesium	09/01/99	10800	NLE	4.465
Manganese	09/01/99	35.1	NLE	0.112
Mercury	09/01/99	0.077	14	0.026
Nickel	09/01/99	7.81	250	0.112
Potassium	09/01/99	24100	NLE	4.465
Selenium	09/01/99	1.42	63	0.670
Silver	09/01/99	ND	110	0.670
Sodium	09/01/99	165	NLE	4.465
Thallium	09/01/99	ND	2	0.670
Vanadium	09/01/99	125	370	0.223
Zinc	09/01/99	87.7	1500	0.223

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.04
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-53, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	15300	NLE	2.067
Antimony	09/01/99	ND	14	0.413
Arsenic	09/01/99	19.1	20	0.413
Barium	09/01/99	35.2	700	0.103
Beryllium	09/01/99	2.14	1	0.103
Cadmium	09/01/99	1.96	1	0.103
Calcium	09/01/99	2270	NLE	4.134
Chromium	09/01/99	237	NLE	0.103
Cobalt	09/01/99	1.08	NLE	0.103
Copper	09/01/99	20.5	600	0.620
Iron	09/01/99	53200	NLE	2.067
Lead	09/01/99	16.0	400	0.413
Magnesium	09/01/99	7670	NLE	4.134
Manganese	09/01/99	28.6	NLE	0.103
Mercury	09/01/99	0.132	14	0.026
Nickel	09/01/99	7.18	250	0.103
Potassium	09/01/99	18400	NLE	4.134
Selenium	09/01/99	1.74	63	0.620
Silver	09/01/99	ND	110	0.620
Sodium	09/01/99	325	NLE	4.134
Thallium	09/01/99	ND	2	0.620
Vanadium	09/01/99	83.5	370	0.207
Zinc	09/01/99	82.3	1500	0.207

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.06
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-54, 2-8"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	19000	NLE	2.234
Antimony	09/01/99	1.12	14	0.447
Arsenic	09/01/99	46.9	20	0.447
Barium	09/01/99	27.6	700	0.112
Beryllium	09/01/99	2.35	1	0.112
Cadmium	09/01/99	2.70	1	0.112
Calcium	09/01/99	1020	NLE	4.469
Chromium	09/01/99	293	NLE	0.112
Cobalt	09/01/99	1.20	NLE	0.112
Copper	09/01/99	24.2	600	0.670
Iron	09/01/99	67000	NLE	2.234
Lead	09/01/99	61.5	400	0.447
Magnesium	09/01/99	9040	NLE	4.469
Manganese	09/01/99	28.0	NLE	0.112
Mercury	09/01/99	0.051	14	0.025
Nickel	09/01/99	9.40	250	0.112
Potassium	09/01/99	21100	NLE	4.469
Selenium	09/01/99	2.23	63	0.670
Silver	09/01/99	ND	110	0.670
Sodium	09/01/99	154	NLE	4.469
Thallium	09/01/99	ND	2	0.670
Vanadium	09/01/99	120	370	0.223
Zinc	09/01/99	114	1500	0.223

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.08
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-55, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	11500	NLE	2.053
Antimony	09/01/99	ND	14	0.411
Arsenic	09/01/99	19.5	20	0.411
Barium	09/01/99	39.4	700	0.103
Beryllium	09/01/99	0.753	1	0.103
Cadmium	09/01/99	0.868	1	0.103
Calcium	09/01/99	598	NLE	4.106
Chromium	09/01/99	84.3	NLE	0.103
Cobalt	09/01/99	1.53	NLE	0.103
Copper	09/01/99	33.6	600	0.616
Iron	09/01/99	26000	NLE	2.053
Lead	09/01/99	41.7	400	0.411
Magnesium	09/01/99	2510	NLE	4.106
Manganese	09/01/99	26.4	NLE	0.103
Mercury	09/01/99	0.151	14	0.025
Nickel	09/01/99	7.84	250	0.103
Potassium	09/01/99	4420	NLE	4.106
Selenium	09/01/99	1.77	63	0.616
Silver	09/01/99	ND	110	0.616
Sodium	09/01/99	187	NLE	4.106
Thallium	09/01/99	ND	2	0.616
Vanadium	09/01/99	55.1	370	0.205
Zinc	09/01/99	48.7	1500	0.205

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.10
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-56, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	7960	NLE	2.456
Antimony	09/01/99	3.53	14	0.491
Arsenic	09/01/99	7.64	20	0.491
Barium	09/01/99	38.6	700	0.123
Beryllium	09/01/99	0.623	1	0.123
Cadmium	09/01/99	0.940	1	0.123
Calcium	09/01/99	1200	NLE	4.911
Chromium	09/01/99	60.4	NLE	0.123
Cobalt	09/01/99	2.23	NLE	0.123
Copper	09/01/99	13.6	600	0.737
Iron	09/01/99	20200	NLE	2.456
Lead	09/01/99	34.6	400	0.491
Magnesium	09/01/99	1330	NLE	4.911
Manganese	09/01/99	24.5	NLE	0.123
Mercury	09/01/99	0.226	14	0.023
Nickel	09/01/99	7.38	250	0.123
Potassium	09/01/99	2980	NLE	4.911
Selenium	09/01/99	ND	63	0.737
Silver	09/01/99	ND	110	0.737
Sodium	09/01/99	97.1	NLE	4.911
Thallium	09/01/99	ND	2	0.737
Vanadium	09/01/99	55.2	370	0.246
Zinc	09/01/99	103	1500	0.246

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.12
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-57, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	11600	NLE	2.534
Antimony	09/01/99	ND	14	0.507
Arsenic	09/01/99	20.5	20	0.507
Barium	09/01/99	7.42	700	0.127
Beryllium	09/01/99	1.55	1	0.127
Cadmium	09/01/99	1.19	1	0.127
Calcium	09/01/99	260	NLE	5.068
Chromium	09/01/99	187	NLE	0.127
Cobalt	09/01/99	0.641	NLE	0.127
Copper	09/01/99	4.81	600	0.760
Iron	09/01/99	37500	NLE	2.534
Lead	09/01/99	6.53	400	0.507
Magnesium	09/01/99	4420	NLE	5.068
Manganese	09/01/99	21.4	NLE	0.127
Mercury	09/01/99	ND	14	0.026
Nickel	09/01/99	6.28	250	0.127
Potassium	09/01/99	10200	NLE	5.068
Selenium	09/01/99	2.46	63	0.760
Silver	09/01/99	ND	110	0.760
Sodium	09/01/99	76.3	NLE	5.068
Thallium	09/01/99	ND	2	0.760
Vanadium	09/01/99	72.5	370	0.253
Zinc	09/01/99	43.5	1500	0.253

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.14
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-58, 4-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	13500	NLE	2.009
Antimony	09/01/99	ND	14	0.402
Arsenic	09/01/99	22.6	20	0.402
Barium	09/01/99	5.25	700	0.100
Beryllium	09/01/99	1.76	1	0.100
Cadmium	09/01/99	1.22	1	0.100
Calcium	09/01/99	931	NLE	4.018
Chromium	09/01/99	200	NLE	0.100
Cobalt	09/01/99	0.493	NLE	0.100
Copper	09/01/99	5.68	600	0.603
Iron	09/01/99	37700	NLE	2.009
Lead	09/01/99	5.24	400	0.402
Magnesium	09/01/99	5510	NLE	4.018
Manganese	09/01/99	15.0	NLE	0.100
Mercury	09/01/99	ND	14	0.024
Nickel	09/01/99	4.51	250	0.100
Potassium	09/01/99	12600	NLE	4.018
Selenium	09/01/99	1.33	63	0.603
Silver	09/01/99	ND	110	0.603
Sodium	09/01/99	180	NLE	4.018
Thallium	09/01/99	ND	2	0.603
Vanadium	09/01/99	81.6	370	0.201
Zinc	09/01/99	38.5	1500	0.201

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.16
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-59, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	8210	NLE	2.284
Antimony	09/01/99	ND	14	0.457
Arsenic	09/01/99	12.7	20	0.457
Barium	09/01/99	40.9	700	0.114
Beryllium	09/01/99	0.513	1	0.114
Cadmium	09/01/99	0.816	1	0.114
Calcium	09/01/99	364	NLE	4.568
Chromium	09/01/99	48.5	NLE	0.114
Cobalt	09/01/99	3.32	NLE	0.114
Copper	09/01/99	7.01	600	0.685
Iron	09/01/99	24100	NLE	2.284
Lead	09/01/99	23.1	400	0.457
Magnesium	09/01/99	703	NLE	4.568
Manganese	09/01/99	55.3	NLE	0.114
Mercury	09/01/99	0.117	14	0.023
Nickel	09/01/99	9.49	250	0.114
Potassium	09/01/99	1480	NLE	4.568
Selenium	09/01/99	1.90	63	0.685
Silver	09/01/99	ND	110	0.685
Sodium	09/01/99	83.2	NLE	4.568
Thallium	09/01/99	ND	2	0.685
Vanadium	09/01/99	65.5	370	0.228
Zinc	09/01/99	41.6	1500	0.228

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.18
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-60, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	14000	NLE	2.063
Antimony	09/01/99	ND	14	0.413
Arsenic	09/01/99	5.53	20	0.413
Barium	09/01/99	21.8	700	0.103
Beryllium	09/01/99	0.379	1	0.103
Cadmium	09/01/99	0.242	1	0.103
Calcium	09/01/99	190	NLE	4.127
Chromium	09/01/99	21.9	NLE	0.103
Cobalt	09/01/99	2.50	NLE	0.103
Copper	09/01/99	1.39	600	0.619
Iron	09/01/99	14300	NLE	2.063
Lead	09/01/99	7.33	400	0.413
Magnesium	09/01/99	855	NLE	4.127
Manganese	09/01/99	38.6	NLE	0.103
Mercury	09/01/99	0.023	14	0.023
Nickel	09/01/99	7.05	250	0.103
Potassium	09/01/99	618	NLE	4.127
Selenium	09/01/99	ND	63	0.619
Silver	09/01/99	ND	110	0.619
Sodium	09/01/99	94.3	NLE	4.127
Thallium	09/01/99	ND	2	0.619
Vanadium	09/01/99	29.2	370	0.206
Zinc	09/01/99	33.1	1500	0.206

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4748.20
Sample Received: 08/26/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-61, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/01/99	4480	NLE	2.172
Antimony	09/01/99	ND	14	0.434
Arsenic	09/01/99	4.05	20	0.434
Barium	09/01/99	6.32	700	0.109
Beryllium	09/01/99	0.330	1	0.109
Cadmium	09/01/99	0.564	1	0.109
Calcium	09/01/99	88.7	NLE	4.345
Chromium	09/01/99	39.1	NLE	0.109
Cobalt	09/01/99	1.27	NLE	0.109
Copper	09/01/99	ND	600	0.652
Iron	09/01/99	12400	NLE	2.172
Lead	09/01/99	2.97	400	0.434
Magnesium	09/01/99	785	NLE	4.345
Manganese	09/01/99	28.6	NLE	0.109
Mercury	09/01/99	0.021	14	0.021
Nickel	09/01/99	2.71	250	0.109
Potassium	09/01/99	1520	NLE	4.345
Selenium	09/01/99	ND	63	0.652
Silver	09/01/99	ND	110	0.652
Sodium	09/01/99	56.0	NLE	4.345
Thallium	09/01/99	ND	2	0.652
Vanadium	09/01/99	36.3	370	0.217
Zinc	09/01/99	16.8	1500	0.217

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.02
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-63, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	13600	NLE	2.212
Antimony	09/09/99	ND	14	0.442
Arsenic	09/09/99	12.6	20	0.442
Barium	09/09/99	74.0	700	0.111
Beryllium	09/09/99	1.95	1	0.111
Cadmium	09/09/99	1.36	1	0.111
Calcium	09/09/99	5780	NLE	4.424
Chromium	09/09/99	215	NLE	0.111
Cobalt	09/09/99	2.03	NLE	0.111
Copper	09/09/99	15.9	600	0.664
Iron	09/09/99	48800	NLE	2.212
Lead	09/09/99	7.58	100	0.442
Magnesium	09/09/99	6900	NLE	4.424
Manganese	09/09/99	52.5	NLE	0.111
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	17.6	250	0.111
Potassium	09/09/99	16200	NLE	4.424
Selenium	09/09/99	1.53	63	0.664
Silver	09/09/99	ND	110	0.664
Sodium	09/09/99	279	NLE	4.424
Thallium	09/09/99	ND	2	0.664
Vanadium	09/09/99	71.6	370	0.221
Zinc	09/09/99	77.3	1500	0.221

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.04
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-64, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	18700	NLE	2.669
Antimony	09/09/99	ND	14	0.534
Arsenic	09/09/99	51.3	20	0.534
Barium	09/09/99	25.3	700	0.133
Beryllium	09/09/99	2.14	1	0.133
Cadmium	09/09/99	0.339	1	0.133
Calcium	09/09/99	555	NLE	5.339
Chromium	09/09/99	251	NLE	0.133
Cobalt	09/09/99	1.30	NLE	0.133
Copper	09/09/99	24.4	600	0.801
Iron	09/09/99	50900	NLE	2.669
Lead	09/09/99	16.1	100	0.534
Magnesium	09/09/99	7490	NLE	5.339
Manganese	09/09/99	37.6	NLE	0.133
Mercury	09/08/99	0.084	14	0.023
Nickel	09/09/99	6.65	250	0.133
Potassium	09/09/99	16700	NLE	5.339
Selenium	09/09/99	0.886	63	0.801
Silver	09/09/99	ND	110	0.801
Sodium	09/09/99	228	NLE	5.339
Thallium	09/09/99	ND	2	0.801
Vanadium	09/09/99	118	370	0.267
Zinc	09/09/99	59.8	1500	0.267

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.06
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-65, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15700	NLE	2.644
Antimony	09/09/99	ND	14	0.529
Arsenic	09/09/99	29.4	20	0.529
Barium	09/09/99	6.35	700	0.132
Beryllium	09/09/99	2.18	1	0.132
Cadmium	09/09/99	0.385	1	0.132
Calcium	09/09/99	290	NLE	5.287
Chromium	09/09/99	256	NLE	0.132
Cobalt	09/09/99	0.874	NLE	0.132
Copper	09/09/99	12.2	600	0.793
Iron	09/09/99	49900	NLE	2.644
Lead	09/09/99	4.73	100	0.529
Magnesium	09/09/99	7580	NLE	5.287
Manganese	09/09/99	19.6	NLE	0.132
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	6.47	250	0.132
Potassium	09/09/99	17300	NLE	5.287
Selenium	09/09/99	ND	63	0.793
Silver	09/09/99	ND	110	0.793
Sodium	09/09/99	191	NLE	5.287
Thallium	09/09/99	ND	2	0.793
Vanadium	09/09/99	112	370	0.264
Zinc	09/09/99	48.9	1500	0.264

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.08
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-66, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	19100	NLE	2.617
Antimony	09/09/99	ND	14	0.523
Arsenic	09/09/99	24.4	20	0.523
Barium	09/09/99	15.0	700	0.131
Beryllium	09/09/99	2.19	1	0.131
Cadmium	09/09/99	0.420	1	0.131
Calcium	09/09/99	447	NLE	5.234
Chromium	09/09/99	266	NLE	0.131
Cobalt	09/09/99	1.36	NLE	0.131
Copper	09/09/99	12.0	600	0.785
Iron	09/09/99	54000	NLE	2.617
Lead	09/09/99	7.94	100	0.523
Magnesium	09/09/99	8040	NLE	5.234
Manganese	09/09/99	36.7	NLE	0.131
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	5.95	250	0.131
Potassium	09/09/99	18000	NLE	5.234
Selenium	09/09/99	0.848	63	0.785
Silver	09/09/99	ND	110	0.785
Sodium	09/09/99	367	NLE	5.234
Thallium	09/09/99	ND	2	0.785
Vanadium	09/09/99	123	370	0.262
Zinc	09/09/99	83.4	1500	0.262

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.10
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-67, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	11700	NLE	2.141
Antimony	09/09/99	ND	14	0.428
Arsenic	09/09/99	14.1	20	0.428
Barium	09/09/99	38.2	700	0.107
Beryllium	09/09/99	0.962	1	0.107
Cadmium	09/09/99	0.360	1	0.107
Calcium	09/09/99	2590	NLE	4.283
Chromium	09/09/99	91.4	NLE	0.107
Cobalt	09/09/99	2.38	NLE	0.107
Copper	09/09/99	14.9	600	0.642
Iron	09/09/99	28600	NLE	2.141
Lead	09/09/99	7.56	100	0.428
Magnesium	09/09/99	3340	NLE	4.283
Manganese	09/09/99	55.7	NLE	0.107
Mercury	09/08/99	0.028	14	0.025
Nickel	09/09/99	6.75	250	0.107
Potassium	09/09/99	6420	NLE	4.283
Selenium	09/09/99	0.882	63	0.642
Silver	09/09/99	ND	110	0.642
Sodium	09/09/99	151	NLE	4.283
Thallium	09/09/99	ND	2	0.642
Vanadium	09/09/99	57.2	370	0.214
Zinc	09/09/99	49.3	1500	0.214

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.12
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-68, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	11700	NLE	1.965
Antimony	09/09/99	ND	14	0.393
Arsenic	09/09/99	6.95	20	0.393
Barium	09/09/99	17.7	700	0.098
Beryllium	09/09/99	1.23	1	0.098
Cadmium	09/09/99	0.308	1	0.098
Calcium	09/09/99	840	NLE	3.930
Chromium	09/09/99	114	NLE	0.098
Cobalt	09/09/99	1.87	NLE	0.098
Copper	09/09/99	4.94	600	0.590
Iron	09/09/99	38200	NLE	1.965
Lead	09/09/99	4.98	100	0.393
Magnesium	09/09/99	4400	NLE	3.930
Manganese	09/09/99	41.7	NLE	0.098
Mercury	09/08/99	ND	14	0.025
Nickel	09/09/99	5.61	250	0.098
Potassium	09/09/99	10600	NLE	3.930
Selenium	09/09/99	ND	63	0.590
Silver	09/09/99	ND	110	0.590
Sodium	09/09/99	150	NLE	3.930
Thallium	09/09/99	ND	2	0.590
Vanadium	09/09/99	64.2	370	0.197
Zinc	09/09/99	35.0	1500	0.197

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.14
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-69, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	4900	NLE	2.427
Antimony	09/09/99	ND	14	0.485
Arsenic	09/09/99	4.79	20	0.485
Barium	09/09/99	9.32	700	0.121
Beryllium	09/09/99	0.361	1	0.121
Cadmium	09/09/99	0.281	1	0.121
Calcium	09/09/99	105	NLE	4.855
Chromium	09/09/99	40.4	NLE	0.121
Cobalt	09/09/99	1.32	NLE	0.121
Copper	09/09/99	4.48	600	0.728
Iron	09/09/99	14200	NLE	2.427
Lead	09/09/99	2.86	100	0.485
Magnesium	09/09/99	839	NLE	4.855
Manganese	09/09/99	27.2	NLE	0.121
Mercury	09/08/99	ND	14	0.021
Nickel	09/09/99	2.58	250	0.121
Potassium	09/09/99	1900	NLE	4.855
Selenium	09/09/99	ND	63	0.728
Silver	09/09/99	ND	110	0.728
Sodium	09/09/99	174	NLE	4.855
Thallium	09/09/99	ND	2	0.728
Vanadium	09/09/99	37.3	370	0.243
Zinc	09/09/99	16.4	1500	0.243

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.16
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-70, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17400	NLE	2.423
Antimony	09/09/99	ND	14	0.485
Arsenic	09/09/99	22.3	20	0.485
Barium	09/09/99	29.3	700	0.121
Beryllium	09/09/99	2.13	1	0.121
Cadmium	09/09/99	0.557	1	0.121
Calcium	09/09/99	997	NLE	4.847
Chromium	09/09/99	258	NLE	0.121
Cobalt	09/09/99	1.40	NLE	0.121
Copper	09/09/99	12.8	600	0.727
Iron	09/09/99	58200	NLE	2.423
Lead	09/09/99	17.5	100	0.485
Magnesium	09/09/99	8190	NLE	4.847
Manganese	09/09/99	27.6	NLE	0.121
Mercury	09/08/99	0.026	14	0.019
Nickel	09/09/99	7.59	250	0.121
Potassium	09/09/99	18800	NLE	4.847
Selenium	09/09/99	0.766	63	0.727
Silver	09/09/99	ND	110	0.727
Sodium	09/09/99	171	NLE	4.847
Thallium	09/09/99	ND	2	0.727
Vanadium	09/09/99	106	370	0.242
Zinc	09/09/99	77.0	1500	0.242

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.18
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-71, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	20200	NLE	2.354
Antimony	09/09/99	ND	14	0.471
Arsenic	09/09/99	24.2	20	0.471
Barium	09/09/99	22.9	700	0.118
Beryllium	09/09/99	1.91	1	0.118
Cadmium	09/09/99	0.257	1	0.118
Calcium	09/09/99	694	NLE	4.708
Chromium	09/09/99	239	NLE	0.118
Cobalt	09/09/99	1.14	NLE	0.118
Copper	09/09/99	14.7	600	0.706
Iron	09/09/99	48000	NLE	2.354
Lead	09/09/99	45.5	100	0.471
Magnesium	09/09/99	7280	NLE	4.708
Manganese	09/09/99	41.3	NLE	0.118
Mercury	09/08/99	ND	14	0.020
Nickel	09/09/99	5.77	250	0.118
Potassium	09/09/99	16100	NLE	4.708
Selenium	09/09/99	ND	63	0.706
Silver	09/09/99	ND	110	0.706
Sodium	09/09/99	166	NLE	4.708
Thallium	09/09/99	ND	2	0.706
Vanadium	09/09/99	112	370	0.235
Zinc	09/09/99	69.5	1500	0.235

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.20
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-72, 7-13"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	20100	NLE	2.464
Antimony	09/09/99	ND	14	0.493
Arsenic	09/09/99	43.3	20	0.493
Barium	09/09/99	11.3	700	0.123
Beryllium	09/09/99	2.71	1	0.123
Cadmium	09/09/99	0.612	1	0.123
Calcium	09/09/99	481	NLE	4.927
Chromium	09/09/99	314	NLE	0.123
Cobalt	09/09/99	1.17	NLE	0.123
Copper	09/09/99	5.72	600	0.739
Iron	09/09/99	67600	NLE	2.464
Lead	09/09/99	13.2	100	0.493
Magnesium	09/09/99	9930	NLE	4.927
Manganese	09/09/99	24.0	NLE	0.123
Mercury	09/08/99	0.037	14	0.025
Nickel	09/09/99	7.06	250	0.123
Potassium	09/09/99	23200	NLE	4.927
Selenium	09/09/99	ND	63	0.739
Silver	09/09/99	ND	110	0.739
Sodium	09/09/99	156	NLE	4.927
Thallium	09/09/99	ND	2	0.739
Vanadium	09/09/99	125	370	0.246
Zinc	09/09/99	61.4	1500	0.246

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4754.22
Sample Received: 08/27/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-73, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	10400	NLE	2.073
Antimony	09/09/99	ND	14	0.415
Arsenic	09/09/99	10.0	20	0.415
Barium	09/09/99	66.1	700	0.104
Beryllium	09/09/99	0.738	1	0.104
Cadmium	09/09/99	0.272	1	0.104
Calcium	09/09/99	439	NLE	4.146
Chromium	09/09/99	55.6	NLE	0.104
Cobalt	09/09/99	3.33	NLE	0.104
Copper	09/09/99	22.0	600	0.622
Iron	09/09/99	24900	NLE	2.073
Lead	09/09/99	34.3	100	0.415
Magnesium	09/09/99	1490	NLE	4.146
Manganese	09/09/99	22.8	NLE	0.104
Mercury	09/08/99	0.286	14	0.022
Nickel	09/09/99	10.4	250	0.104
Potassium	09/09/99	3900	NLE	4.146
Selenium	09/09/99	1.43	63	0.622
Silver	09/09/99	ND	110	0.622
Sodium	09/09/99	199	NLE	4.146
Thallium	09/09/99	ND	2	0.622
Vanadium	09/09/99	42.3	370	0.207
Zinc	09/09/99	61.7	1500	0.207

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.02
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-74, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15100	NLE	2.327
Antimony	09/09/99	ND	14	0.465
Arsenic	09/09/99	16.0	20	0.465
Barium	09/09/99	29.1	700	0.116
Beryllium	09/09/99	1.42	1	0.116
Cadmium	09/09/99	0.336	1	0.116
Calcium	09/09/99	752	NLE	4.653
Chromium	09/09/99	171	NLE	0.116
Cobalt	09/09/99	1.61	NLE	0.116
Copper	09/09/99	4.34	600	0.698
Iron	09/09/99	36800	NLE	2.327
Lead	09/09/99	16.0	100	0.465
Magnesium	09/09/99	5110	NLE	4.653
Manganese	09/09/99	39.8	NLE	0.116
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	5.19	250	0.116
Potassium	09/09/99	10800	NLE	4.653
Selenium	09/09/99	ND	63	0.698
Silver	09/09/99	ND	110	0.698
Sodium	09/09/99	471	NLE	4.653
Thallium	09/09/99	ND	2	0.698
Vanadium	09/09/99	84.0	370	0.233
Zinc	09/09/99	49.9	1500	0.233

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.04
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-75, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	16400	NLE	2.417
Antimony	09/09/99	ND	14	0.483
Arsenic	09/09/99	21.8	20	0.483
Barium	09/09/99	32.0	700	0.121
Beryllium	09/09/99	1.85	1	0.121
Cadmium	09/09/99	0.420	1	0.121
Calcium	09/09/99	599	NLE	4.833
Chromium	09/09/99	221	NLE	0.121
Cobalt	09/09/99	1.30	NLE	0.121
Copper	09/09/99	14.9	600	0.725
Iron	09/09/99	52000	NLE	2.417
Lead	09/09/99	25.0	100	0.483
Magnesium	09/09/99	6960	NLE	4.833
Manganese	09/09/99	27.7	NLE	0.121
Mercury	09/08/99	ND	14	0.022
Nickel	09/09/99	6.37	250	0.121
Potassium	09/09/99	16000	NLE	4.833
Selenium	09/09/99	ND	63	0.725
Silver	09/09/99	ND	110	0.725
Sodium	09/09/99	126	NLE	4.833
Thallium	09/09/99	ND	2	0.725
Vanadium	09/09/99	98.0	370	0.242
Zinc	09/09/99	54.4	1500	0.242

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.06
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-76, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	11600	NLE	2.185
Antimony	09/09/99	ND	14	0.437
Arsenic	09/09/99	9.59	20	0.437
Barium	09/09/99	47.4	700	0.109
Beryllium	09/09/99	1.15	1	0.109
Cadmium	09/09/99	0.33	1	0.109
Calcium	09/09/99	750	NLE	4.369
Chromium	09/09/99	134	NLE	0.109
Cobalt	09/09/99	1.47	NLE	0.109
Copper	09/09/99	12.4	600	0.655
Iron	09/09/99	35300	NLE	2.185
Lead	09/09/99	15.1	100	0.437
Magnesium	09/09/99	3980	NLE	4.369
Manganese	09/09/99	25.1	NLE	0.109
Mercury	09/08/99	0.036	14	0.021
Nickel	09/09/99	5.19	250	0.109
Potassium	09/09/99	9700	NLE	4.369
Selenium	09/09/99	ND	63	0.655
Silver	09/09/99	ND	110	0.655
Sodium	09/09/99	127	NLE	4.369
Thallium	09/09/99	ND	2	0.655
Vanadium	09/09/99	64.5	370	0.218
Zinc	09/09/99	42.3	1500	0.218

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.08
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-77, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	21600	NLE	2.482
Antimony	09/09/99	ND	14	0.496
Arsenic	09/09/99	28.6	20	0.496
Barium	09/09/99	18.2	700	0.124
Beryllium	09/09/99	2.63	1	0.124
Cadmium	09/09/99	0.831	1	0.124
Calcium	09/09/99	702	NLE	4.964
Chromium	09/09/99	330	NLE	0.124
Cobalt	09/09/99	1.25	NLE	0.124
Copper	09/09/99	24.5	600	0.745
Iron	09/09/99	71100	NLE	2.482
Lead	09/09/99	32.3	100	0.496
Magnesium	09/09/99	9920	NLE	4.964
Manganese	09/09/99	28.0	NLE	0.124
Mercury	09/08/99	ND	14	0.023
Nickel	09/09/99	7.82	250	0.124
Potassium	09/09/99	23400	NLE	4.964
Selenium	09/09/99	ND	63	0.745
Silver	09/09/99	ND	110	0.745
Sodium	09/09/99	662	NLE	4.964
Thallium	09/09/99	ND	2	0.745
Vanadium	09/09/99	125	370	0.248
Zinc	09/09/99	84.1	1500	0.248

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.10
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-78, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	13700	NLE	2.258
Antimony	09/09/99	ND	14	0.452
Arsenic	09/09/99	27.1	20	0.452
Barium	09/09/99	17.1	700	0.113
Beryllium	09/09/99	1.86	1	0.113
Cadmium	09/09/99	0.458	1	0.113
Calcium	09/09/99	482	NLE	4.517
Chromium	09/09/99	208	NLE	0.113
Cobalt	09/09/99	0.697	NLE	0.113
Copper	09/09/99	15.1	600	0.678
Iron	09/09/99	44200	NLE	2.258
Lead	09/09/99	15.0	100	0.452
Magnesium	09/09/99	5670	NLE	4.517
Manganese	09/09/99	23.7	NLE	0.113
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	5.54	250	0.113
Potassium	09/09/99	13500	NLE	4.517
Selenium	09/09/99	ND	63	0.678
Silver	09/09/99	ND	110	0.678
Sodium	09/09/99	86.3	NLE	4.517
Thallium	09/09/99	ND	2	0.678
Vanadium	09/09/99	69.8	370	0.226
Zinc	09/09/99	51.3	1500	0.226

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.12
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-79, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	14300	NLE	2.256
Antimony	09/09/99	ND	14	0.451
Arsenic	09/09/99	13.4	20	0.451
Barium	09/09/99	41.7	700	0.113
Beryllium	09/09/99	1.47	1	0.113
Cadmium	09/09/99	0.385	1	0.113
Calcium	09/09/99	629	NLE	4.511
Chromium	09/09/99	143	NLE	0.113
Cobalt	09/09/99	2.33	NLE	0.113
Copper	09/09/99	1.92	600	0.677
Iron	09/09/99	42000	NLE	2.256
Lead	09/09/99	7.38	100	0.451
Magnesium	09/09/99	4990	NLE	4.511
Manganese	09/09/99	28.1	NLE	0.113
Mercury	09/08/99	ND	14	0.025
Nickel	09/09/99	6.01	250	0.113
Potassium	09/09/99	11500	NLE	4.511
Selenium	09/09/99	ND	63	0.677
Silver	09/09/99	ND	110	0.677
Sodium	09/09/99	218	NLE	4.511
Thallium	09/09/99	ND	2	0.677
Vanadium	09/09/99	77.5	370	0.226
Zinc	09/09/99	43.6	1500	0.226

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.14
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-80, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	9650	NLE	2.501
Antimony	09/09/99	ND	14	0.500
Arsenic	09/09/99	16.4	20	0.500
Barium	09/09/99	17.7	700	0.125
Beryllium	09/09/99	0.640	1	0.125
Cadmium	09/09/99	0.257	1	0.125
Calcium	09/09/99	941	NLE	5.002
Chromium	09/09/99	74.8	NLE	0.125
Cobalt	09/09/99	1.55	NLE	0.125
Copper	09/09/99	21.8	600	0.750
Iron	09/09/99	17800	NLE	2.501
Lead	09/09/99	33.8	100	0.500
Magnesium	09/09/99	2270	NLE	5.002
Manganese	09/09/99	30.1	NLE	0.125
Mercury	09/08/99	ND	14	0.025
Nickel	09/09/99	7.09	250	0.125
Potassium	09/09/99	3820	NLE	5.002
Selenium	09/09/99	ND	63	0.750
Silver	09/09/99	ND	110	0.750
Sodium	09/09/99	109	NLE	5.002
Thallium	09/09/99	ND	2	0.750
Vanadium	09/09/99	34.0	370	0.250
Zinc	09/09/99	76.0	1500	0.250

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.16
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-81, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	11700	NLE	2.669
Antimony	09/09/99	ND	14	0.534
Arsenic	09/09/99	16.8	20	0.534
Barium	09/09/99	16.7	700	0.133
Beryllium	09/09/99	1.41	1	0.133
Cadmium	09/09/99	0.612	1	0.133
Calcium	09/09/99	635	NLE	5.337
Chromium	09/09/99	149	NLE	0.133
Cobalt	09/09/99	1.40	NLE	0.133
Copper	09/09/99	30.9	600	0.801
Iron	09/09/99	35100	NLE	2.669
Lead	09/09/99	41.3	100	0.534
Magnesium	09/09/99	4300	NLE	5.337
Manganese	09/09/99	29.3	NLE	0.133
Mercury	09/08/99	ND	14	0.024
Nickel	09/09/99	6.91	250	0.133
Potassium	09/09/99	9980	NLE	5.337
Selenium	09/09/99	ND	63	0.801
Silver	09/09/99	ND	110	0.801
Sodium	09/09/99	116	NLE	5.337
Thallium	09/09/99	ND	2	0.801
Vanadium	09/09/99	59.2	370	0.267
Zinc	09/09/99	85.2	1500	0.267

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.18
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-82, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	9940	NLE	2.740
Antimony	09/09/99	ND	14	0.548
Arsenic	09/09/99	13.1	20	0.548
Barium	09/09/99	84.2	700	0.137
Beryllium	09/09/99	1.38	1	0.137
Cadmium	09/09/99	0.483	1	0.137
Calcium	09/09/99	1690	NLE	5.481
Chromium	09/09/99	152	NLE	0.137
Cobalt	09/09/99	1.10	NLE	0.137
Copper	09/09/99	8.95	600	0.822
Iron	09/09/99	37600	NLE	2.740
Lead	09/09/99	14.7	100	0.548
Magnesium	09/09/99	4260	NLE	5.481
Manganese	09/09/99	22.9	NLE	0.137
Mercury	09/08/99	0.034	14	0.026
Nickel	09/09/99	5.03	250	0.137
Potassium	09/09/99	10500	NLE	5.481
Selenium	09/09/99	1.00	63	0.822
Silver	09/09/99	ND	110	0.822
Sodium	09/09/99	130	NLE	5.481
Thallium	09/09/99	ND	2	0.822
Vanadium	09/09/99	66.7	370	0.274
Zinc	09/09/99	52.5	1500	0.274

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.20
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-83, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17900	NLE	2.243
Antimony	09/09/99	ND	14	0.449
Arsenic	09/09/99	40.4	20	0.449
Barium	09/09/99	10.5	700	0.112
Beryllium	09/09/99	2.36	1	0.112
Cadmium	09/09/99	0.646	1	0.112
Calcium	09/09/99	624	NLE	4.486
Chromium	09/09/99	274	NLE	0.112
Cobalt	09/09/99	1.02	NLE	0.112
Copper	09/09/99	16.3	600	0.673
Iron	09/09/99	57700	NLE	2.243
Lead	09/09/99	8.58	100	0.449
Magnesium	09/09/99	8130	NLE	4.486
Manganese	09/09/99	21.5	NLE	0.112
Mercury	09/08/99	ND	14	0.026
Nickel	09/09/99	6.26	250	0.112
Potassium	09/09/99	19100	NLE	4.486
Selenium	09/09/99	ND	63	0.673
Silver	09/09/99	ND	110	0.673
Sodium	09/09/99	96.5	NLE	4.486
Thallium	09/09/99	ND	2	0.673
Vanadium	09/09/99	115	370	0.224
Zinc	09/09/99	56.4	1500	0.224

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.22
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-84, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	18600	NLE	2.535
Antimony	09/09/99	ND	14	0.507
Arsenic	09/09/99	21.7	20	0.507
Barium	09/09/99	15.0	700	0.127
Beryllium	09/09/99	2.15	1	0.127
Cadmium	09/09/99	0.667	1	0.127
Calcium	09/09/99	735	NLE	5.070
Chromium	09/09/99	259	NLE	0.127
Cobalt	09/09/99	1.14	NLE	0.127
Copper	09/09/99	24.5	600	0.761
Iron	09/09/99	53900	NLE	2.535
Lead	09/09/99	18.6	100	0.507
Magnesium	09/09/99	7620	NLE	5.070
Manganese	09/09/99	30.4	NLE	0.127
Mercury	09/08/99	0.051	14	0.025
Nickel	09/09/99	7.73	250	0.127
Potassium	09/09/99	17800	NLE	5.070
Selenium	09/09/99	ND	63	0.761
Silver	09/09/99	ND	110	0.761
Sodium	09/09/99	145	NLE	5.070
Thallium	09/09/99	ND	2	0.761
Vanadium	09/09/99	113	370	0.254
Zinc	09/09/99	76.7	1500	0.254

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.24
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-85, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12500	NLE	2.272
Antimony	09/09/99	ND	14	0.454
Arsenic	09/09/99	8.21	20	0.454
Barium	09/09/99	57.3	700	0.114
Beryllium	09/09/99	1.19	1	0.114
Cadmium	09/09/99	0.242	1	0.114
Calcium	09/09/99	655	NLE	4.544
Chromium	09/09/99	66.6	NLE	0.114
Cobalt	09/09/99	7.25	NLE	0.114
Copper	09/09/99	35.2	600	0.682
Iron	09/09/99	19100	NLE	2.272
Lead	09/09/99	58.8	100	0.454
Magnesium	09/09/99	1610	NLE	4.544
Manganese	09/09/99	39.4	NLE	0.114
Mercury	09/08/99	0.090	14	0.024
Nickel	09/09/99	21.3	250	0.114
Potassium	09/09/99	3980	NLE	4.544
Selenium	09/09/99	1.17	63	0.682
Silver	09/09/99	ND	110	0.682
Sodium	09/09/99	242	NLE	4.544
Thallium	09/09/99	ND	2	0.682
Vanadium	09/09/99	44.3	370	0.227
Zinc	09/09/99	47.0	1500	0.227

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.26
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-86, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17800	NLE	2.491
Antimony	09/09/99	ND	14	0.498
Arsenic	09/09/99	21.2	20	0.498
Barium	09/09/99	15.1	700	0.125
Beryllium	09/09/99	2.02	1	0.125
Cadmium	09/09/99	0.378	1	0.125
Calcium	09/09/99	484	NLE	4.982
Chromium	09/09/99	240	NLE	0.125
Cobalt	09/09/99	1.09	NLE	0.125
Copper	09/09/99	13.1	600	0.747
Iron	09/09/99	46200	NLE	2.491
Lead	09/09/99	6.57	100	0.498
Magnesium	09/09/99	6920	NLE	4.982
Manganese	09/09/99	31.0	NLE	0.125
Mercury	09/08/99	ND	14	0.023
Nickel	09/09/99	5.26	250	0.125
Potassium	09/09/99	15800	NLE	4.982
Selenium	09/09/99	ND	63	0.747
Silver	09/09/99	ND	110	0.747
Sodium	09/09/99	142	NLE	4.982
Thallium	09/09/99	ND	2	0.747
Vanadium	09/09/99	113	370	0.249
Zinc	09/09/99	49.0	1500	0.249

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.28
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-87, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17000	NLE	2.308
Antimony	09/09/99	ND	14	0.462
Arsenic	09/09/99	40.7	20	0.462
Barium	09/09/99	83.0	700	0.115
Beryllium	09/09/99	2.05	1	0.115
Cadmium	09/09/99	0.527	1	0.115
Calcium	09/09/99	1050	NLE	4.615
Chromium	09/09/99	242	NLE	0.115
Cobalt	09/09/99	1.89	NLE	0.115
Copper	09/09/99	24.5	600	0.692
Iron	09/09/99	52700	NLE	2.308
Lead	09/09/99	35.7	100	0.462
Magnesium	09/09/99	6780	NLE	4.615
Manganese	09/09/99	49.2	NLE	0.115
Mercury	09/08/99	0.059	14	0.022
Nickel	09/09/99	7.88	250	0.115
Potassium	09/09/99	15300	NLE	4.615
Selenium	09/09/99	ND	63	0.692
Silver	09/09/99	ND	110	0.692
Sodium	09/09/99	185	NLE	4.615
Thallium	09/09/99	ND	2	0.692
Vanadium	09/09/99	105	370	0.231
Zinc	09/09/99	120	1500	0.231

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4760.30
Sample Received: 08/30/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-88, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15100	NLE	2.322
Antimony	09/09/99	ND	14	0.464
Arsenic	09/09/99	18.8	20	0.464
Barium	09/09/99	32.5	700	0.116
Beryllium	09/09/99	1.74	1	0.116
Cadmium	09/09/99	0.520	1	0.116
Calcium	09/09/99	1180	NLE	4.643
Chromium	09/09/99	191	NLE	0.116
Cobalt	09/09/99	1.34	NLE	0.116
Copper	09/09/99	15.3	600	0.697
Iron	09/09/99	44600	NLE	2.322
Lead	09/09/99	32.1	100	0.464
Magnesium	09/09/99	5790	NLE	4.643
Manganese	09/09/99	71.6	NLE	0.116
Mercury	09/08/99	0.084	14	0.023
Nickel	09/09/99	6.31	250	0.116
Potassium	09/09/99	13400	NLE	4.643
Selenium	09/09/99	ND	63	0.697
Silver	09/09/99	1.09	110	0.697
Sodium	09/09/99	117	NLE	4.643
Thallium	09/09/99	ND	2	0.697
Vanadium	09/09/99	80.5	370	0.232
Zinc	09/09/99	115	1500	0.232

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.02
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-89, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	14100	NLE	2.465
Antimony	09/09/99	ND	14	0.493
Arsenic	09/09/99	25.3	20	0.493
Barium	09/09/99	53.0	700	0.123
Beryllium	09/09/99	1.06	1	0.123
Cadmium	09/09/99	0.608	1	0.123
Calcium	09/09/99	2050	NLE	4.929
Chromium	09/09/99	94.8	NLE	0.123
Cobalt	09/09/99	2.66	NLE	0.123
Copper	09/09/99	16.1	600	0.739
Iron	09/09/99	32100	NLE	2.465
Lead	09/09/99	56.9	100	0.493
Magnesium	09/09/99	2850	NLE	4.929
Manganese	09/09/99	40.9	NLE	0.123
Mercury	09/08/99	0.261	14	0.021
Nickel	09/09/99	8.46	250	0.123
Potassium	09/09/99	6530	NLE	4.929
Selenium	09/09/99	ND	63	0.739
Silver	09/09/99	ND	110	0.739
Sodium	09/09/99	167	NLE	4.929
Thallium	09/09/99	ND	2	0.739
Vanadium	09/09/99	57.5	370	0.246
Zinc	09/09/99	37.1	1500	0.246

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.04
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-90, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	8780	NLE	2.298
Antimony	09/09/99	ND	14	0.460
Arsenic	09/09/99	7.51	20	0.460
Barium	09/09/99	22.8	700	0.115
Beryllium	09/09/99	0.632	1	0.115
Cadmium	09/09/99	0.538	1	0.115
Calcium	09/09/99	612	NLE	4.597
Chromium	09/09/99	69.7	NLE	0.115
Cobalt	09/09/99	2.25	NLE	0.115
Copper	09/09/99	8.91	600	0.690
Iron	09/09/99	21200	NLE	2.298
Lead	09/09/99	35.7	100	0.460
Magnesium	09/09/99	1730	NLE	4.597
Manganese	09/09/99	38.8	NLE	0.115
Mercury	09/08/99	0.062	14	0.018
Nickel	09/09/99	5.58	250	0.115
Potassium	09/09/99	3840	NLE	4.597
Selenium	09/09/99	ND	63	0.690
Silver	09/09/99	ND	110	0.690
Sodium	09/09/99	126	NLE	4.597
Thallium	09/09/99	ND	2	0.690
Vanadium	09/09/99	44.4	370	0.230
Zinc	09/09/99	82.6	1500	0.230

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.06
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-91, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12400	NLE	2.386
Antimony	09/09/99	ND	14	0.477
Arsenic	09/09/99	9.26	20	0.477
Barium	09/09/99	47.9	700	0.119
Beryllium	09/09/99	0.931	1	0.119
Cadmium	09/09/99	0.192	1	0.119
Calcium	09/09/99	349	NLE	4.772
Chromium	09/09/99	95.8	NLE	0.119
Cobalt	09/09/99	1.83	NLE	0.119
Copper	09/09/99	21.4	600	0.716
Iron	09/09/99	26400	NLE	2.386
Lead	09/09/99	37.6	100	0.477
Magnesium	09/09/99	2920	NLE	4.772
Manganese	09/09/99	24.4	NLE	0.119
Mercury	09/08/99	0.050	14	0.025
Nickel	09/09/99	5.75	250	0.119
Potassium	09/09/99	6750	NLE	4.772
Selenium	09/09/99	ND	63	0.716
Silver	09/09/99	ND	110	0.716
Sodium	09/09/99	215	NLE	4.772
Thallium	09/09/99	ND	2	0.716
Vanadium	09/09/99	50.7	370	0.239
Zinc	09/09/99	47.9	1500	0.239

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.08
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-92, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17400	NLE	2.549
Antimony	09/09/99	ND	14	0.510
Arsenic	09/09/99	31.0	20	0.510
Barium	09/09/99	17.6	700	0.127
Beryllium	09/09/99	1.47	1	0.127
Cadmium	09/09/99	0.244	1	0.127
Calcium	09/09/99	525	NLE	5.097
Chromium	09/09/99	187	NLE	0.127
Cobalt	09/09/99	1.45	NLE	0.127
Copper	09/09/99	17.7	600	0.765
Iron	09/09/99	38500	NLE	2.549
Lead	09/09/99	17.3	100	0.510
Magnesium	09/09/99	5100	NLE	5.097
Manganese	09/09/99	47.2	NLE	0.127
Mercury	09/08/99	0.051	14	0.023
Nickel	09/09/99	5.20	250	0.127
Potassium	09/09/99	10600	NLE	5.097
Selenium	09/09/99	ND	63	0.765
Silver	09/09/99	ND	110	0.765
Sodium	09/09/99	120	NLE	5.097
Thallium	09/09/99	ND	2	0.765
Vanadium	09/09/99	88.7	370	0.255
Zinc	09/09/99	57.4	1500	0.255

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.10
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-93, 2-8"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	19100	NLE	2.647
Antimony	09/09/99	ND	14	0.529
Arsenic	09/09/99	26.5	20	0.529
Barium	09/09/99	15.2	700	0.132
Beryllium	09/09/99	2.32	1	0.132
Cadmium	09/09/99	0.784	1	0.132
Calcium	09/09/99	1140	NLE	5.295
Chromium	09/09/99	273	NLE	0.132
Cobalt	09/09/99	1.06	NLE	0.132
Copper	09/09/99	17.7	600	0.794
Iron	09/09/99	54700	NLE	2.647
Lead	09/09/99	10.8	100	0.529
Magnesium	09/09/99	8130	NLE	5.295
Manganese	09/09/99	22.8	NLE	0.132
Mercury	09/08/99	0.063	14	0.024
Nickel	09/09/99	7.67	250	0.132
Potassium	09/09/99	18700	NLE	5.295
Selenium	09/09/99	ND	63	0.794
Silver	09/09/99	ND	110	0.794
Sodium	09/09/99	132	NLE	5.295
Thallium	09/09/99	ND	2	0.794
Vanadium	09/09/99	116	370	0.265
Zinc	09/09/99	82.8	1500	0.265

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.12
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-94, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	19700	NLE	2.274
Antimony	09/09/99	ND	14	0.455
Arsenic	09/09/99	21.5	20	0.455
Barium	09/09/99	81.5	700	0.114
Beryllium	09/09/99	1.91	1	0.114
Cadmium	09/09/99	0.693	1	0.114
Calcium	09/09/99	1590	NLE	4.548
Chromium	09/09/99	221	NLE	0.114
Cobalt	09/09/99	1.76	NLE	0.114
Copper	09/09/99	138	600	0.682
Iron	09/09/99	46200	NLE	2.274
Lead	09/09/99	209	100	0.455
Magnesium	09/09/99	6580	NLE	4.548
Manganese	09/09/99	80.0	NLE	0.114
Mercury	09/08/99	0.064	14	0.021
Nickel	09/09/99	7.65	250	0.114
Potassium	09/09/99	14800	NLE	4.548
Selenium	09/09/99	ND	63	0.682
Silver	09/09/99	ND	110	0.682
Sodium	09/09/99	234	NLE	4.548
Thallium	09/09/99	ND	2	0.682
Vanadium	09/09/99	101	370	0.227
Zinc	09/09/99	316	1500	0.227

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.14
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-95, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15900	NLE	2.072
Antimony	09/09/99	ND	14	0.414
Arsenic	09/09/99	20.1	20	0.414
Barium	09/09/99	40.1	700	0.104
Beryllium	09/09/99	1.49	1	0.104
Cadmium	09/09/99	0.965	1	0.104
Calcium	09/09/99	1430	NLE	4.144
Chromium	09/09/99	170	NLE	0.104
Cobalt	09/09/99	2.20	NLE	0.104
Copper	09/09/99	88.6	600	0.622
Iron	09/09/99	39600	NLE	2.072
Lead	09/09/99	50.4	100	0.414
Magnesium	09/09/99	5150	NLE	4.144
Manganese	09/09/99	53.5	NLE	0.104
Mercury	09/08/99	0.099	14	0.025
Nickel	09/09/99	8.68	250	0.104
Potassium	09/09/99	11400	NLE	4.144
Selenium	09/09/99	ND	63	0.622
Silver	09/09/99	ND	110	0.622
Sodium	09/09/99	130	NLE	4.144
Thallium	09/09/99	ND	2	0.622
Vanadium	09/09/99	82.0	370	0.207
Zinc	09/09/99	94.5	1500	0.207

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.16
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-96, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12900	NLE	2.026
Antimony	09/09/99	1.88	14	0.405
Arsenic	09/09/99	14.5	20	0.405
Barium	09/09/99	53.1	700	0.101
Beryllium	09/09/99	0.907	1	0.101
Cadmium	09/09/99	0.648	1	0.101
Calcium	09/09/99	1120	NLE	4.052
Chromium	09/09/99	101	NLE	0.101
Cobalt	09/09/99	2.91	NLE	0.101
Copper	09/09/99	181	600	0.608
Iron	09/09/99	25600	NLE	2.026
Lead	09/09/99	79.5	100	0.405
Magnesium	09/09/99	2950	NLE	4.052
Manganese	09/09/99	123	NLE	0.101
Mercury	09/08/99	0.162	14	0.026
Nickel	09/09/99	10.4	250	0.101
Potassium	09/09/99	6190	NLE	4.052
Selenium	09/09/99	0.698	63	0.608
Silver	09/09/99	0.719	110	0.608
Sodium	09/09/99	146	NLE	4.052
Thallium	09/09/99	ND	2	0.608
Vanadium	09/09/99	59.7	370	0.203
Zinc	09/09/99	402	1500	0.203

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.18
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-97, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15100	NLE	2.063
Antimony	09/09/99	ND	14	0.413
Arsenic	09/09/99	15.5	20	0.413
Barium	09/09/99	25.5	700	0.103
Beryllium	09/09/99	1.10	1	0.103
Cadmium	09/09/99	0.281	1	0.103
Calcium	09/09/99	647	NLE	4.126
Chromium	09/09/99	124	NLE	0.103
Cobalt	09/09/99	2.41	NLE	0.103
Copper	09/09/99	4.44	600	0.619
Iron	09/09/99	39400	NLE	2.063
Lead	09/09/99	11.3	100	0.413
Magnesium	09/09/99	2880	NLE	4.126
Manganese	09/09/99	31.9	NLE	0.103
Mercury	09/08/99	0.094	14	0.023
Nickel	09/09/99	9.02	250	0.103
Potassium	09/09/99	5850	NLE	4.126
Selenium	09/09/99	0.706	63	0.619
Silver	09/09/99	ND	110	0.619
Sodium	09/09/99	174	NLE	4.126
Thallium	09/09/99	ND	2	0.619
Vanadium	09/09/99	95.5	370	0.206
Zinc	09/09/99	47.2	1500	0.206

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.20
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-98, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12900	NLE	1.669
Antimony	09/09/99	ND	14	0.334
Arsenic	09/09/99	9.72	20	0.334
Barium	09/09/99	27.8	700	0.083
Beryllium	09/09/99	1.03	1	0.083
Cadmium	09/09/99	0.295	1	0.083
Calcium	09/09/99	583	NLE	3.338
Chromium	09/09/99	129	NLE	0.083
Cobalt	09/09/99	1.92	NLE	0.083
Copper	09/09/99	4.51	600	0.501
Iron	09/09/99	29000	NLE	1.669
Lead	09/09/99	18.3	100	0.334
Magnesium	09/09/99	3060	NLE	3.338
Manganese	09/09/99	31.7	NLE	0.083
Mercury	09/08/99	0.243	14	0.022
Nickel	09/09/99	6.54	250	0.083
Potassium	09/09/99	6300	NLE	3.338
Selenium	09/09/99	ND	63	0.501
Silver	09/09/99	ND	110	0.501
Sodium	09/09/99	120	NLE	3.338
Thallium	09/09/99	ND	2	0.501
Vanadium	09/09/99	75.9	370	0.167
Zinc	09/09/99	62.0	1500	0.167

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.22
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-99, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	14900	NLE	2.100
Antimony	09/09/99	ND	14	0.420
Arsenic	09/09/99	11.3	20	0.420
Barium	09/09/99	42.5	700	0.105
Beryllium	09/09/99	1.51	1	0.105
Cadmium	09/09/99	0.336	1	0.105
Calcium	09/09/99	762	NLE	4.201
Chromium	09/09/99	84.7	NLE	0.105
Cobalt	09/09/99	2.56	NLE	0.105
Copper	09/09/99	3.31	600	0.630
Iron	09/09/99	35600	NLE	2.100
Lead	09/09/99	11.6	100	0.420
Magnesium	09/09/99	3530	NLE	4.201
Manganese	09/09/99	80.0	NLE	0.105
Mercury	09/08/99	0.084	14	0.021
Nickel	09/09/99	8.89	250	0.105
Potassium	09/09/99	6720	NLE	4.201
Selenium	09/09/99	ND	63	0.630
Silver	09/09/99	ND	110	0.630
Sodium	09/09/99	169	NLE	4.201
Thallium	09/09/99	ND	2	0.630
Vanadium	09/09/99	50.6	370	0.210
Zinc	09/09/99	92.3	1500	0.210

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.24
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-100, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	16800	NLE	2.232
Antimony	09/09/99	ND	14	0.446
Arsenic	09/09/99	20.6	20	0.446
Barium	09/09/99	29.7	700	0.112
Beryllium	09/09/99	1.80	1	0.112
Cadmium	09/09/99	0.522	1	0.112
Calcium	09/09/99	842	NLE	4.463
Chromium	09/09/99	206	NLE	0.112
Cobalt	09/09/99	2.35	NLE	0.112
Copper	09/09/99	14.2	600	0.669
Iron	09/09/99	45500	NLE	2.232
Lead	09/09/99	22.9	100	0.446
Magnesium	09/09/99	5950	NLE	4.463
Manganese	09/09/99	25.5	NLE	0.112
Mercury	09/08/99	0.131	14	0.025
Nickel	09/09/99	9.27	250	0.112
Potassium	09/09/99	13600	NLE	4.463
Selenium	09/09/99	ND	63	0.669
Silver	09/09/99	ND	110	0.669
Sodium	09/09/99	142	NLE	4.463
Thallium	09/09/99	ND	2	0.669
Vanadium	09/09/99	96.8	370	0.223
Zinc	09/09/99	50.0	1500	0.223

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.26
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-101, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	21800	NLE	1.973
Antimony	09/09/99	0.455	14	0.395
Arsenic	09/09/99	21.7	20	0.395
Barium	09/09/99	31.4	700	0.099
Beryllium	09/09/99	1.73	1	0.099
Cadmium	09/09/99	0.331	1	0.099
Calcium	09/09/99	736	NLE	3.947
Chromium	09/09/99	210	NLE	0.099
Cobalt	09/09/99	1.58	NLE	0.099
Copper	09/09/99	16.4	600	0.592
Iron	09/09/99	39000	NLE	1.973
Lead	09/09/99	28.3	100	0.395
Magnesium	09/09/99	5690	NLE	3.947
Manganese	09/09/99	55.6	NLE	0.099
Mercury	09/08/99	0.047	14	0.026
Nickel	09/09/99	6.15	250	0.099
Potassium	09/09/99	12000	NLE	3.947
Selenium	09/09/99	ND	63	0.592
Silver	09/09/99	ND	110	0.592
Sodium	09/09/99	136	NLE	3.947
Thallium	09/09/99	ND	2	0.592
Vanadium	09/09/99	101	370	0.197
Zinc	09/09/99	65.0	1500	0.197

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4762.28
Sample Received: 08/31/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-102, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	24700	NLE	2.316
Antimony	09/09/99	ND	14	0.463
Arsenic	09/09/99	32.1	20	0.463
Barium	09/09/99	17.3	700	0.116
Beryllium	09/09/99	2.71	1	0.116
Cadmium	09/09/99	0.924	1	0.116
Calcium	09/09/99	964	NLE	4.632
Chromium	09/09/99	338	NLE	0.116
Cobalt	09/09/99	1.32	NLE	0.116
Copper	09/09/99	20.9	600	0.695
Iron	09/09/99	74100	NLE	2.316
Lead	09/09/99	10.3	100	0.463
Magnesium	09/09/99	10500	NLE	4.632
Manganese	09/09/99	42.7	NLE	0.116
Mercury	09/08/99	ND	14	0.026
Nickel	09/09/99	7.82	250	0.116
Potassium	09/09/99	24100	NLE	4.632
Selenium	09/09/99	ND	63	0.695
Silver	09/09/99	ND	110	0.695
Sodium	09/09/99	181	NLE	4.632
Thallium	09/09/99	ND	2	0.695
Vanadium	09/09/99	134	370	0.232
Zinc	09/09/99	69.7	1500	0.232

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.02
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-103, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	18200	NLE	2.198
Antimony	09/09/99	0.461	14	0.440
Arsenic	09/09/99	23.6	20	0.440
Barium	09/09/99	75.7	700	0.110
Beryllium	09/09/99	1.95	1	0.110
Cadmium	09/09/99	1.43	1	0.110
Calcium	09/09/99	1340	NLE	4.396
Chromium	09/09/99	211	NLE	0.110
Cobalt	09/09/99	2.03	NLE	0.110
Copper	09/09/99	34.0	600	0.659
Iron	09/09/99	45500	NLE	2.198
Lead	09/09/99	60.1	100	0.440
Magnesium	09/09/99	6060	NLE	4.396
Manganese	09/09/99	44.1	NLE	0.110
Mercury	09/08/99	0.378	14	0.025
Nickel	09/09/99	10.6	250	0.110
Potassium	09/09/99	13500	NLE	4.396
Selenium	09/09/99	ND	63	0.659
Silver	09/09/99	0.856	110	0.659
Sodium	09/09/99	117	NLE	4.396
Thallium	09/09/99	ND	2	0.659
Vanadium	09/09/99	98.7	370	0.220
Zinc	09/09/99	102	1500	0.220

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.04
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-104, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12800	NLE	2.155
Antimony	09/09/99	ND	14	0.431
Arsenic	09/09/99	8.63	20	0.431
Barium	09/09/99	35.3	700	0.108
Beryllium	09/09/99	0.797	1	0.108
Cadmium	09/09/99	0.411	1	0.108
Calcium	09/09/99	528	NLE	4.309
Chromium	09/09/99	68.6	NLE	0.108
Cobalt	09/09/99	4.18	NLE	0.108
Copper	09/09/99	3.68	600	0.646
Iron	09/09/99	31800	NLE	2.155
Lead	09/09/99	13.4	100	0.431
Magnesium	09/09/99	1210	NLE	4.309
Manganese	09/09/99	89.5	NLE	0.108
Mercury	09/08/99	0.047	14	0.022
Nickel	09/09/99	10.5	250	0.108
Potassium	09/09/99	2580	NLE	4.309
Selenium	09/09/99	ND	63	0.646
Silver	09/09/99	ND	110	0.646
Sodium	09/09/99	131	NLE	4.309
Thallium	09/09/99	ND	2	0.646
Vanadium	09/09/99	75.0	370	0.215
Zinc	09/09/99	49.0	1500	0.215

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.06
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-105, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	15700	NLE	2.079
Antimony	09/09/99	ND	14	0.416
Arsenic	09/09/99	13.5	20	0.416
Barium	09/09/99	41.1	700	0.104
Beryllium	09/09/99	1.12	1	0.104
Cadmium	09/09/99	0.440	1	0.104
Calcium	09/09/99	854	NLE	4.158
Chromium	09/09/99	96.8	NLE	0.104
Cobalt	09/09/99	3.27	NLE	0.104
Copper	09/09/99	16.1	600	0.624
Iron	09/09/99	33600	NLE	2.079
Lead	09/09/99	28.3	100	0.416
Magnesium	09/09/99	3260	NLE	4.158
Manganese	09/09/99	64.6	NLE	0.104
Mercury	09/08/99	0.141	14	0.024
Nickel	09/09/99	9.53	250	0.104
Potassium	09/09/99	6920	NLE	4.158
Selenium	09/09/99	ND	63	0.624
Silver	09/09/99	ND	110	0.624
Sodium	09/09/99	243	NLE	4.158
Thallium	09/09/99	ND	2	0.624
Vanadium	09/09/99	63.2	370	0.208
Zinc	09/09/99	61.3	1500	0.208

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.08
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-106, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17900	NLE	2.304
Antimony	09/09/99	ND	14	0.461
Arsenic	09/09/99	13.9	20	0.461
Barium	09/09/99	42.2	700	0.115
Beryllium	09/09/99	1.32	1	0.115
Cadmium	09/09/99	0.443	1	0.115
Calcium	09/09/99	984	NLE	4.608
Chromium	09/09/99	132	NLE	0.115
Cobalt	09/09/99	4.12	NLE	0.115
Copper	09/09/99	9.78	600	0.691
Iron	09/09/99	39500	NLE	2.304
Lead	09/09/99	39.9	100	0.461
Magnesium	09/09/99	4200	NLE	4.608
Manganese	09/09/99	123	NLE	0.115
Mercury	09/08/99	0.051	14	0.023
Nickel	09/09/99	8.91	250	0.115
Potassium	09/09/99	9120	NLE	4.608
Selenium	09/09/99	ND	63	0.691
Silver	09/09/99	ND	110	0.691
Sodium	09/09/99	143	NLE	4.608
Thallium	09/09/99	ND	2	0.691
Vanadium	09/09/99	71.9	370	0.230
Zinc	09/09/99	71.3	1500	0.230

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.10
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-107, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	22700	NLE	2.281
Antimony	09/09/99	ND	14	0.456
Arsenic	09/09/99	26.0	20	0.456
Barium	09/09/99	13.1	700	0.114
Beryllium	09/09/99	2.81	1	0.114
Cadmium	09/09/99	0.84	1	0.114
Calcium	09/09/99	808	NLE	4.561
Chromium	09/09/99	333	NLE	0.114
Cobalt	09/09/99	1.22	NLE	0.114
Copper	09/09/99	2.95	600	0.684
Iron	09/09/99	66600	NLE	2.281
Lead	09/09/99	11.2	100	0.456
Magnesium	09/09/99	9940	NLE	4.561
Manganese	09/09/99	33.7	NLE	0.114
Mercury	09/08/99	0.046	14	0.021
Nickel	09/09/99	6.94	250	0.114
Potassium	09/09/99	23200	NLE	4.561
Selenium	09/09/99	ND	63	0.684
Silver	09/09/99	ND	110	0.684
Sodium	09/09/99	138	NLE	4.561
Thallium	09/09/99	ND	2	0.684
Vanadium	09/09/99	140	370	0.228
Zinc	09/09/99	62.8	1500	0.228

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.12
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-108, 5-11"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17800	NLE	2.240
Antimony	09/09/99	ND	14	0.448
Arsenic	09/09/99	28.9	20	0.448
Barium	09/09/99	10.9	700	0.112
Beryllium	09/09/99	1.40	1	0.112
Cadmium	09/09/99	0.269	1	0.112
Calcium	09/09/99	429	NLE	4.480
Chromium	09/09/99	178	NLE	0.112
Cobalt	09/09/99	1.22	NLE	0.112
Copper	09/09/99	23.1	600	0.672
Iron	09/09/99	33800	NLE	2.240
Lead	09/09/99	4.84	100	0.448
Magnesium	09/09/99	4880	NLE	4.480
Manganese	09/09/99	31.7	NLE	0.112
Mercury	09/08/99	ND	14	0.019
Nickel	09/09/99	4.99	250	0.112
Potassium	09/09/99	9910	NLE	4.480
Selenium	09/09/99	ND	63	0.672
Silver	09/09/99	ND	110	0.672
Sodium	09/09/99	100	NLE	4.480
Thallium	09/09/99	ND	2	0.672
Vanadium	09/09/99	85.3	370	0.224
Zinc	09/09/99	43.0	1500	0.224

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.14
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-109, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	18900	NLE	2.157
Antimony	09/09/99	ND	14	0.431
Arsenic	09/09/99	30.3	20	0.431
Barium	09/09/99	41.6	700	0.108
Beryllium	09/09/99	1.76	1	0.108
Cadmium	09/09/99	0.835	1	0.108
Calcium	09/09/99	1230	NLE	4.313
Chromium	09/09/99	213	NLE	0.108
Cobalt	09/09/99	2.03	NLE	0.108
Copper	09/09/99	33.4	600	0.647
Iron	09/09/99	43500	NLE	2.157
Lead	09/09/99	83.1	100	0.431
Magnesium	09/09/99	6050	NLE	4.313
Manganese	09/09/99	63.5	NLE	0.108
Mercury	09/08/99	0.068	14	0.025
Nickel	09/09/99	8.06	250	0.108
Potassium	09/09/99	13500	NLE	4.313
Selenium	09/09/99	ND	63	0.647
Silver	09/09/99	ND	110	0.647
Sodium	09/09/99	93.3	NLE	4.313
Thallium	09/09/99	ND	2	0.647
Vanadium	09/09/99	104	370	0.216
Zinc	09/09/99	129	1500	0.216

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.16
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-110, 9-15"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	10200	NLE	1.920
Antimony	09/09/99	ND	14	0.384
Arsenic	09/09/99	7.60	20	0.384
Barium	09/09/99	29.2	700	0.096
Beryllium	09/09/99	0.709	1	0.096
Cadmium	09/09/99	0.348	1	0.096
Calcium	09/09/99	574	NLE	3.839
Chromium	09/09/99	61.7	NLE	0.096
Cobalt	09/09/99	3.21	NLE	0.096
Copper	09/09/99	3.68	600	0.576
Iron	09/09/99	28800	NLE	1.920
Lead	09/09/99	15.7	100	0.384
Magnesium	09/09/99	1260	NLE	3.839
Manganese	09/09/99	71.1	NLE	0.096
Mercury	09/08/99	ND	14	0.020
Nickel	09/09/99	8.78	250	0.096
Potassium	09/09/99	2630	NLE	3.839
Selenium	09/09/99	ND	63	0.576
Silver	09/09/99	ND	110	0.576
Sodium	09/09/99	75.9	NLE	3.839
Thallium	09/09/99	ND	2	0.576
Vanadium	09/09/99	67.6	370	0.192
Zinc	09/09/99	54.6	1500	0.192

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.18
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-111, 3-9"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	14900	NLE	2.157
Antimony	09/09/99	ND	14	0.431
Arsenic	09/09/99	11.5	20	0.431
Barium	09/09/99	34.1	700	0.108
Beryllium	09/09/99	0.994	1	0.108
Cadmium	09/09/99	0.299	1	0.108
Calcium	09/09/99	722	NLE	4.313
Chromium	09/09/99	92.0	NLE	0.108
Cobalt	09/09/99	2.46	NLE	0.108
Copper	09/09/99	4.95	600	0.647
Iron	09/09/99	29400	NLE	2.157
Lead	09/09/99	19.0	100	0.431
Magnesium	09/09/99	3070	NLE	4.313
Manganese	09/09/99	59.7	NLE	0.108
Mercury	09/08/99	ND	14	0.018
Nickel	09/09/99	6.89	250	0.108
Potassium	09/09/99	6430	NLE	4.313
Selenium	09/09/99	ND	63	0.647
Silver	09/09/99	ND	110	0.647
Sodium	09/09/99	107	NLE	4.313
Thallium	09/09/99	ND	2	0.647
Vanadium	09/09/99	54.5	370	0.216
Zinc	09/09/99	42.2	1500	0.216

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.20
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-112, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	17400	NLE	2.429
Antimony	09/09/99	ND	14	0.486
Arsenic	09/09/99	17.6	20	0.486
Barium	09/09/99	114	700	0.121
Beryllium	09/09/99	1.54	1	0.121
Cadmium	09/09/99	0.563	1	0.121
Calcium	09/09/99	1330	NLE	4.857
Chromium	09/09/99	133	NLE	0.121
Cobalt	09/09/99	6.36	NLE	0.121
Copper	09/09/99	19.5	600	0.729
Iron	09/09/99	35100	NLE	2.429
Lead	09/09/99	30.2	100	0.486
Magnesium	09/09/99	3670	NLE	4.857
Manganese	09/09/99	51.9	NLE	0.121
Mercury	09/08/99	ND	14	0.029
Nickel	09/09/99	15.3	250	0.121
Potassium	09/09/99	7940	NLE	4.857
Selenium	09/09/99	ND	63	0.729
Silver	09/09/99	ND	110	0.729
Sodium	09/09/99	223	NLE	4.857
Thallium	09/09/99	ND	2	0.729
Vanadium	09/09/99	70.2	370	0.243
Zinc	09/09/99	99.6	1500	0.243

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4774.22
Sample Received: 09/07/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-113, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/09/99	12000	NLE	2.336
Antimony	09/09/99	ND	14	0.467
Arsenic	09/09/99	16.8	20	0.467
Barium	09/09/99	10.4	700	0.117
Beryllium	09/09/99	1.21	1	0.117
Cadmium	09/09/99	0.324	1	0.117
Calcium	09/09/99	592	NLE	4.672
Chromium	09/09/99	149	NLE	0.117
Cobalt	09/09/99	1.22	NLE	0.117
Copper	09/09/99	2.18	600	0.701
Iron	09/09/99	30500	NLE	2.336
Lead	09/09/99	14.8	100	0.467
Magnesium	09/09/99	3900	NLE	4.672
Manganese	09/09/99	29.6	NLE	0.117
Mercury	09/08/99	ND	14	0.025
Nickel	09/09/99	3.90	250	0.117
Potassium	09/09/99	8640	NLE	4.672
Selenium	09/09/99	ND	63	0.701
Silver	09/09/99	ND	110	0.701
Sodium	09/09/99	48.2	NLE	4.672
Thallium	09/09/99	ND	2	0.701
Vanadium	09/09/99	67.7	370	0.234
Zinc	09/09/99	35.8	1500	0.234

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.02
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-114, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13600	NLE	2.494
Antimony	09/22/99	ND	14	0.499
Arsenic	09/22/99	24.9	20	0.499
Barium	09/22/99	28.6	700	0.125
Beryllium	09/22/99	1.67	1	0.125
Cadmium	09/22/99	0.516	1	0.125
Calcium	09/22/99	850	NLE	4.988
Chromium	09/22/99	186	NLE	0.125
Cobalt	09/22/99	1.11	NLE	0.125
Copper	09/22/99	53.6	600	0.748
Iron	09/22/99	41800	NLE	2.494
Lead	09/22/99	66.7	400	0.499
Magnesium	09/22/99	5730	NLE	4.988
Manganese	09/22/99	50.6	NLE	0.125
Mercury	09/14/99	ND	14	0.024
Nickel	09/22/99	6.55	250	0.125
Potassium	09/22/99	12300	NLE	4.988
Selenium	09/22/99	ND	63	0.748
Silver	09/22/99	ND	110	0.748
Sodium	09/22/99	93.9	NLE	4.988
Thallium	09/22/99	ND	2	0.748
Vanadium	09/22/99	73.0	370	0.249
Zinc	09/22/99	99.8	1500	0.249

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.04
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-115, 6-12"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	11000	NLE	2.168
Antimony	09/22/99	ND	14	0.434
Arsenic	09/22/99	12.2	20	0.434
Barium	09/22/99	30.5	700	0.108
Beryllium	09/22/99	1.08	1	0.108
Cadmium	09/22/99	0.195	1	0.108
Calcium	09/22/99	1390	NLE	4.336
Chromium	09/22/99	92.4	NLE	0.108
Cobalt	09/22/99	2.27	NLE	0.108
Copper	09/22/99	18.2	600	0.650
Iron	09/22/99	30800	NLE	2.168
Lead	09/22/99	16.4	400	0.434
Magnesium	09/22/99	3450	NLE	4.336
Manganese	09/22/99	62.1	NLE	0.108
Mercury	09/14/99	ND	14	0.022
Nickel	09/22/99	7.13	250	0.108
Potassium	09/22/99	7030	NLE	4.336
Selenium	09/22/99	ND	63	0.650
Silver	09/22/99	ND	110	0.650
Sodium	09/22/99	191	NLE	4.336
Thallium	09/22/99	ND	2	0.650
Vanadium	09/22/99	50.9	370	0.217
Zinc	09/22/99	73.0	1500	0.217

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.06
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-116, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	12500	NLE	2.267
Antimony	09/22/99	ND	14	0.453
Arsenic	09/22/99	16.2	20	0.453
Barium	09/22/99	63.7	700	0.113
Beryllium	09/22/99	1.34	1	0.113
Cadmium	09/22/99	0.493	1	0.113
Calcium	09/22/99	14200	NLE	4.533
Chromium	09/22/99	189	NLE	0.113
Cobalt	09/22/99	3.09	NLE	0.113
Copper	09/22/99	30.6	600	0.680
Iron	09/22/99	41200	NLE	2.267
Lead	09/22/99	38.3	400	0.453
Magnesium	09/22/99	5480	NLE	4.533
Manganese	09/22/99	785	NLE	0.113
Mercury	09/14/99	ND	14	0.021
Nickel	09/22/99	10.2	250	0.113
Potassium	09/22/99	9190	NLE	4.533
Selenium	09/22/99	ND	63	0.680
Silver	09/22/99	ND	110	0.680
Sodium	09/22/99	346	NLE	4.533
Thallium	09/22/99	ND	2	0.680
Vanadium	09/22/99	70.3	370	0.227
Zinc	09/22/99	126	1500	0.227

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.08
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-117, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	10800	NLE	2.192
Antimony	09/22/99	ND	14	0.438
Arsenic	09/22/99	11.8	20	0.438
Barium	09/22/99	27.6	700	0.110
Beryllium	09/22/99	1.27	1	0.110
Cadmium	09/22/99	2.26	1	0.110
Calcium	09/22/99	1530	NLE	4.385
Chromium	09/22/99	124	NLE	0.110
Cobalt	09/22/99	5.14	NLE	0.110
Copper	09/22/99	38.6	600	0.658
Iron	09/22/99	33600	NLE	2.192
Lead	09/22/99	47.0	400	0.438
Magnesium	09/22/99	3820	NLE	4.385
Manganese	09/22/99	89.8	NLE	0.110
Mercury	09/14/99	ND	14	0.022
Nickel	09/22/99	14.1	250	0.110
Potassium	09/22/99	7840	NLE	4.385
Selenium	09/22/99	ND	63	0.658
Silver	09/22/99	ND	110	0.658
Sodium	09/22/99	190	NLE	4.385
Thallium	09/22/99	ND	2	0.658
Vanadium	09/22/99	57.7	370	0.219
Zinc	09/22/99	226	1500	0.219

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.10
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-118, 4-10"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	17200	NLE	2.314
Antimony	09/22/99	ND	14	0.463
Arsenic	09/22/99	24.7	20	0.463
Barium	09/22/99	19.3	700	0.116
Beryllium	09/22/99	1.15	1	0.116
Cadmium	09/22/99	ND	1	0.116
Calcium	09/22/99	773	NLE	4.629
Chromium	09/22/99	159	NLE	0.116
Cobalt	09/22/99	1.08	NLE	0.116
Copper	09/22/99	15.2	600	0.694
Iron	09/22/99	31100	NLE	2.314
Lead	09/22/99	15.9	400	0.463
Magnesium	09/22/99	4600	NLE	4.629
Manganese	09/22/99	34.2	NLE	0.116
Mercury	09/14/99	ND	14	0.027
Nickel	09/22/99	4.83	250	0.116
Potassium	09/22/99	8370	NLE	4.629
Selenium	09/22/99	ND	63	0.694
Silver	09/22/99	ND	110	0.694
Sodium	09/22/99	188	NLE	4.629
Thallium	09/22/99	ND	2	0.694
Vanadium	09/22/99	77.5	370	0.231
Zinc	09/22/99	77.4	1500	0.231

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.12
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-119, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	7840	NLE	1.935
Antimony	09/22/99	0.571	14	0.387
Arsenic	09/22/99	5.11	20	0.387
Barium	09/22/99	50.1	700	0.097
Beryllium	09/22/99	0.397	1	0.097
Cadmium	09/22/99	0.229	1	0.097
Calcium	09/22/99	6010	NLE	3.871
Chromium	09/22/99	41.0	NLE	0.097
Cobalt	09/22/99	9.12	NLE	0.097
Copper	09/22/99	60.0	600	0.581
Iron	09/22/99	17900	NLE	1.935
Lead	09/22/99	57.1	400	0.387
Magnesium	09/22/99	4750	NLE	3.871
Manganese	09/22/99	162	NLE	0.097
Mercury	09/14/99	ND	14	0.022
Nickel	09/22/99	18.3	250	0.097
Potassium	09/22/99	1400	NLE	3.871
Selenium	09/22/99	ND	63	0.581
Silver	09/22/99	ND	110	0.581
Sodium	09/22/99	433	NLE	3.871
Thallium	09/22/99	ND	2	0.581
Vanadium	09/22/99	39.6	370	0.194
Zinc	09/22/99	144	1500	0.194

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.14
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-120, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	11100	NLE	2.119
Antimony	09/22/99	ND	14	0.424
Arsenic	09/22/99	9.25	20	0.424
Barium	09/22/99	26.2	700	0.106
Beryllium	09/22/99	1.03	1	0.106
Cadmium	09/22/99	0.181	1	0.106
Calcium	09/22/99	957	NLE	4.238
Chromium	09/22/99	81.7	NLE	0.106
Cobalt	09/22/99	2.50	NLE	0.106
Copper	09/22/99	14.3	600	0.636
Iron	09/22/99	30800	NLE	2.119
Lead	09/22/99	18.7	400	0.424
Magnesium	09/22/99	3240	NLE	4.238
Manganese	09/22/99	68.5	NLE	0.106
Mercury	09/14/99	ND	14	0.021
Nickel	09/22/99	7.84	250	0.106
Potassium	09/22/99	6470	NLE	4.238
Selenium	09/22/99	ND	63	0.636
Silver	09/22/99	ND	110	0.636
Sodium	09/22/99	154	NLE	4.238
Thallium	09/22/99	ND	2	0.636
Vanadium	09/22/99	51.3	370	0.212
Zinc	09/22/99	53.5	1500	0.212

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.16
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-121, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	10200	NLE	2.282
Antimony	09/22/99	ND	14	0.456
Arsenic	09/22/99	9.15	20	0.456
Barium	09/22/99	23.2	700	0.114
Beryllium	09/22/99	1.08	1	0.114
Cadmium	09/22/99	0.255	1	0.114
Calcium	09/22/99	936	NLE	4.565
Chromium	09/22/99	84.7	NLE	0.114
Cobalt	09/22/99	2.45	NLE	0.114
Copper	09/22/99	16.4	600	0.685
Iron	09/22/99	32500	NLE	2.282
Lead	09/22/99	14.2	400	0.456
Magnesium	09/22/99	3270	NLE	4.565
Manganese	09/22/99	63.6	NLE	0.114
Mercury	09/14/99	ND	14	0.022
Nickel	09/22/99	7.94	250	0.114
Potassium	09/22/99	6600	NLE	4.565
Selenium	09/22/99	ND	63	0.685
Silver	09/22/99	ND	110	0.685
Sodium	09/22/99	90.8	NLE	4.565
Thallium	09/22/99	ND	2	0.685
Vanadium	09/22/99	50.1	370	0.228
Zinc	09/22/99	46.0	1500	0.228

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.18
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-122, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	19500	NLE	2.440
Antimony	09/22/99	ND	14	0.488
Arsenic	09/22/99	38.8	20	0.488
Barium	09/22/99	35.5	700	0.122
Beryllium	09/22/99	2.31	1	0.122
Cadmium	09/22/99	0.705	1	0.122
Calcium	09/22/99	1800	NLE	4.880
Chromium	09/22/99	276	NLE	0.122
Cobalt	09/22/99	1.45	NLE	0.122
Copper	09/22/99	41.9	600	0.732
Iron	09/22/99	63500	NLE	2.440
Lead	09/22/99	38.8	400	0.488
Magnesium	09/22/99	8570	NLE	4.880
Manganese	09/22/99	48.6	NLE	0.122
Mercury	09/14/99	ND	14	0.023
Nickel	09/22/99	9.67	250	0.122
Potassium	09/22/99	18400	NLE	4.880
Selenium	09/22/99	ND	63	0.732
Silver	09/22/99	ND	110	0.732
Sodium	09/22/99	160	NLE	4.880
Thallium	09/22/99	ND	2	0.732
Vanadium	09/22/99	116	370	0.244
Zinc	09/22/99	106	1500	0.244

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.20
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-123, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	12000	NLE	1.790
Antimony	09/22/99	ND	14	0.358
Arsenic	09/22/99	24.0	20	0.358
Barium	09/22/99	28.3	700	0.090
Beryllium	09/22/99	1.69	1	0.090
Cadmium	09/22/99	0.390	1	0.090
Calcium	09/22/99	1820	NLE	3.580
Chromium	09/22/99	176	NLE	0.090
Cobalt	09/22/99	2.32	NLE	0.090
Copper	09/22/99	43.5	600	0.537
Iron	09/22/99	46100	NLE	1.790
Lead	09/22/99	22.0	400	0.358
Magnesium	09/22/99	5590	NLE	3.580
Manganese	09/22/99	67.6	NLE	0.090
Mercury	09/14/99	ND	14	0.023
Nickel	09/22/99	6.80	250	0.090
Potassium	09/22/99	12900	NLE	3.580
Selenium	09/22/99	ND	63	0.537
Silver	09/22/99	ND	110	0.537
Sodium	09/22/99	416	NLE	3.580
Thallium	09/22/99	ND	2	0.537
Vanadium	09/22/99	44.6	370	0.179
Zinc	09/22/99	83.7	1500	0.179

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.22
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-124, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	10500	NLE	1.833
Antimony	09/22/99	ND	14	0.367
Arsenic	09/22/99	9.92	20	0.367
Barium	09/22/99	24.3	700	0.092
Beryllium	09/22/99	1.02	1	0.092
Cadmium	09/22/99	0.201	1	0.092
Calcium	09/22/99	1610	NLE	3.666
Chromium	09/22/99	92.4	NLE	0.092
Cobalt	09/22/99	2.16	NLE	0.092
Copper	09/22/99	14.1	600	0.550
Iron	09/22/99	30200	NLE	1.833
Lead	09/22/99	11.6	400	0.367
Magnesium	09/22/99	3180	NLE	3.666
Manganese	09/22/99	135	NLE	0.092
Mercury	09/14/99	0.033	14	0.024
Nickel	09/22/99	6.80	250	0.092
Potassium	09/22/99	6250	NLE	3.666
Selenium	09/22/99	ND	63	0.550
Silver	09/22/99	ND	110	0.550
Sodium	09/22/99	367	NLE	3.666
Thallium	09/22/99	ND	2	0.550
Vanadium	09/22/99	50.5	370	0.183
Zinc	09/22/99	42.9	1500	0.183

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.24
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-125, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	15100	NLE	2.491
Antimony	09/22/99	ND	14	0.498
Arsenic	09/22/99	22.1	20	0.498
Barium	09/22/99	24.5	700	0.125
Beryllium	09/22/99	2.03	1	0.125
Cadmium	09/22/99	0.485	1	0.125
Calcium	09/22/99	2460	NLE	4.983
Chromium	09/22/99	215	NLE	0.125
Cobalt	09/22/99	1.47	NLE	0.125
Copper	09/22/99	14.4	600	0.747
Iron	09/22/99	55200	NLE	2.491
Lead	09/22/99	23.6	400	0.498
Magnesium	09/22/99	7120	NLE	4.983
Manganese	09/22/99	70.1	NLE	0.125
Mercury	09/14/99	ND	14	0.028
Nickel	09/22/99	7.39	250	0.125
Potassium	09/22/99	15900	NLE	4.983
Selenium	09/22/99	ND	63	0.747
Silver	09/22/99	ND	110	0.747
Sodium	09/22/99	104	NLE	4.983
Thallium	09/22/99	ND	2	0.747
Vanadium	09/22/99	65.1	370	0.249
Zinc	09/22/99	68.8	1500	0.249

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4777.26
Sample Received: 09/08/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-126, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	7010	NLE	2.349
Antimony	09/22/99	ND	14	0.470
Arsenic	09/22/99	9.23	20	0.470
Barium	09/22/99	24.8	700	0.117
Beryllium	09/22/99	0.691	1	0.117
Cadmium	09/22/99	0.283	1	0.117
Calcium	09/22/99	2690	NLE	4.699
Chromium	09/22/99	51.1	NLE	0.117
Cobalt	09/22/99	2.50	NLE	0.117
Copper	09/22/99	20.0	600	0.705
Iron	09/22/99	22200	NLE	2.349
Lead	09/22/99	32.0	400	0.470
Magnesium	09/22/99	2290	NLE	4.699
Manganese	09/22/99	86.6	NLE	0.117
Mercury	09/14/99	0.029	14	0.022
Nickel	09/22/99	6.93	250	0.117
Potassium	09/22/99	3920	NLE	4.699
Selenium	09/22/99	ND	63	0.705
Silver	09/22/99	ND	110	0.705
Sodium	09/22/99	126	NLE	4.699
Thallium	09/22/99	ND	2	0.705
Vanadium	09/22/99	39.5	370	0.235
Zinc	09/22/99	54.7	1500	0.235

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.02
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-127, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	10500	NLE	1.955
Antimony	09/22/99	16.7	14	0.391
Arsenic	09/22/99	20.7	20	0.391
Barium	09/22/99	122	700	0.098
Beryllium	09/22/99	1.62	1	0.098
Cadmium	09/22/99	0.523	1	0.098
Calcium	09/22/99	13900	NLE	3.909
Chromium	09/22/99	140	NLE	0.098
Cobalt	09/22/99	27.4	NLE	0.098
Copper	09/22/99	277	600	0.586
Iron	09/22/99	34000	NLE	1.955
Lead	09/22/99	181	400	0.391
Magnesium	09/22/99	4760	NLE	3.909
Manganese	09/22/99	1110	NLE	0.098
Mercury	09/21/99	0.047	14	0.021
Nickel	09/22/99	29.9	250	0.098
Potassium	09/22/99	4990	NLE	3.909
Selenium	09/22/99	ND	63	0.586
Silver	09/22/99	ND	110	0.586
Sodium	09/22/99	268	NLE	3.909
Thallium	09/22/99	ND	2	0.586
Vanadium	09/22/99	52.3	370	0.195
Zinc	09/22/99	725	1500	0.195

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.04
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-128, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13300	NLE	2.219
Antimony	09/22/99	ND	14	0.444
Arsenic	09/22/99	25.4	20	0.444
Barium	09/22/99	22.8	700	0.111
Beryllium	09/22/99	1.17	1	0.111
Cadmium	09/22/99	0.394	1	0.111
Calcium	09/22/99	1480	NLE	4.438
Chromium	09/22/99	189	NLE	0.111
Cobalt	09/22/99	0.802	NLE	0.111
Copper	09/22/99	21.3	600	0.666
Iron	09/22/99	44100	NLE	2.219
Lead	09/22/99	18.1	400	0.444
Magnesium	09/22/99	5710	NLE	4.438
Manganese	09/22/99	38.0	NLE	0.111
Mercury	09/21/99	0.032	14	0.023
Nickel	09/22/99	5.64	250	0.111
Potassium	09/22/99	12900	NLE	4.438
Selenium	09/22/99	1.05	63	0.666
Silver	09/22/99	ND	110	0.666
Sodium	09/22/99	251	NLE	4.438
Thallium	09/22/99	ND	2	0.666
Vanadium	09/22/99	69.4	370	0.222
Zinc	09/22/99	66.3	1500	0.222

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.06
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-129, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	16000	NLE	2.515
Antimony	09/22/99	ND	14	0.503
Arsenic	09/22/99	16.1	20	0.503
Barium	09/22/99	47.9	700	0.126
Beryllium	09/22/99	1.59	1	0.126
Cadmium	09/22/99	0.426	1	0.126
Calcium	09/22/99	6480	NLE	5.030
Chromium	09/22/99	193	NLE	0.126
Cobalt	09/22/99	3.38	NLE	0.126
Copper	09/22/99	17.2	600	0.755
Iron	09/22/99	48600	NLE	2.515
Lead	09/22/99	26.6	400	0.503
Magnesium	09/22/99	5420	NLE	5.030
Manganese	09/22/99	583	NLE	0.126
Mercury	09/21/99	ND	14	0.034
Nickel	09/22/99	10.1	250	0.126
Potassium	09/22/99	10700	NLE	5.030
Selenium	09/22/99	ND	63	0.755
Silver	09/22/99	ND	110	0.755
Sodium	09/22/99	155	NLE	5.030
Thallium	09/22/99	ND	2	0.755
Vanadium	09/22/99	83.4	370	0.252
Zinc	09/22/99	129	1500	0.252

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.08
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-130, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	16500	NLE	2.388
Antimony	09/22/99	ND	14	0.478
Arsenic	09/22/99	24.1	20	0.478
Barium	09/22/99	32.4	700	0.119
Beryllium	09/22/99	1.85	1	0.119
Cadmium	09/22/99	0.288	1	0.119
Calcium	09/22/99	1190	NLE	4.776
Chromium	09/22/99	221	NLE	0.119
Cobalt	09/22/99	1.03	NLE	0.119
Copper	09/22/99	21.6	600	0.716
Iron	09/22/99	46300	NLE	2.388
Lead	09/22/99	38.6	400	0.478
Magnesium	09/22/99	6440	NLE	4.776
Manganese	09/22/99	38.9	NLE	0.119
Mercury	09/21/99	ND	14	0.027
Nickel	09/22/99	5.28	250	0.119
Potassium	09/22/99	13800	NLE	4.776
Selenium	09/22/99	ND	63	0.716
Silver	09/22/99	ND	110	0.716
Sodium	09/22/99	121	NLE	4.776
Thallium	09/22/99	ND	2	0.716
Vanadium	09/22/99	102	370	0.239
Zinc	09/22/99	58.0	1500	0.239

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.10
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-131, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	5600	NLE	2.321
Antimony	09/22/99	0.793	14	0.464
Arsenic	09/22/99	6.70	20	0.464
Barium	09/22/99	45.9	700	0.116
Beryllium	09/22/99	0.574	1	0.116
Cadmium	09/22/99	0.745	1	0.116
Calcium	09/22/99	2500	NLE	4.643
Chromium	09/22/99	40.6	NLE	0.116
Cobalt	09/22/99	4.55	NLE	0.116
Copper	09/22/99	60.6	600	0.696
Iron	09/22/99	15100	NLE	2.321
Lead	09/22/99	126	400	0.464
Magnesium	09/22/99	1440	NLE	4.643
Manganese	09/22/99	136	NLE	0.116
Mercury	09/21/99	0.094	14	0.025
Nickel	09/22/99	9.94	250	0.116
Potassium	09/22/99	1950	NLE	4.643
Selenium	09/22/99	ND	63	0.696
Silver	09/22/99	ND	110	0.696
Sodium	09/22/99	120	NLE	4.643
Thallium	09/22/99	ND	2	0.696
Vanadium	09/22/99	32.3	370	0.232
Zinc	09/22/99	149	1500	0.232

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.12
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-132, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	17800	NLE	2.222
Antimony	09/22/99	ND	14	0.444
Arsenic	09/22/99	28.0	20	0.444
Barium	09/22/99	33.8	700	0.111
Beryllium	09/22/99	2.07	1	0.111
Cadmium	09/22/99	0.340	1	0.111
Calcium	09/22/99	1640	NLE	4.443
Chromium	09/22/99	241	NLE	0.111
Cobalt	09/22/99	1.37	NLE	0.111
Copper	09/22/99	20.5	600	0.667
Iron	09/22/99	52200	NLE	2.222
Lead	09/22/99	26.5	400	0.444
Magnesium	09/22/99	7370	NLE	4.443
Manganese	09/22/99	67.4	NLE	0.111
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	6.64	250	0.111
Potassium	09/22/99	16000	NLE	4.443
Selenium	09/22/99	0.918	63	0.667
Silver	09/22/99	ND	110	0.667
Sodium	09/22/99	123	NLE	4.443
Thallium	09/22/99	ND	2	0.667
Vanadium	09/22/99	106	370	0.222
Zinc	09/22/99	78.6	1500	0.222

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.14
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-133, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	17400	NLE	2.314
Antimony	09/22/99	ND	14	0.463
Arsenic	09/22/99	26.9	20	0.463
Barium	09/22/99	92.3	700	0.116
Beryllium	09/22/99	2.01	1	0.116
Cadmium	09/22/99	0.837	1	0.116
Calcium	09/22/99	1880	NLE	4.629
Chromium	09/22/99	222	NLE	0.116
Cobalt	09/22/99	1.66	NLE	0.116
Copper	09/22/99	49.5	600	0.694
Iron	09/22/99	47600	NLE	2.314
Lead	09/22/99	77.2	400	0.463
Magnesium	09/22/99	6790	NLE	4.629
Manganese	09/22/99	149	NLE	0.116
Mercury	09/21/99	0.156	14	0.025
Nickel	09/22/99	7.49	250	0.116
Potassium	09/22/99	15000	NLE	4.629
Selenium	09/22/99	ND	63	0.694
Silver	09/22/99	ND	110	0.694
Sodium	09/22/99	153	NLE	4.629
Thallium	09/22/99	ND	2	0.694
Vanadium	09/22/99	106	370	0.231
Zinc	09/22/99	250	1500	0.231

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.16
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-134, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	15300	NLE	2.371
Antimony	09/22/99	ND	14	0.474
Arsenic	09/22/99	20.6	20	0.474
Barium	09/22/99	40.2	700	0.119
Beryllium	09/22/99	1.59	1	0.119
Cadmium	09/22/99	0.626	1	0.119
Calcium	09/22/99	1760	NLE	4.741
Chromium	09/22/99	177	NLE	0.119
Cobalt	09/22/99	2.13	NLE	0.119
Copper	09/22/99	45.6	600	0.711
Iron	09/22/99	41400	NLE	2.371
Lead	09/22/99	93.2	400	0.474
Magnesium	09/22/99	5810	NLE	4.741
Manganese	09/22/99	97.6	NLE	0.119
Mercury	09/21/99	0.031	14	0.022
Nickel	09/22/99	8.27	250	0.119
Potassium	09/22/99	11500	NLE	4.741
Selenium	09/22/99	ND	63	0.711
Silver	09/22/99	ND	110	0.711
Sodium	09/22/99	138	NLE	4.741
Thallium	09/22/99	ND	2	0.711
Vanadium	09/22/99	84.4	370	0.237
Zinc	09/22/99	125	1500	0.237

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.18
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-135, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13100	NLE	2.438
Antimony	09/22/99	ND	14	0.488
Arsenic	09/22/99	21.1	20	0.488
Barium	09/22/99	31.4	700	0.122
Beryllium	09/22/99	1.05	1	0.122
Cadmium	09/22/99	0.558	1	0.122
Calcium	09/22/99	1250	NLE	4.876
Chromium	09/22/99	134	NLE	0.122
Cobalt	09/22/99	2.87	NLE	0.122
Copper	09/22/99	97.6	600	0.731
Iron	09/22/99	33700	NLE	2.438
Lead	09/22/99	442	400	0.488
Magnesium	09/22/99	3410	NLE	4.876
Manganese	09/22/99	175	NLE	0.122
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	10.4	250	0.122
Potassium	09/22/99	6710	NLE	4.876
Selenium	09/22/99	1.23	63	0.731
Silver	09/22/99	ND	110	0.731
Sodium	09/22/99	88.7	NLE	4.876
Thallium	09/22/99	ND	2	0.731
Vanadium	09/22/99	65.1	370	0.244
Zinc	09/22/99	283	1500	0.244

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.20
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-136, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13600	NLE	2.243
Antimony	09/22/99	ND	14	0.449
Arsenic	09/22/99	17.0	20	0.449
Barium	09/22/99	35.6	700	0.112
Beryllium	09/22/99	1.47	1	0.112
Cadmium	09/22/99	0.460	1	0.112
Calcium	09/22/99	1260	NLE	4.486
Chromium	09/22/99	151	NLE	0.112
Cobalt	09/22/99	2.86	NLE	0.112
Copper	09/22/99	316	600	0.673
Iron	09/22/99	36900	NLE	2.243
Lead	09/22/99	59.8	400	0.449
Magnesium	09/22/99	4550	NLE	4.486
Manganese	09/22/99	54.8	NLE	0.112
Mercury	09/21/99	0.047	14	0.025
Nickel	09/22/99	8.54	250	0.112
Potassium	09/22/99	9740	NLE	4.486
Selenium	09/22/99	ND	63	0.673
Silver	09/22/99	ND	110	0.673
Sodium	09/22/99	181	NLE	4.486
Thallium	09/22/99	ND	2	0.673
Vanadium	09/22/99	78.0	370	0.224
Zinc	09/22/99	74.5	1500	0.224

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.22
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-137, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	18100	NLE	2.402
Antimony	09/22/99	ND	14	0.480
Arsenic	09/22/99	22.2	20	0.480
Barium	09/22/99	34.6	700	0.120
Beryllium	09/22/99	2.19	1	0.120
Cadmium	09/22/99	0.453	1	0.120
Calcium	09/22/99	1420	NLE	4.805
Chromium	09/22/99	204	NLE	0.120
Cobalt	09/22/99	1.60	NLE	0.120
Copper	09/22/99	21.4	600	0.721
Iron	09/22/99	52500	NLE	2.402
Lead	09/22/99	48.4	400	0.480
Magnesium	09/22/99	7510	NLE	4.805
Manganese	09/22/99	50.0	NLE	0.120
Mercury	09/21/99	0.083	14	0.025
Nickel	09/22/99	6.92	250	0.120
Potassium	09/22/99	17500	NLE	4.805
Selenium	09/22/99	ND	63	0.721
Silver	09/22/99	ND	110	0.721
Sodium	09/22/99	134	NLE	4.805
Thallium	09/22/99	ND	2	0.721
Vanadium	09/22/99	110	370	0.240
Zinc	09/22/99	79.6	1500	0.240

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.24
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-138, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	12300	NLE	1.841
Antimony	09/22/99	ND	14	0.368
Arsenic	09/22/99	15.4	20	0.368
Barium	09/22/99	38.0	700	0.092
Beryllium	09/22/99	1.26	1	0.092
Cadmium	09/22/99	0.627	1	0.092
Calcium	09/22/99	2120	NLE	3.682
Chromium	09/22/99	122	NLE	0.092
Cobalt	09/22/99	3.43	NLE	0.092
Copper	09/22/99	27.2	600	0.552
Iron	09/22/99	35000	NLE	1.841
Lead	09/22/99	46.0	400	0.368
Magnesium	09/22/99	4410	NLE	3.682
Manganese	09/22/99	79.4	NLE	0.092
Mercury	09/21/99	0.060	14	0.026
Nickel	09/22/99	9.93	250	0.092
Potassium	09/22/99	8520	NLE	3.682
Selenium	09/22/99	ND	63	0.552
Silver	09/22/99	ND	110	0.552
Sodium	09/22/99	166	NLE	3.682
Thallium	09/22/99	ND	2	0.552
Vanadium	09/22/99	74.1	370	0.184
Zinc	09/22/99	94.8	1500	0.184

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4790.26
Sample Received: 09/15/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-139, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	12400	NLE	2.445
Antimony	09/22/99	1.68	14	0.489
Arsenic	09/22/99	38.6	20	0.489
Barium	09/22/99	133	700	0.122
Beryllium	09/22/99	1.09	1	0.122
Cadmium	09/22/99	25.2	1	0.122
Calcium	09/22/99	1530	NLE	4.890
Chromium	09/22/99	215	NLE	0.122
Cobalt	09/22/99	4.20	NLE	0.122
Copper	09/22/99	243	600	0.734
Iron	09/22/99	132000	NLE	2.445
Lead	09/22/99	1090	400	0.489
Magnesium	09/22/99	4110	NLE	4.890
Manganese	09/22/99	332	NLE	0.122
Mercury	09/21/99	0.078	14	0.026
Nickel	09/22/99	13.1	250	0.122
Potassium	09/22/99	8990	NLE	4.890
Selenium	09/22/99	1.27	63	0.734
Silver	09/22/99	1.33	110	0.734
Sodium	09/22/99	348	NLE	4.890
Thallium	09/22/99	ND	2	0.734
Vanadium	09/22/99	90.6	370	0.245
Zinc	09/22/99	6530	1500	0.245

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.02
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-140, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	12300	NLE	2.369
Antimony	09/22/99	ND	14	0.474
Arsenic	09/22/99	17.7	20	0.474
Barium	09/22/99	29.0	700	0.118
Beryllium	09/22/99	1.47	1	0.118
Cadmium	09/22/99	0.379	1	0.118
Calcium	09/22/99	998	NLE	4.737
Chromium	09/22/99	162	NLE	0.118
Cobalt	09/22/99	1.60	NLE	0.118
Copper	09/22/99	23.0	600	0.711
Iron	09/22/99	36200	NLE	2.369
Lead	09/22/99	28.6	400	0.474
Magnesium	09/22/99	4960	NLE	4.737
Manganese	09/22/99	35.6	NLE	0.118
Mercury	09/21/99	0.061	14	0.026
Nickel	09/22/99	6.22	250	0.118
Potassium	09/22/99	10700	NLE	4.737
Selenium	09/22/99	ND	63	0.711
Silver	09/22/99	ND	110	0.711
Sodium	09/22/99	264	NLE	4.737
Thallium	09/22/99	ND	2	0.711
Vanadium	09/22/99	76.0	370	0.237
Zinc	09/22/99	50.6	1500	0.237

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.04
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-141, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	14100	NLE	2.246
Antimony	09/22/99	ND	14	0.449
Arsenic	09/22/99	22.3	20	0.449
Barium	09/22/99	24.8	700	0.112
Beryllium	09/22/99	1.96	1	0.112
Cadmium	09/22/99	0.540	1	0.112
Calcium	09/22/99	1830	NLE	4.492
Chromium	09/22/99	207	NLE	0.112
Cobalt	09/22/99	1.29	NLE	0.112
Copper	09/22/99	10.2	600	0.674
Iron	09/22/99	48500	NLE	2.246
Lead	09/22/99	30.0	400	0.449
Magnesium	09/22/99	6480	NLE	4.492
Manganese	09/22/99	43.7	NLE	0.112
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	6.64	250	0.112
Potassium	09/22/99	14700	NLE	4.492
Selenium	09/22/99	ND	63	0.674
Silver	09/22/99	ND	110	0.674
Sodium	09/22/99	122	NLE	4.492
Thallium	09/22/99	ND	2	0.674
Vanadium	09/22/99	80.0	370	0.225
Zinc	09/22/99	80.3	1500	0.225

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.06
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-142, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13900	NLE	2.646
Antimony	09/22/99	ND	14	0.529
Arsenic	09/22/99	20.3	20	0.529
Barium	09/22/99	32.5	700	0.132
Beryllium	09/22/99	1.85	1	0.132
Cadmium	09/22/99	0.555	1	0.132
Calcium	09/22/99	1260	NLE	5.293
Chromium	09/22/99	193	NLE	0.132
Cobalt	09/22/99	1.31	NLE	0.132
Copper	09/22/99	28.0	600	0.794
Iron	09/22/99	42900	NLE	2.646
Lead	09/22/99	17.9	400	0.529
Magnesium	09/22/99	5480	NLE	5.293
Manganese	09/22/99	47.3	NLE	0.132
Mercury	09/21/99	ND	14	0.027
Nickel	09/22/99	5.77	250	0.132
Potassium	09/22/99	12500	NLE	5.293
Selenium	09/22/99	ND	63	0.794
Silver	09/22/99	ND	110	0.794
Sodium	09/22/99	103	NLE	5.293
Thallium	09/22/99	ND	2	0.794
Vanadium	09/22/99	82.7	370	0.265
Zinc	09/22/99	98.3	1500	0.265

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.08
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-143, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13600	NLE	2.058
Antimony	09/22/99	ND	14	0.412
Arsenic	09/22/99	20.0	20	0.412
Barium	09/22/99	11.3	700	0.103
Beryllium	09/22/99	1.11	1	0.103
Cadmium	09/22/99	0.233	1	0.103
Calcium	09/22/99	651	NLE	4.116
Chromium	09/22/99	148	NLE	0.103
Cobalt	09/22/99	0.770	NLE	0.103
Copper	09/22/99	12.4	600	0.617
Iron	09/22/99	29900	NLE	2.058
Lead	09/22/99	5.72	400	0.412
Magnesium	09/22/99	3660	NLE	4.116
Manganese	09/22/99	31.2	NLE	0.103
Mercury	09/21/99	ND	14	0.023
Nickel	09/22/99	3.74	250	0.103
Potassium	09/22/99	7330	NLE	4.116
Selenium	09/22/99	ND	63	0.617
Silver	09/22/99	ND	110	0.617
Sodium	09/22/99	130	NLE	4.116
Thallium	09/22/99	ND	2	0.617
Vanadium	09/22/99	73.0	370	0.206
Zinc	09/22/99	42.2	1500	0.206

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.10
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-144, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	13200	NLE	2.146
Antimony	09/22/99	ND	14	0.429
Arsenic	09/22/99	16.2	20	0.429
Barium	09/22/99	21.8	700	0.107
Beryllium	09/22/99	1.19	1	0.107
Cadmium	09/22/99	0.282	1	0.107
Calcium	09/22/99	1570	NLE	4.293
Chromium	09/22/99	134	NLE	0.107
Cobalt	09/22/99	1.20	NLE	0.107
Copper	09/22/99	13.6	600	0.644
Iron	09/22/99	29400	NLE	2.146
Lead	09/22/99	17.1	400	0.429
Magnesium	09/22/99	3830	NLE	4.293
Manganese	09/22/99	52.3	NLE	0.107
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	4.62	250	0.107
Potassium	09/22/99	7650	NLE	4.293
Selenium	09/22/99	ND	63	0.644
Silver	09/22/99	ND	110	0.644
Sodium	09/22/99	67.4	NLE	4.293
Thallium	09/22/99	ND	2	0.644
Vanadium	09/22/99	63.9	370	0.215
Zinc	09/22/99	59.5	1500	0.215

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.12
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-145, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	16600	NLE	2.436
Antimony	09/22/99	ND	14	0.487
Arsenic	09/22/99	24.0	20	0.487
Barium	09/22/99	9.04	700	0.122
Beryllium	09/22/99	2.44	1	0.122
Cadmium	09/22/99	0.514	1	0.122
Calcium	09/22/99	515	NLE	4.872
Chromium	09/22/99	269	NLE	0.122
Cobalt	09/22/99	0.664	NLE	0.122
Copper	09/22/99	6.31	600	0.731
Iron	09/22/99	55000	NLE	2.436
Lead	09/22/99	9.35	400	0.487
Magnesium	09/22/99	7780	NLE	4.872
Manganese	09/22/99	19.3	NLE	0.122
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	5.70	250	0.122
Potassium	09/22/99	18800	NLE	4.872
Selenium	09/22/99	ND	63	0.731
Silver	09/22/99	ND	110	0.731
Sodium	09/22/99	102	NLE	4.872
Thallium	09/22/99	ND	2	0.731
Vanadium	09/22/99	111	370	0.244
Zinc	09/22/99	57.5	1500	0.244

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.14
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-146, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	15600	NLE	2.073
Antimony	09/22/99	ND	14	0.415
Arsenic	09/22/99	22.5	20	0.415
Barium	09/22/99	31.6	700	0.104
Beryllium	09/22/99	1.88	1	0.104
Cadmium	09/22/99	0.526	1	0.104
Calcium	09/22/99	1160	NLE	4.145
Chromium	09/22/99	214	NLE	0.104
Cobalt	09/22/99	1.43	NLE	0.104
Copper	09/22/99	17.5	600	0.622
Iron	09/22/99	46600	NLE	2.073
Lead	09/22/99	25.1	400	0.415
Magnesium	09/22/99	6440	NLE	4.145
Manganese	09/22/99	49.1	NLE	0.104
Mercury	09/21/99	0.061	14	0.020
Nickel	09/22/99	6.05	250	0.104
Potassium	09/22/99	14700	NLE	4.145
Selenium	09/22/99	ND	63	0.622
Silver	09/22/99	ND	110	0.622
Sodium	09/22/99	87.8	NLE	4.145
Thallium	09/22/99	ND	2	0.622
Vanadium	09/22/99	94.7	370	0.207
Zinc	09/22/99	67.4	1500	0.207

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.16
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-147, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	14800	NLE	1.813
Antimony	09/22/99	ND	14	0.363
Arsenic	09/22/99	15.5	20	0.363
Barium	09/22/99	30.2	700	0.091
Beryllium	09/22/99	1.52	1	0.091
Cadmium	09/22/99	0.562	1	0.091
Calcium	09/22/99	1540	NLE	3.627
Chromium	09/22/99	144	NLE	0.091
Cobalt	09/22/99	2.42	NLE	0.091
Copper	09/22/99	4.50	600	0.544
Iron	09/22/99	48200	NLE	1.813
Lead	09/22/99	9.06	400	0.363
Magnesium	09/22/99	4500	NLE	3.627
Manganese	09/22/99	32.1	NLE	0.091
Mercury	09/21/99	ND	14	0.024
Nickel	09/22/99	8.02	250	0.091
Potassium	09/22/99	10800	NLE	3.627
Selenium	09/22/99	ND	63	0.544
Silver	09/22/99	ND	110	0.544
Sodium	09/22/99	120	NLE	3.627
Thallium	09/22/99	ND	2	0.544
Vanadium	09/22/99	81.4	370	0.181
Zinc	09/22/99	54.1	1500	0.181

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 4793.18
Sample Received: 09/20/99
Sample Matrix: Soil

Site: M-12
Ft. Monmouth, New Jersey

Field ID#: M-12-148, 0-6"

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date of Analysis	Result	Soil Cleanup Criteria	MDL
Aluminum	09/22/99	8510	NLE	2.212
Antimony	09/22/99	ND	14	0.442
Arsenic	09/22/99	7.97	20	0.442
Barium	09/22/99	17.6	700	0.111
Beryllium	09/22/99	0.810	1	0.111
Cadmium	09/22/99	0.340	1	0.111
Calcium	09/22/99	2050	NLE	4.423
Chromium	09/22/99	69.6	NLE	0.111
Cobalt	09/22/99	2.20	NLE	0.111
Copper	09/22/99	7.79	600	0.663
Iron	09/22/99	27300	NLE	2.212
Lead	09/22/99	7.95	400	0.442
Magnesium	09/22/99	2250	NLE	4.423
Manganese	09/22/99	42.2	NLE	0.111
Mercury	09/21/99	ND	14	0.021
Nickel	09/22/99	6.32	250	0.111
Potassium	09/22/99	4940	NLE	4.423
Selenium	09/22/99	ND	63	0.663
Silver	09/22/99	ND	110	0.663
Sodium	09/22/99	59.9	NLE	4.423
Thallium	09/22/99	ND	2	0.663
Vanadium	09/22/99	41.6	370	0.221
Zinc	09/22/99	36.0	1500	0.221

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

APPENDIX E

Soil Boring Logs

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B1

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.01	1	SAND, fine/ medium - dark brown some clay	1033	0.04-PPM
12					
18	3420.02	2	SAND, medium/coarse - lt.tan with gravel	1033	1.0-PPM
24			CINDERS		
30			Alt. Sand Dark Green tan with clay layers and some organic natural material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B01.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B2

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.03	1	Fine Sand Cinders and Tan/Brown	1110	0.06-PPM
12			CLAYEY SAND, Fine- brown/Tan Cinders		
18	3420.04	2		1110	0.06-PPM
24					
30			Black Clay & Cinders		
36			CLAY black With Glass Fragments		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B02.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B3

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.05	1	SAND, medium/fine - Orange/ Tan/ Dark Brown With Cinders and Gravel	1130	1.0-PPM
12			SAND, fine - with Cinders		
18	3420.06	2		1130	8.0-PPM
24			SAND, fine - With Dark Green Fine Sands		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B03.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B4

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-19-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.07	1	SAND, medium - tan/brown	1156	3.0-PPM
12		2	CLAY brown with fine sands		
18	3420.08		CLAY black with organic materials	1156	1.0-PPM
			CLAY black with very fine green/gray sand		
24			Cinder Material		
			CLAY black with gray fine sand		
30			CLAY black with Cinders		
36					
42					

10-07-1999 X:\WTECH5\M12\M12-B04.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B5

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.09	1	SAND, fine - tan/ orange/ yellow with cinder fragments	1300	1.8-PPM
12			SAND, fine - With Cinders and Coal Fragments		
18	3420.10	2		1300	1.0-PPM
24			CLAY black with organic material and fine sand		
30			CLAY black with organic material and fine sand		
36					
42			CLAY with medium sand		
48					

10-27-1999 X:\WTECH5\M12\M12-B05.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B6

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			CLAYEY SILT, dark brown with organic materials		
6	3420.11	1		1325	0.08-PPM
12					
18	3420.12	2		1325	0.40-PPM
			SAND, fine - brown yellow orange		
24					
			SAND, fine - green/ orange with Clay		
30					
36			SAND, fine - Black/ green with Clay		
42			WOOD Board Material		
48					

10-07-1999 X:\MTECH5\M12\M12-B06.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B7

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.13	1	LOAMY Silt with fine sand brown and organic material	1355	2.0-PPM
12					
18	3420.14	2		1355	1.0-PPM
24			CLAYEY SILT, fine - brown and fine sand		
30			SILTY SAND, fine - black/brown with fine sand green		
			WOOD Debris		
36			Mixed Sands with Fill Material: Cinders, Plastic and Glass		
42					
48			SAND, fine - green, oily, oil odors 70 ppm OVA		
54					

10-08-1999 X:\MTECH5\M12\M12-B07.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B8

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-19-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.15	1	SAND, medium/fine	1445	0.0-PPM
12					
18	3420.16	2		1445	0.0-PPM
24			SAND, fine/ medium brown/orange with black angular fragments		
30			CLAYEY SAND, fine - with black wafer material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B08.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B9

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.17	1	SAND, medium/fine - brown	1517	0.0-PPM
12			SAND, medium/fine - fragments		
18	3420.18	2		1517	0.0-PPM
24			SAND, fine		
30			CLAYEY SILT, black with some fine sand		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B09.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B10

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.02	1	SAND, fine - brown/tan	1058	0.0-PPM
12					
18	3424.03	2	CLAYEY SILT, black with Cinders	1058	0.0-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B10.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B11

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6			SAND, fine/ medium brown orange/yellow with some gravel		
	3424.04	1		1135	0.0-PPM
12					
	3424.05	2		1135	0.0-PPM
18					
24					
30					
36			Cinder Material		
42					

10-07-1999 X:\MTECH5\M12\M12-B11.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B12

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6			SAND, fine - brown		
	3424.06	1		1150	0.08-PPM
12					
18	3424.07	2		1150	0.06-PPM
24					
			SANDY CLAY, brown/green		
30			CLAYEY SILT, green		
			CINDERS		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B12.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B13

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.08	1	SAND, brown orange/green	1213	0.0-PPM
12					
18	3424.09	2	CINDERS and Sand	1213	0.0-PPM
24			SILTY CLAY, fine - sand with organic material		
30					
36					
42					

10-27-1999 X:\WTECH5\M12\M12-B13.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B14

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, orange-brown		
6	3424.10	1		1256	0.0-PPM
12					
18	3424.11	2		1256	0.0-PPM
24			SAND, brown		
			SAND, green-yellow with some clay		
30			SANDY SILT, green orange		
36					
42					

X:\MTECH5\M12\M12-B14.BOR 10-07-1999

000056

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B16

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.14	1		1423	0.0-PPM
12					
18	3424.15	2		1423	0.0-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B16.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B17

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.16	1	Sands Cinders	1443	0.0-PPM
12					
18	3424.17	2		1443	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B17.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B18

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.18	1		1500	0.0-PPM
12					
18	3424.19	2		1500	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B18.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B19

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.20	1		1520	0.0-PPM
12					
18	3424.21	2		1520	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B19.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B20

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3425.02	1	SAND, fine - brown/tan	0937	0.0-PPM
12					
18	3425.03	2		0937	0.0-PPM
24			Cinders SAND, fine - black		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B20.BOR

000062

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B21

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, green, brown, orange with fill material		
6	3425.04	1		1005	0.0-PPM
			CLAYEY SAND, black/brown with small angular gravel		
12					
18	3425.05	2	CLAYEY SILT, orange	1005	0.0-PPM
			SAND, fine - black/green		
24					
30					
36					
42					

10-08-1999 X:\MTECH5\M12\M12-B21.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B22

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, fine - black with some fill material		
6	3425.06	1		1025	0.0-PPM
			SAND, fine - green		
12			SAND, fine - tan/orange		
18	3425.07	2	CLAYEY SILT, fine - olive green	1025	0.0-PPM
24			SAND, fine/ medium black ang. gravels		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B22.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B23

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, fine - orange		
6	3425.08	1		1111	0.0-PPM
12					
18	3425.09	2		1111	0.8-PPM
24			CLAYEY SILT, fine - orange/green		
30			CLAY with some SAND, fine		
36			SAND, fine - orange		
			SAND, fine - green		
42					
48			SAND, fine - orange		
54					

10-27-1999 X:\MTECH5\M12\M12-B23.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B24

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, medium - brown		
6	3425.10	1		1130	0.00-PPM
12					
18	3425.11	2		1130	0.04-PPM
			SAND, medium/fine - gray		
24					
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B24.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B25

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SAND, medium/fine - olive tan		
6	3425.12	1		1150	0.08-PPM
12					
18	3425.13	2		1150	0.06-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B25.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B26

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium - black/brown		
6	3425.14	1		1155	0.04-PPM
			SAND, medium - orange/yellow		
12		2			
18	3425.15		CLAYEY SAND, fine - orange/green	1155	0.04-PPM
24			SANDY CLAY, orange/green		
30			SAND, medium - green		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B26.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B27

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine - green/orange		
6	3425.16	1		1410	0.00-PPM
12					
18	3425.17	2		1410	0.04-PPM
24			SAND, fine - green/orange with some CINDERS		
30			CINDERS		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B27.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B28

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY CLAY, olive orange		
6	3425.18	1		1430	0.08-PPM
12					
18	3425.19	2		1430	0.06-PPM
			WOOD DEBRIS		
			SAND, fine - with some CINDERS		
24					
			ASPHALT Material		
30					
			CLAYEY SAND, fine - looam black		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B28.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B29

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3425.20	1	SANDY CLAY, well sorted green/orange	1502	0.00-PPM
12					
18	3425.21	2		1502	0.00-PPM
24			CLAYEY SAND, fine - green/orange with some CINDERS		
			CINDERS		
30			SAND, fine - orange		
			CLAYEY SILT, black		
36					
42					
			fill material wood , brick and glass		
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B29.BOR

000071

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B30

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - with some fill material throughout		
6	3425.22	1		1527	0.00-PPM
12					
18	3425.23	2		1527	0.06-PPM
24			SANDY CLAY, fine - brown/green		
			CLAYEY SAND, medium - black		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B30.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B31

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY SILT, fine - brown with fill material brick & coal		
6	3428.02	1		0900	0.00-PPM
12			SANDY SILT, fine - olive green		
18	3428.03	2		0900	0.06-PPM
			SAND, fine - fill material brick, coal, asphalt, cinder		
24					
			SAND, medium - olive green, tan, orange		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B31.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B32

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY CLAY, brown		
6	3428.04	1		0925	0.00-PPM
			SANDY CLAY, brown with asphalt fill		
12					
			CLAYEY SAND, fine - olive green		
18	3428.05	2		0925	0.00-PPM
			CINDERS and SAND, fine - black		
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B32.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B33

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			CLAYEY SAND, medium - with brick & gravel fill		
6	3428.06	1		1000	0.00-PPM
12			CLAYEY SAND, & SILT with some gravels		
18	3428.07	2		1000	0.00-PPM
24			CLAYEY SAND, medium - orange tan w/ 50% gravels		
			CINDERS		
30					
36					

10-08-1999 X:\MTECH5\M12\M12-B33.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B34

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6	3428.08	1		1025	0.00-PPM
12			ASPHALT material mixed with sand M/F		
18	3428.09	2	CLAYEY SAND, fine - Silt olive green/orange/yellow	1025	0.00-PPM
24					
30					
36			CINDERS		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B34.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B35

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown with scant fragments of brick and coal bits <2%		
6	3428.10	1		1109	0.00-PPM
12					
18	3428.11	2	SAND, orange/yellow-olive green-fine with <1% fragments of coal	1109	0.00-PPM
24					
			SAND, medium/fine - & some tracing of glass fragments		
30					
36					
42					
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B35.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B36

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - brown/orange		
6			SAND, medium - brown/olive green		
	3428.12	1		1150	0.00-PPM
12					
	3428.13	2		1150	0.04-PPM
18					
24					
30			SAND, medium/coarse - olive green		
36					

10-07-1999 X:\MTECH5\M12\M12-B36.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B37

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			CINDERS & mixed Sands		
6	3428.14	1		1300	0.08-PPM
12					
			SAND, fine		
18	3428.15	2		1300	0.00-PPM
24			SAND, medium/fine - tan/olive green		
30					
36					
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B37.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B38

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - with some CINDERS		
6			CINDERS with SAND, medium/fine - brown/black		
	3428.16	1		1319	0.00-PPM
12					
18	3428.17	2	SAND, medium/fine - light brown	1319	0.00-PPM
24					
			SAND, fine - light brown		
30			SAND, medium - orange		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B38.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B39

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium - dark brown		
6			CINDERS black		
	3428.18	1	SAND, fine - with brick colored material	1345	0.00-PPM
			SAND, medium/coarse - tan with small gravels<5%		
12					
			SAND, medium/fine - gray/brown		
18	3428.19	2		1345	0.00-PPM
			SAND, fine - black Stained		
24					
			SAND, medium/fine - light brown		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B39.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B40

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3428.20	1	SAND, fine - with some CINDERS	1420	0.00-PPM
12					
18	3428.21	2	SAND, fine/ medium with coal & wood debris	1420	0.00-PPM
24					
30			CINDERS & Sands		
36			Wood Material (Pilings?)		
42			SAND, very fine - orange/olive green		
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B40.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B41

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3428.22	1	SAND, fine/ medium dark brown	1459	0.00-PPM
12		2	SAND, medium/fine - orange/brown with trace green		
18	3428.23			1459	0.00-PPM
24					
30			SAND, medium/fine - orange/olive green with trace green		
36			CINDERS		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B41.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B42

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.02	1	SAND, medium/fine - gray/brown with small coal fragments	0913	0.00-PPM
12					
18	3432.03	2		0913	0.00-PPM
24			SAND, medium/fine - dark brown with large coal fragments		
30			CINDERS		
36			CLAY with organic material		
42					

10-07-1999 X:\MTECH5\M12\M12-B42.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B43

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SAND, fine - with very small brick fragments dark brown		
	3432.04	1	SAND, fine - orange/olive green with cinder fragments	0942	0.00-PPM
12			Coal and Cinder Fragments		
18	3432.05	2	SAND, fine - orange/olive green	0942	0.00-PPM
24			SAND, fine - dark brown/olive green with iron staining		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B43.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B44

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6					
	3432.06	1		1013	0.04-PPM
			SANDY SILT, fine - olive green/orange		
12					
		2			
18	3432.07			1013	0.02-PPM
24			SANDY SILT, fine/ medium - orange/olive green		
			SAND, CINDERS fine - black		
30					
36			SAND, fine - dark olive green		
42					
48					
54					

10-27-1999 X:\MTECH5\M12\M12-B44.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B45

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6	3432.08	1		1125	0.00-PPM
12			CINDERS with mixed sands		
18	3432.09	2		1125	0.08-PPM
			SAND, medium/fine - orange/yellow		
24					
30			SAND, medium/fine - tan/orange		
36			SAND, medium/coarse - tan		
42					
48					
54					

10-27-1999 X:\MTECH5\M12\M12-B45.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B46

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.10	1	SAND, CINDERS	1147	0.02-PPM
12			SAND, medium/fine - tan		
18	3432.11	2		1147	0.00-PPM
24					
30			SAND, medium/coarse - tan		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B46.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B47

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.12	1	SAND, fine - dark brown with mixed cinders	1205	0.02-PPM
12			CINDERS with mixed sands black		
18	3432.13	2	SAND, fine - orange/tan	1205	0.00-PPM
24			SAND, fine - olive green		
			Wood material		
30			CLAYEY SAND, tan/olive green		
36			WOOD		
42					

10-27-1999 X:\MTECH5\M12\M12-B47.BOR

000089

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B48

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.14	1	SAND, fine/ medium - dark brown	1306	0.00-PPM
12			SAND, fine - orange/yellow		
18	3432.15	2	SAND, fine - dark gray with coal fragments	1306	0.00-PPM
24			SAND, fine - gray with orange mottling		
30			SAND, fine - gray/tan/orange		
36					

10-07-1999 X:\MTECH5\M12\M12-B48.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B49

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6					
	3432.16	1	SAND, fine/ medium - tan/brown/orange with brick frag.	1330	0.00-PPM
12					
18	3432.17	2		1330	0.04-PPM
24					
			SAND, fine - orange with cinder and coal material		
30			SAND, fine/ medium - orange/brown with brick & cinder fragments <1%		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B49.BOR

000091

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B50

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine/ medium - tan/ dark brown		
6	3432.18	1		1420	0.00-PPM
12			CINDERS with mixed sands		
18	3432.19	2	CLAYEY SAND, fine - loam light gray/green	1420	0.00-PPM
24			CLAYEY SAND, fine - olive green/orange		
			SAND, fine - light gray/orange		
30			SANDY SILT, light gray/olive green		
			SILTY SAND, fine - dark brown with some mottling iron stain medium sand		
36			SAND, coarse - with small gravel and tar paper material		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B50.BOR

000092

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B51

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA			
0			Turf					
			SAND, fine - with some gravel					
6	3432.20	1		1446	0.00-PPM			
12								
18	3432.21	2		1446	0.00-PPM			
			SAND, fine - with some <1% coal fragments					
24								
30								
36								
42								

10-07-1999 X:\MTECH5\M12\M12-B51.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B52

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.02	1	SILTY SAND, fine - olive green / tan / orange	1055	0.00-PPM
12					
18	4748.03	2		1055	0.00-PPM
24			SAND, med. / fine - tan w/ some Chip, coal & Cement bits		
30			SAND, med. / fine - tan		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B52.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B53

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-26-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.04	1	SILTY SAND, fine - brown	1130	0.00-PPM
12		2	SILTY SAND, fine - olive green / brown		
18	4748.05		SAND, fine - orange / some silt	1130	62.0 PPM
24			CINDERS		
30			SAND, fine / med. - gray / black- lt. olive green		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B53.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B54

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SILT -fine sand/brown		
6	4748.06	1		1155	0.00-PPM
12					
			fine sand/ cinder material		
18					
			SILT -brown / gray / some fine / med. SAND,		
24	4748.07	2		1155	400 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B54.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B55

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.08	1	SILTY CLAY and fine sand-brown	1305	100 PPM
12					
18					
24	4748.09	2	SANDY CLAY and fine sand dk. olive green (Possible Native Soils)	1305	25 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B55.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B56

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.10	1	SILTY CLAY and fine sand-brown	1330	0.0 PPM
12					
18			SANDY CLAY and fine sand dk. olive green		
24	4748.11	2	(Possible Native Soils)	1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B56.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B57

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.12	1	SILT - fine sand,olive green / tan / orange	1350	0.0 PPM
12					
18					
24	4748.13	2	SAND, med. / fine - tan with small chips, COAL and cement bits	1350	0.0 PPM
30			SAND, med. / fine - tan		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B57.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B58

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.14	1	SILT - fine sand,olive green / tan / orange	1415	0.0 PPM
12					
18					
24	4748.15	2	SAND, med. / fine - tan with small chips, COAL and cement bits	1415	0.0 PPM
30			SAND, med. / fine - tan (Asphalt Pieces @ 6")		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B58.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B59

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.16	1	SILT fine sand. -olive green / brown	1430	0.0 PPM
12			Mixed SAND, coarse / fine with COAL,CINDERS and small sub-round gravel-orange / olive green / dk. gray		
18					
24	4748.17	2	SILT/ fine sand-lt. olive green / yellow	1430	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B59.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B60

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.18	1	Mixed SAND and gravels	1500	0.0 PPM
12					
18					
18			CINDERS and COAL		
24	4748.19	2		1500	0.0 PPM
24			SILTY CLAY, cinders/ coal material olive green / black (wet)		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B60.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B61

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.20	1	SAND, fine / med. - orange	1510	0.0 PPM
12					
18					
24	4748.21	2		1510	0.0 PPM
30			SAND, fine - orange / lt. olive green		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B61.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B63

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.02	1	SAND, fine with some silt - brown	1000	0.0 PPM
12			SAND, fine with some silt - gray / brown		
18					
24	4754.03	2		1000	40.0 PPM
30			woody materials		
36			crushed gravels		
42					

10-22-1999 X:\MTECH5\M12\M12-B63.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B64

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.04	1	SILT/ fine - sand - olive green/ tan / orange	1017	0.0 PPM
12					
18					
24	4754.05	2	SILT med. / fine - tan w/ small chips, coal, and cement bits	1017	0.0 PPM
30			SAND, med. / fine - tan (Possible Native Material)		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B64.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B65

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.06	1	SILT/ clay loam w/ fine sand olive green / orange / yellow	1030	0.0 PPM
12					
18					
24	4754.07	2		1030	20.0 PPM
30			SAND, fine / med. - orange (Possible Native Material)		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B65.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B66

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.08	1	SILT fine sand - w/ some Clay loam - olive green / yellow/ orange	1050	9.0 PPM
12					
18					
24	4754.09	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B66.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B67

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.10	1	SAND, coarse / fine - lt. olive green / tan / brown w/ some CINDER material @ 8-10"	1105	0.0 PPM
12					
18					
24	4754.11	2		1105	0.0 PPM
30			CINDERS		
36			Clay and SAND, fine / med. - lt. olive green gray / dk. gray		
42					

10-27-1999 X:\MTECH5\M12\M12-B67.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B68

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.12	1	SAND, fine - w/ some SILT and small sub. angular & round small quartz grains-olive green / orange	1118	0.0 PPM
12					
18					
24	4754.13	2	CINDERS ,COAL and fine - SAND, black	1118	20.0 PPM
30			CLAYEY SILT, dk. gray w/ some coal and cinder material		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B68.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B69

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.14	1	SAND, med. / fine - orange	1145	0.0 PPM
12					
18					
24	4754.15	2		1145	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B69.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B70

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4754.16	1	SILT, fine - SAND, brown	1335	0.0 PPM
6					
			SILT, fine - SAND, olive green / orange / tan		
12					
18					
24	4754.17	2		1335	0.0 PPM
30					
			SILT, fine - SAND, brown (Possible Native Soil)		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B70.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B71

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.18	1	SILT, fine - SAND, olive green / orange	1349	0.0 PPM
12					
18					
			SILT, fine - SAND, brown (Possible Native Soil)		
24					
30	4754.19	2		1349	0.0 PPM
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B71.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B72

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.20	1	SILT, fine - SAND, olive green / orange	1410	0.0 PPM
12					
18					
24	4754.21	2		1410	0.0 PPM
30			SILT, fine - SAND, brown		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B72.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B73

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4754.22	1	Turf	1430	0.0 PPM
6			SILT, fine - tan / yellow w/ some cinder material		
12					
18			SAND, fine / med. - gray		
			SAND, med. / fine - tan/ olive green/ brown		
24	4754.23	2		1430	0.0 PPM
30			Clay lt. green/ gray w/ gray / black SILT		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B73.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B74

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.02	1	SAND, fine w/ some SILT - olive green / brown	0910	0.0 PPM
12					
18			CINDERS		
24	4760.03	2		9010	0.0 PPM
			CLAYEY SILT, fine / SAND,olive green		
30			woody material		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B74.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B75

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.04	1	SILT, fine SAND,olive green / orange	0930	0.0 PPM
12					
18					
24	4760.05	2		0930	0.0 PPM
			CINDERS		
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B75.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B76

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.06	1	SAND, fine w/ some SILT, olive green and brown	1019	0.0 PPM
12			Clay , SILT and fine SAND, dk. gray and black w/ some leaf material @ 28"		
24	4760.07	2		1019	0.0 PPM
30			SAND, med. / fine - gray		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B76.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B77

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.08	1	SAND, fine / med. - w/ some SILT/ brown (Possible Native Soil)	1040	0.0 PPM
12					
18					
24	4760.09	2		1040	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B77.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B78

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.10	1	SILT- fine SAND,olive green / orange	1055	10.0 PPM
12					
18			SAND, fine / med. - olive green / orange		
24	4760.11	2		1055	0.0 PPM
			SAND, and organic material (leaves)		
30			SAND, med. / coarse - lt. gray w/ small round sub ang. granules		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B78.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B79

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine / med. - orange / olive green		
6	4760.12	1		1115	0.0 PPM
			CINDERS		
12			CLAYEY SILT, and fine SAND, olive green / orange		
18			SAND, fine / med. - gray w/ some wood and rag material		
24	4760.13	2		1115	20.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B79.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B80

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.14	1	SAND, SILT fine - olive green / orange	1130	0.0 PPM
12					
18			CINDERS		
24	4760.15	2		1130	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B80.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B81

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.16	1	SAND, fine - brown	1149	0.0 PPM
12					
18			SILT -fine - SAND, olive green		
24	4760.17	2		1149	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B81.BOR

000122

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B82

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.18	1	SAND, fine / med. - brown	1305	0.0 PPM
12					
18			SILT , Clay and fine sand- black		
24	4760.19	2	Clay , olive green / dk. olive green w/ some organic material	1305	40.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B82.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B83

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.20	1	SILT , fine SAND, olive green / brown	1340	0.0 PPM
12					
18			Clay - SILT(olive green)w/ cinders -		
24	4760.21	2		1340	0.0 PPM
30			CLAYEY SAND, med. / fine - dk. olive green		
36			CLAYEY SILT, fine SAND, - olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B83.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B84

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.22	1	SILT , fine SAND, olive green / brown	1405	0.0 PPM
12					
18			Clay - SILT(olive green)w/ cinders -		
24	4760.23	2		1405	0.0 PPM
30			CLAYEY SAND, med. / fine - dk. olive green		
36			CLAYEY SILT, fine SAND, - olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B84.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B85

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.24	1	SILT, fine sand - brown	1423	0.0 PPM
12					
18			Clay , SILT , fine sand(olive green) and cinders -		
24	4760.25	2		1423	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B85.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B86

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.26	1	CLAYEY SILT, and fine sand/ olive green	1430	0.0 PPM
12					
18					
24	4760.27	2	cinders -	1430	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B86.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B87

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.28	1	SAND, fine -dk. olive green	1458	0.0 PPM
12					
18					
24	4760.29	2		1458	40.0 PPM
30			cinders		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B87.BOR

000128

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B88

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.30	1	SILT, fine SAND, -brown	1514	0.0 PPM
			SAND, fine / med. - olive green		
12					
18					
24	4760.31	2		1514	0.0 PPM
			CINDERS		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B88.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B89

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SILT, fine SAND, -brown		
6	4762.02	1		0950	0.0 PPM
12			SILT, fine SAND, w/ some Clay / olive green		
			CINDERS		
18					
24	4762.03	2		0950	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B89.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B90

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.04	1	SAND, fine / med. - tan / orange w/ some small round granules	1020	20.0 PPM
12					
18					
24	4762.05	2		1020	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B90.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B91

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.06	1	SILT, fine SAND, - brown CINDERS	1033	0.0 PPM
12					
18			SAND, fine - olive green / orange		
24	4762.07	2		1033	0.0 PPM
30			SAND, fine / very fine - lt. gray/ dk. gray		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B91.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B92

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.08	1	SILT, fine SAND, - olive green / orange / tan	1055	400 PPM
12					
18					
24	4762.09	2	CINDERS	1055	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B92.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B93

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, SILT, fine - olive green / orange / tan		
	4762.10	1		1110	20.0 PPM
6					
12					
18					
			SILT - Clay / fine SAND, olive green / orange		
24	4762.11	2		1110	20.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B93.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B94

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.12	1	SILT, fine SAND - olive green / orange	1125	0.0 PPM
12					
18					
24	4762.13	2	CINDERS	1125	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B94.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B95

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.14	1	SAND, fine / med. - w/ some SILT / brown / lt. brown	1145	0.0 PPM
12					
18			SILT, Clay, fine SAND - olive green		
24	4762.15	2		1145	0.0 PPM
30			CINDERS		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B95.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B96

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.16	1	SILTY CLAY, fine / med. - SAND, brown / tan	1305	0.0 PPM
12					
18			SANDY CLAY, SILT / black / gray (orange Clay)		
24	4762.17	2		1305	100-PPM
30					
36					
42					

10-27-1999 X:\WTECH5\M12\M12-B96.BOR

000137

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B97

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.18	1	SAND, SILT -fine / orange / brown	1340	0.0 PPM
12					
18					
24	4762.19	2	SAND, med. / fine - orange	1340	0.0 PPM
30			SILT and SAND, med. / fine - brown		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B97.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B98

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.20	1	SAND, fine / very fine - w/ some SILT / tan / brown / lt. olive green	1400	0.0 PPM
18			SAND, med. / fine - w/ some SILT/ dk. olive green		
24	4762.21	2		1400	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B98.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B99

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.22	1	SILT- fine SAND, tan	1420	0.0 PPM
12					
18			CINDERS		
24	4762.23	2	SILT, Clay - black	1420	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B99.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B100

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SILT- fine SAND,brown		
	4762.24	1	CINDERS	1435	0.0 PPM
12			CLAYEY SILT, fine SAND, - olive green		
18					
24	4762.25	2		1435	0.0 PPM
			CINDERS		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B100.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B101

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.26	1	SILT- fine SAND,olive green / orange	1445	0.0 PPM
12					
18					
24	4762.27	2		1445	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B101.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B102

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.28	1	SILT- fine SAND, brown	1455	0.0 PPM
12			SILT- fine SAND; - olive green		
18					
24	4762.29	2		1455	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B102.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B103

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.02	1	SILT- fine SAND, brown/ olive green	0940	0.0 PPM
12			CINDERS		
18					
24	4774.03	2	Organic silt-dk. brown	0940	1.0 PPM
30			SAND, fine / med. - olive green / brown		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B103.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B104

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.04	1	SAND, coarse / fine - orange / brown w/ some small round granules	0955	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4774.05	2	SAND, fine / med. - brown / dk. brown	0955	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B104.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B105

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4774.06	1	SAND, fine / med. - brown w/ some small round granules	1015	0.0 PPM
12			cinders and SAND,		
18			SILT, fine SAND, - dk. olive green		
24	4774.07	2	SAND, fine / med. - lt. olive green	1015	0.0 PPM
30			SAND, fine / med. - dk. brown		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B105.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B106

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4774.08	1	SILT, fine SAND - brown	1035	0.0 PPM
18			CINDERS		
24	4774.09	2	SILTY CLAY, fine SAND- black / brown	1035	0.0 PPM
36					
42					

10-27-1989 X:\MTECH5\M12\M12-B106.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B107

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.10	1	SILT, fine SAND, - olive green	1050	0.0 PPM
12					
18					
24	4774.11	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B107.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B108

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.12	1	SANDY SILT, fine - brown / tan	1110	0.0 PPM
12			SILT, fine SAND, - olive green		
18					
24	4774.13	2		1110	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B108.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B109

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.14	1	SANDY SILT, fine - brown / tan	1130	0.0 PPM
12			SILT, fine SAND, - olive green		
18					
24	4774.15	2		1130	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B109.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B110

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			asphalt and gravel		
6					
12	4774.16	1	SANDY SILT, fine - brown w/ some asphalt and gravel bits	1315	0.0 PPM
18					
24	4774.17	2		1315	0.0 PPM
30			SILT ,fine SAND, - tan / lt. olive green		
36			SAND, med. / fine - dk. olive green / brown		
42					

10-22-1999 X:\MTECH5\M12\M12-B110.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B111

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			gravel		
			SANDY SILT, med. / fine - brown / olive green		
6	4774.18	1		1330	0.0 PPM
12					
18					
			CINDERS , asphalt		
24	4774.19	2		1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B111.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B112

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SANDY SILT, brown		
	4774.20	1	Clay and SILT / black	1400	0.0 PPM
12					
18					
			Clay and SILT w/ some SAND, gray / black		
24	4774.21	2		1400	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B112.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B113

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA			
0			Turf					
6			SANDY SILT, fine - brown					
	4774.22	1	SILT , fine SAND, - olive green	1420	0.0 PPM			
12								
18								
24	4774.23	2		1420	0.0 PPM			
30								
36								
42								

10-22-1999 X:\MTECH5\M12\M12-B113.BOR

000154

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B114

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4777.02	1	SILT ,fine SAND, - olive green / tan	0905	0.0 PPM
12					
18			SILTY CLAY, fine SAND, - olive green		
24	4777.03	2		0905	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B114.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B115

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SAND, gravel, asphalt material		
6	4777.04	1	SANDY SILT, med. / fine - w/ some small round granules	0920	0.0 PPM
12					
18					
24	4777.05	2		0920	40.0 PPM
30					
			Mixed SAND, and CINDERS		
36			SAND, med. / fine - lt. olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B115.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B116

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.06	1	Mixed SAND, and QP gravels w/ small angular and round granules - brown / tan	0935	0.0 PPM
18			SILT, fine SAND, - olive green		
24	4777.07	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	0935	0.0 PPM
42					

10-27-1999 X:\MTECH5\M12\M12-B116.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B117

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Mixed SAND,		
6	4777.08	1		0950	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4777.09	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	0950	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B117.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B118

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Mixed SAND		
6	4777.10	1		1010	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4777.11	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	1010	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B118.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B119

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.12	1	SILT, fine SAND, - olive green w/ some small round granules and asphalt debris	1115	0.0 PPM
6					
12					
18					
24	4777.13	2		1115	15.0 PPM
30			SANDY SILT, fine - dk. brown / olive green w/ some asphalt debris		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B119.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B120

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.14	1	SANDY SILT, tan / brown w/ asphalt and granular debris	1145	0.0 PPM
6					
12					
18			asphalt and Mixed sands - black / brown		
24	4777.15	2		1145	0.0 PPM
30			SAND, coarse / fine - w/ some SILT and cement Debris-olive green / tan		
36					
			SILT w/ some Clay / dk. gray w/ Wood material @ 46"		
42					

10-27-1999 X:\MTECH5\M12\M12-B120.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B121

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.16	1	SANDY SILT,fine - brown w/ small round granules and asphalt material	1330	0.0 PPM
6					
12			SILT , fine SAND, - olive green / orange		
18					
24	4777.17	2		1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B121.BOR

000162

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B122

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.18	1	SANDY SILT,fine - brown w/ small round granules and asphalt material	1350	0.0 PPM
6					
12					
			SILT , fine SAND, - olive green / orange		
18					
24	4777.19	2		1350	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B122.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B123

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.20	1	SAND, med. / coarse - w/ some asphalt and small round granules/ brown	1410	0.0 PPM
12			SILT , fine SAND, - olive green		
24	4777.21	2	CINDERS and coal material	1410	0.0 PPM
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B123.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B124

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.22	1	SAND, med. / coarse - w/ some asphalt and small round granules/ brown	1425	0.0 PPM
6					
12			SILT , fine SAND, - olive green		
18					
24	4777.23	2	CINDERS and coal material	1425	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B124.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B125

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.24	1	SILT, Clay, fine sand - olive green	1435	0.0 PPM
6					
12					
18					
24	4777.25	2		1435	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B125.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B126

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, Clay, fine sand - olive green		
	4777.26	1		1448	0.0 PPM
6					
12					
18					
24	4777.27	2		1448	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B126.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B127

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.02	1	SANDY SILT, fine / med. - dk. gray	0930	0.0 PPM
12			SILT, fine SAND, - olive green		
18			SILT, fine SAND, - olive green w/ coal debris		
24	4790.03	2		0930	0.0 PPM
30			brick		
			cinders / brick material		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B127.BOR

000168

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B128

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.04	1	SILT, fine SAND, - olive green w/ some asphalt debris	0950	0.0 PPM
6					
12					
18			CINDERS		
24	4790.05	2	CLAYEY SILT, fine SAND, - black / dk. olive green	0950	0.0 PPM
30					
36			CINDERS		
42					

10-22-1999 X:\MTECH5\M12\M12-B128.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B129

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.06	1	SILT, fine SAND, - olive green	1015	0.0 PPM
6					
12					
18			SANDY SILT, fine - olive green / orange		
24	4790.07	2		1015	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B129.BOR

000170

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B130

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.08	1	SILT, fine SAND, - olive green	1030	0.0 PPM
6					
12					
18			SANDY SILT, fine - olive green / orange		
24	4790.09	2		1030	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B130.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B131

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.10	1	SILTY CLAY, fine SAND, - dk. brown	1050	0.0 PPM
6					
12			asphalt		
18			SILTY SAND, fine / med. - w/ some Clay and small round granules, brown / orange / tan(also coal fragments)		
24	4790.11	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B131.BOR

000172

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B132

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, fine sand - olive green w/ some coal debris		
	4790.12	1		1115	0.0 PPM
6					
12					
18					
24	4790.13	2		1115	0.0 PPM
30			cinders		
36					
42					

10-27-1999 X:\MITECH5\M12\M12-B132.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B133

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.14	1	SILT, fine sand - brown / lt. olive green / orange	1135	0.0 PPM
6					
12					
18					
24	4790.15	2		1135	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B133.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B134

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.16	1	SILT, fine sand - brown / lt. olive green / orange	1148	0.0 PPM
6					
12					
18					
24	4790.17	2		1148	0.0 PPM
30					
36					
42					

10-27-1999 X:\MITECH5\M12\M12-B134.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B135

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.18	1	SILT, fine sand - brown / lt. olive green / orange	1300	0.0 PPM
24	4790.19	2		1300	0.0 PPM

0
6
12
18
24
30
36
42

10-27-1999 X:\WTECH5\M12\M12-B135.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B136

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-15-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.20	1	SAND, fine w/ some SILT / olive green	1325	0.0 PPM
6					
12			CINDERS		
18					
24	4790.21	2		1325	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B136.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B137

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.22	1	SILT ,fine SAND, - olive green	1350	0.0 PPM
6					
12					
18			SANDY SILT, dk. olive green		
24	4790.23	2		1350	0.0 PPM
30			SILT, fine SAND, - olive green / brown		
36			SANDY SILT, fine - olive green / orange (Very Little Asphalt @ 4" & Very Little Coal Debris @ 22-26")		
42					

10-27-1999 X:\MTECH5\M12\M12-B137.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B138

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.24	1	SILT , fine SAND, - olive green	1410	0.0 PPM
6					
12					
18					
24	4790.25	2		1410	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B138.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B139

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.26	1	SILT , fine SAND, - olive green/ orange / brown w/ some glass	1425	0.0 PPM
6					
12					
18					
24	4790.27	2		1425	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B139.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B140

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.02	1	SILT , fine SAND, - olive green	0900	0.0 PPM
6					
12					
18					
24	4793.03	2	CINDERS	0900	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B140.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B141

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.04	1	SILT , fine SAND, - olive green	0920	0.0 PPM
6					
12					
18					
24	4793.05	2	SAND, fine / med. - olive green w/ some SILT	0920	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B141.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B142

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT , SAND, fine / med. - olive green		
	4793.06	1		0935	0.0 PPM
6					
12					
18					
24	4793.07	2		0935	0.0 PPM
30					
36			CINDERS		
42					

10-27-1999 X:\MTECH5\M12\M12-B142.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B143

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.08	1	SILT, fine SAND, - olive green / orange (Hand Augered To 2')	0948	0.0 PPM
6					
12					
18					
24	4793.09	2		0948	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B143.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B144

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4793.10	1	SILT, fine SAND, - olive green / tan	1000	0.0 PPM
6					
12			CINDERS		
18					
24	4793.11	2		1000	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B144.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B145

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.12	1	SILT, fine SAND, - olive green /orange / brown	1012	0.0 PPM
6					
12					
18					
24	4793.13	2		1012	0.0 PPM
30					
36					
42					

10-27-1999 X:\WTECH5\M12\M12-B145.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B146

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.14	1	SILT, fine SAND, - olive green / brown (Hand Augered)	1025	0.0 PPM
6					
12					
18					
24	4793.15	2		1025	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B146.BOR

000187

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B147

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, fine SAND, - olive green / brown		
			(Hand Augered)		
	4793.16	1		1040	0.0 PPM
6					
12					
18					
24	4793.17	2		1040	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B147.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B148

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4793.18	1	SILT, fine SAND, - olive green / brown (Hand Augered)	1055	0.0 PPM
6					
12					
18					
24	4793.19	2		1055	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B148.BOR

000189

APPENDIX F

Compliance Average Area Names

Appendix F
Compliance Average Area Names
M-12 Landfill
Fort Monmouth, New Jersey

Compliance Area Name:	AREA SVOC-1	Boring ID
		B63
		B64
		B70
		B71
		B75
		B76
		B77
		B82
		B83
		B88
		B89
		B90
		B96
		B97
		B98
		B99
		B103
		B104
		B105
		B106
		B107
		B109
		B110
		B111
		B112
		B113
		B114
		B115
		B116
		B117
		B118
		B119
		B120
		B121
		B122
		B123
		B124
		B125
		B126
		B127
		B128
		B129
		B131
Compliance Area Name:	**AREA SVOC-2**	**Boring ID**
		B31
		B32
		B33
		B34

B41
B42
B43

Compliance Area Name: **AREA SVOC-3** **Boring ID**

B08
B09
B10
B21
B22
B23
B24
B25

Compliance Area Name: **AREA METALS-1** **Boring ID**

B52
B53
B54
B57
B58
B59
B64
B65
B66
B70
B71
B72
B73
B75
B76
B77
B78
B79
B81
B82
B83
B84
B85
B86
B87
B88
B89
B90
B91
B92
B93
B94
B95
B96
B97
B98
B99
B100
B101
B102
B103

B104
B105
B106
B107
B108
B109
B110
B111
B112
B113
B114
B115
B116
B117
B118
B119
B120
B121
B122
B123
B124
B125
B126
B127
B128
B129
B130
B132
B133
B134
B135
B137
B138
B139
B141
B142
B143
B145
B146
B147
B148

Compliance Area Name: **AREA METALS-2** **Boring ID**

B01
B02
B03
B04
B05
B07
B08
B09
B15
B16
B17
B18

B19
B20
B21
B22

FINAL

Classification Exception Area Information For Various Sites

M-12 Landfill Site, M-18 Landfill Site, Site 80/166, Site 108, Site 283, Site 812, Site 1122 and Site 2567

U. S. Army Installation Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works



July 12, 2004

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, Pennsylvania 19044

United States Army
Fort Monmouth, New Jersey

Classification Exception Area Information For Various Sites

M-12 Landfill Site, M-18 Landfill Site, Site 80/166, Site 108,
Site 283, Site 812, Site 1122 and Site 2567

Fort Monmouth, New Jersey

July 12, 2004

PREPARED BY:



201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314

July 12, 2004

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
1.1 Objective 1-1
1.2 CEA Locations 1-1
1.3 Document Organization 1-1
2.0 FORT MONMOUTH BACKGROUND INFORMATION 2-1
2.1 Site Location and Description 2-1
2.2 Environmental Setting 2-1
2.2.1 Regional Geology 2-1
2.2.2 Hydrogeology 2-2
2.2.3 Aquifer Classification 2-3
3.0 CEA INFORMATION FOR THE M-12 LANDFILL SITE 3-1
3.1 Site Background 3-1
3.2 Remedial Investigation Report Results 3-2
3.3 Contaminants of Concern 3-2
3.4 Groundwater Modeling Results 3-3
3.5 CEA Fact Sheet 3-3
4.0 CEA INFORMATION FOR THE M-18 LANDFILL SITE 4-1
4.1 Site Background 4-1
4.2 Remedial Investigation Report Results 4-2
4.3 Contaminants of Concern 4-2
4.4 Groundwater Modeling Results 4-3
4.5 CEA Fact Sheet 4-4
5.0 CEA INFORMATION FOR SITE 80/166 5-1
5.1 Site Background 5-1
5.2 Remedial Investigation Report Results 5-2
5.3 Contaminants of Concern 5-2
5.4 Groundwater Modeling Results 5-3
5.5 CEA Fact Sheet 5-3
6.0 CEA INFORMATION FOR SITE 108 6-1
6.1 Site Background 6-1
6.2 Remedial Investigation Report Results 6-2
6.3 Contaminants of Concern 6-2
6.4 Groundwater Modeling Results 6-2
6.5 CEA Fact Sheet 6-3
7.0 CEA INFORMATION FOR SITE 283 7-1
7.1 Site Background 7-1
7.2 Remedial Investigation Report Results 7-2
7.3 Contaminants of Concern 7-2
7.4 Groundwater Modeling Results 7-3
7.5 CEA Fact Sheet 7-4

8.0 CEA INFORMATION FOR SITE 812 8-1
8.1 Site Background 8-1
8.2 Remedial Investigation Report Results 8-2
8.3 Contaminants of Concern 8-2
8.4 Groundwater Modeling Results 8-3
8.5 CEA Fact Sheet 8-4
9.0 CEA INFORMATION FOR SITE 1122 9-1
9.1 Site Background 9-1
9.2 Remedial Investigation Report Results 9-1
9.3 Contaminants of Concern 9-2
9.4 Groundwater Modeling Results 9-2
9.5 CEA Fact Sheet 9-4
10.0 CEA INFORMATION FOR SITE 2567 10-1
10.1 Site Background 10-1
10.2 Remedial Investigation Report Results 10-2
10.3 Contaminants of Concern 10-2
10.4 Groundwater Modeling Results 10-3
10.5 CEA Fact Sheet 10-4
11.0 REFERENCES 11-1

FIGURES

Figure 1-1 CEA Locations at Fort Monmouth
Figure 2-1 Site Location Map: Fort Monmouth
Figure 2-2 Geologic Map of New Jersey
Figure 2-3 New Jersey Classification System – Class IIIa
Figure 2-4 Geologic Cross Section
Figure 2-5 Outcrop and Thickness of Composite Confining Unit
Figure 3-1 Site Location Map: M-12 Landfill site
Figure 3-2 Site Map: M-12 Landfill site
Figure 3-3a Predicted Arsenic Concentration M12-MW16
Figure 3-3b Predicted Arsenic Concentration M12-MW22
Figure 3-3c Arsenic Concentration Versus Time
Figure 3-4a Predicted Lead Concentration M12-MW21
Figure 3-4b Predicted Lead Concentration Versus Time
Figure 4-1 Site Location Map: M-18 Landfill site
Figure 4-2 Site Map: M-18 Landfill site
Figure 4-3a Predicted Benzene Concentration 0296-MW04
Figure 4-3b Predicted Benzene Concentration 0296-MW06
Figure 4-4 Predicted Area Impacted by Benzene
Figure 4-5a Predicted Arsenic Concentration
Figure 4-5b Arsenic Concentration Versus Time
Figure 4-6a Predicted Cadmium Concentration
Figure 4-6b Cadmium Concentration Versus Time
Figure 4-7a Predicted Chromium Concentration
Figure 4-7b Chromium Concentration Versus Time
Figure 4-8a Predicted Lead Concentration

Figure 4-8b Lead Concentration Versus Time
Figure 5-1 Site Location Map: Site 80/166
Figure 5-2 Site Map: Site 80/166
Figure 5-3a Predicted g-Chlordane Concentration at 20 Years
Figure 5-3b g-Chlordane Concentration Versus Time
Figure 5-4a Predicted Arsenic Concentration at 20 Years
Figure 5-4b Arsenic Concentration Versus Time
Figure 5-5a Predicted Lead Concentration at 20 Years
Figure 5-5b Lead Concentration Versus Time
Figure 6-1 Site Location Map: Site 108
Figure 6-2 Site Map: Site 108
Figure 6-3a Predicted Arsenic Concentration at 10 Years
Figure 6-3b Arsenic Concentration Versus Time
Figure 7-1 Site Location Map: Site 283
Figure 7-2 Site Map: Site 283
Figure 7-3a Predicted Benzene Concentration at 19 years, Map View
Figure 7-3b Benzene Concentration Versus Time at Well 283-MW2
Figure 7-3c Benzene Concentration Versus Time at Well 283-MW3
Figure 7-3d Predicted Bezene Concentration at 19 years, Cross Section View
Figure 7-4a Predicted Lead Concentration at 20 years
Figure 7-4b Lead Concentration Versus Time at Well 283-MW2
Figure 8-1 Site Location Map: Site 812
Figure 8-2 Site Map: Site 812
Figure 8-3 Predicted 1,1,1-trichloroethane Plume
Figure 8-4 Predicted Benzene Plume
Figure 8-5 Predicted Vinyl Chloride Plume
Figure 9-1 Site Location Map: Site 1122
Figure 9-2 Site Map: Site 1122
Figure 9-3a MTBE Observation & Degradation Rate at Well 1122-MW5
Figure 9-3b Predicted MTBE Concentrations at Well 1122-MW5
Figure 9-4 Potential Migration of COCs in Groundwater
Figure 9-5a Tetrachloroethene Observation & Degradation Rate at Well 1122-MW1
Figure 9-5b Predicted Tetrachloroethene Concentrations at Well 1122-MW1
Figure 10-1 Site Location Map: Site 2567
Figure 10-2 Site Map: Site 2567
Figure 10-3 Predicted TBA Concentration at Well 2567-MW1
Figure 10-4 Predicted TBA Migration

APPENDICES

Appendix A CEA Fact Sheet: M-12 Landfill site
Appendix B CEA Fact Sheet: M-18 Landfill site
Appendix C CEA Fact Sheet: Site 80/166
Appendix D CEA Fact Sheet: Site 108
Appendix E CEA Fact Sheet: Site 283
Appendix F Groundwater Modeling Information and BIOCHLOR spreadsheets for Site 812
Appendix G CEA Fact Sheet: Site 812
Appendix H CEA Fact Sheet: Site 1122
Appendix I CEA Fact Sheet: Site 2567

1.0 INTRODUCTION

VERSAR, Inc. (VERSAR) was contracted by the United States (U.S.) Army Garrison, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey to assemble and present Classification Exception Area (CEA) information to document CEA status of the following eight sites located at Fort Monmouth: M-12 Landfill site, M-18 Landfill site, Site 80/166, Site 108, Site 283, Site 812, Site 1122 and Site 2567.

1.1 Objective

The objective of this document is to provide CEA information for the eight sites within Fort Monmouth that present contaminants of concern (COCs) exceeding their respective New Jersey Department of Environmental Protection (NJDEP) Groundwater Quality Criteria (GWQC). This CEA Information document was prepared in accordance with NJDEP Groundwater Quality Standards (GWQS) (January 1993), NJAC 7:9-6.6, et seq. and NJDEP *Final Guidance on Designation of Classification Exceptions Areas* (November 1998).

1.2 CEA Locations

Figure 1-1 contains each CEA area at Fort Monmouth that will be discussed in **Section 3.0** through **Section 10.0**.

1.3 Document Organization

Section 2.0 provides background information on Fort Monmouth and the surrounding region. **Section 3.0** presents site-specific CEA information for the M-12 Landfill site. **Section 4.0** presents site-specific CEA information for the M-18 Landfill site. **Section 5.0** presents site-specific CEA information for Site 80/166. **Section 6.0** presents site-specific CEA information for Site 108. **Section 7.0** presents site-specific CEA information for Site 283. **Section 8.0** presents site-specific CEA information for Site 812. **Section 9.0** presents site-specific CEA information for Site 1122. **Section 10.0** presents site-specific CEA information for Site 2567. References used in this document are identified in **Section 11.0**.

2.0 FORT MONMOUTH BACKGROUND INFORMATION

The following sections describe the site background and environmental setting of the area surrounding Fort Monmouth. Included is a description of the site location and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Creek, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WWI) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

2.2 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Fort Monmouth.

2.2.1 Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The geologic map of New Jersey is provided as **Figure 2-2**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10-60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown and Navesink Formations). The individual thickness for these units varies greatly (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line (e.g., a boundary zone between older, resistant rocks and younger,

softer plain sediments) to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60-80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard, 1969). Groundwater occurs beneath the site at a depth of approximately 2-12 feet below ground surface (bgs).

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown, fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is brown silt in Monmouth County (Jablonski, 1968).

2.2.2 Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer underlying Fort Monmouth is identified as part of the "Navesink-Hornerstown Confining Units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1989).

Wells installed in the Red Bank and Tinton Sands produce 2-25 gallons per minute (gpm) (Jablonski, 1968). Groundwater at Fort Monmouth is typically encountered at shallow depths ranging from 2-9 feet bgs. Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

Based on a review of the NJDEP GWQS (NJAC 7:9-6), January 7, 1993, Versar has determined that Fort Monmouth is underlain by a Class III-A aquifer. A formal presentation of this finding was made to the NJDEP on November 21, 2003. The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable use. Further discussion of the Class III-A aquifer classification is presented in **Section 2.2.3**.

Shallow groundwater may be locally influenced within Fort Monmouth by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- Topography
- Nature of the fill material within Fort Monmouth
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (e.g., streams, lakes)
- Roadways, utility conduits and stormwater culverts

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis.

2.2.3 Aquifer Classification

On review of the NJDEP GWQS (N.J.A.C. 7:9-6, January 1993), the site is underlain by a Class III-A aquifer (**Figure 2-3**). The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable uses. For an area to be classified as a Class III-A aquifer, the ground water must meet the following characteristics:

- Class III-A ground water includes portions of the saturated zones (that meet the criteria below) of the Woodbury Formation, Merchantville Formation, Marshalltown Formation, Navesink Formation, Hornerstown Formation, aquitard formations of the Potomac-Raritan-Magothy aquifer system and the Kirkwood aquifer system, portions of the glacial moraine and glacial lake deposits, and other geologic units having the characteristics of an aquitard. Class III-A areas have the following characteristics (N.J.A.C. 7:9-6.5):

    - The average thickness of a Class III-A area must be at least 50 feet;
    - Typical hydraulic conductivity of a Class II-A aquifer is approximately 0.1 ft/day or less; and
    - The aerial extent defined as Class III-A must be at least 100 acres.

The shallow aquifer at Fort Monmouth meets each of the four criteria listed above. These criteria are discussed below:

- As presented in **Figure 2-4**, Fort Monmouth is located within the outcrop area of the "Navesink-Hornerstown Confining Unit." The Navesink and Hornerstown Formations are part of the Composite Confining Unit (Martin, 1998), which also includes the Red

Bank Sand, Tinton Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation. **Figure 2-5** illustrates the thickness of the Hornerstown-Navesink Confining Unit, which, in the vicinity of Fort Monmouth, is approximately 125 feet.

- Published hydraulic conductivities (Martin, 1998) for the Navesink-Hornerstown Confining Unit, yielding a geometric mean of 0.12 feet per day.
- The land area of Fort Monmouth is greater than 100 acres.

3.0 CEA INFORMATION FOR THE M-12 LANDFILL SITE

The following includes all relevant CEA information for the M-12 Landfill site, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

3.1 Site Background

The M-12 Landfill site was a former historic fill site located on the central portion of the Main Post (**Figure 3-1**) south of Husky Brook and west of Murphy Drive. The M-12 Landfill site consists of two areas, a northwest area and a southwest area. The approximate size of the northeast area is 60,100 ft^2 (1.4 acres). The approximate size of the southwest area is 29,200 ft^2 (0.7 acre). The Roy F. Weston (Weston) Site Investigation (SI) report (1995) showed that the M-12 Landfill site was suspected to contain domestic and industrial wastes and was used for the disposal of old automobile wastes. The period of operation of the M-12 Landfill site is unknown.

Both SI and Remedial Investigation (RI) activities were performed by Weston and the Fort Monmouth DPW, respectively, at the M-12 Landfill site. The results of these investigations are detailed in the following reports:

- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- VERSAR's *Remedial Investigation Report and Sediment Quality Evaluation, M-12/M-14 Landfill Site, Fort Monmouth, New Jersey*, October 2003.
- VERSAR's *Remedial Investigation Report for Near-Surface Soils, M-12 Landfill Site, Fort Monmouth, New Jersey*, October 2003.
- VERSAR's *Remedial Investigation Report, M-12 Landfill Site*, September 2003.

Weston conducted geophysical surveys, including a Ground Penetrating Radar (GPR) survey and magnetometer surveys, to locate the historic fill boundaries. The results of the geophysical surveys identified fill and buried ferrous material within the suspected boundaries of the historic fill site. Monitoring wells were installed at strategic locations to monitor groundwater downgradient of these areas. Groundwater sampling results indicated that no analytes exceeded the NJDEP GWQC in samples collected from the monitoring wells. The Weston SI Report (1995) also presented a DPW proposal for the M-12 Landfill site that was subsequently implemented by the DPW. A long-term groundwater and surface water monitoring program was developed utilizing the existing monitoring wells and supplemental wells installed during follow-up investigations.

The DPW also conducted a sediment quality evaluation at the M-12/M-14 Landfill site to determine potential PCB-related impacts to stream sediments in Husky Brook, which flows through the M-12/M-14 Landfill site. The DPW obtained samples from multiple borings in Husky Brook in April 2000. Based on the results of this sediment quality evaluation, no PCBs

were detected above the NJDEP guidance criteria for sediment quality in any sample, and no potential exists for long-term adverse benthic effects in Husky Brook associated with the M-12/M-14 Landfill site.

The DPW conducted a near-surface soil investigation at the M-12 Landfill site to characterize the shallow soils that cover the historic fill areas. The DPW obtained samples from the top two feet of soil at various locations throughout the site between March 1998 and September 1999. Low concentrations of various analytes were detected, but no COCs were identified at concentrations that require remedial actions to be performed.

3.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, including the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater and surface water in the vicinity of the M-12 Landfill site. Remedial investigation activities were performed from October 1996 and continued through February 2001.

Eleven monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 3-2**). Section 3.3 summarizes results from the quarterly groundwater and surface water sampling program conducted from June 1997 through February 2001 at the M-12 Landfill site. Two specific monitoring wells at the M-12 Landfill site indicated elevated concentrations of arsenic and lead. As a result of these findings, the DPW will incorporate a document equivalent to a Declaration of Environmental Restriction (DER) in the Fort Monmouth Installation Master Plan for the arsenic and lead groundwater contamination at the M-12 Landfill site.

3.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, arsenic and lead are identified as potential COC at the M-12 Landfill site. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report, M-12 Landfill Site*, September 2003. See **Table 3-1** below for a COC summary:

Table 3-1
Determination of COCs
M-12 Landfill site

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
Arsenic	8	52.9	18
Lead	10	82.9	9

3.4 Groundwater Modeling Results

A conceptual site model for the M-12 Landfill site was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report, M-12 Landfill Site*, September 2003.

Arsenic

After the groundwater flow was calibrated, the transport simulation for arsenic was run for 10,000 simulated days (~27.4 years). The model was run for this lengthy period to allow for prediction of the time required for the arsenic concentration in site groundwater to decrease below the NJDEP criteria. **Figure 3-3a** and **Figure 3-3b** show the predicted arsenic distributions in site groundwater plotted as brown contour lines for wells M12-MW16 and M12-MW22, respectively, at the simulated time of 99 and 150 years, respectively. The arsenic concentrations presented in **Figure 3-3a** and **Figure 3-3b** represent the first time steps in the model in which the arsenic concentration is entirely below 8.0 ug/L. The concentrations of arsenic at wells M12-MW16 and M12-MW22 are plotted against simulation time in **Figure 3-3c**, which confirms the 99 and 150-year predictions. The groundwater modeling results indicate that arsenic migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

Lead

The transport simulation for lead was run for 100,000 days (274 years). The model was run for this lengthy period to allow for prediction of the time required for the lead concentration in site groundwater to decrease below the NJDEP criteria. **Figure 3-4a** shows the predicted lead distribution in site groundwater at 274 years plotted as brown contour lines. Because the lead concentration contours did not fall below the NJDEP criterion of 10 ug/L, projections for the lead concentration at these two wells were made using the observed concentration trends from the model. The slope of the line shown in **Figure 3-4b** was 1.2×10^{-5} ug/L per day, which led to an estimated time to achieve compliance with the NJDEP criterion of 4,500 years. Similar to arsenic, the results of the groundwater modeling indicate that lead migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

3.5 CEA Fact Sheet

The CEA Fact Sheet for the M-12 Landfill site can be found in **Appendix A**.

4.0 CEA INFORMATION FOR THE M-18 LANDFILL SITE

The following includes all relevant CEA information for the M-18 Landfill site, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

4.1 Site Background

Due to the close proximity of a landfill area to several former UST sites, the remedial investigation presented in this report includes areas originally intended as separate site investigations at former UST sites. The M-18 Landfill site consists of a historic fill site and Buildings 290 and 296, which had UST closures performed at each facility. The M-18 Landfill site is located in the northern portion of the Main Post (**Figure 4-1**), between Parkers Creek to the north and Sherrill Avenue to the south. The approximate area of the M-18 Landfill site is 177,300 ft^2 (4.1 acres).

The Weston SI report (1995) showed that the landfill area at the M-18 Landfill site was used after 1919 as an Army Signal School Training Area. Diesel and gasoline generators, situated approximately 150 meters from Parkers Creek, were used to support field exercises. It was suspected that numerous fuel spills that occurred in the area of the generator had impacted the site. A riot control agent was also used in this area for troop protective mask training. During Weston's site inspection in 1993 (Weston, 1995), there was a suspected debris disposal area used for building rubble in the area north of Building 289.

Both SI and RI activities were performed by Weston and the Fort Monmouth DPW, respectively, at the M-18 Landfill site. The results of these investigations are detailed in the following reports:

- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- VERSAR's *Remedial Investigation Report and Sediment Quality Evaluation, M-18 Landfill Site, Fort Monmouth, New Jersey*, February 2004.
- VERSAR's *Remedial Investigation Report for Near-Surface Soils, M-18 Landfill Site, Fort Monmouth, New Jersey*, March 2004.
- VERSAR's *Remedial Investigation Report, M-18 Landfill Site*, October 2003.

Weston conducted soil sampling, monitoring well installation, groundwater sampling and geophysical surveying. The geophysical surveys, including GPR and electromagnetic (EM) surveys, were conducted to investigate the extent of debris disposal north of Building 289. Two groundwater monitoring wells were installed by Weston in January 1995 to monitor groundwater downgradient (north) of the M-18 Landfill site. In addition to these two monitoring wells, the Weston site investigation included two rounds of groundwater samples collected from a third monitoring well which had been installed during site investigation activities related to former UST closures at Building 296. The DPW developed a long-term groundwater and surface water monitoring program utilizing the existing monitoring wells and supplemental wells installed during follow-up investigations.

The DPW also conducted a sediment quality evaluation at the M-18 Landfill site to determine potential PCB-related impacts to stream sediments in Parkers Creek, which flows adjacent to the M-18 Landfill site. The DPW obtained samples from multiple borings in Parkers Creek in April 2000. Based on the results of this sediment quality evaluation, no potential exists for long-term adverse benthic effects in Parkers Creek associated with the M-18 Landfill site.

The DPW conducted a near-surface soil investigation at the M-18 Landfill site to characterize the shallow soils that cover the historic fill areas. The DPW obtained samples from the top two feet of soil at various locations throughout the site between March 1998 and September 1999. Low concentrations of various analytes were detected, but no COCs were identified at concentrations that require remedial actions to be performed.

4.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, including the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater and surface water in the vicinity of the M-18 Landfill site. Remedial investigation activities were performed from October 1996 and continued through February 2001.

Eleven monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 4-2**). Section 4.3 summarizes results from the quarterly groundwater and surface water sampling program was conducted from June 1997 through February 2001 at the M-18 Landfill site. Elevated concentrations of benzene, arsenic, cadmium, chromium and lead were detected at the M-18 Landfill site. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the benzene, arsenic, cadmium, chromium and lead groundwater contamination at the M-18 Landfill site.

4.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, benzene, arsenic, cadmium, chromium and lead are identified as potential COCs at the M-18 Landfill site. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report, M-18 Landfill Site*, October 2003. See **Table 4-1** below for a COC summary:

Table 4-1
Determination of COCs
M-18 Landfill site

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
Benzene	1	29.18	8
Arsenic	8	221	48
Cadmium	4	630.7	19
Chromium	100	1344	11
Lead	10	836	34

4.4 Groundwater Modeling Results

A conceptual site model for the M-18 Landfill site was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report, M-18 Landfill Site*, October 2003.

Benzene

A *Microsoft Excel* spreadsheet was used to predict the biodegradation and migration of benzene at the M-18 Landfill site. The biodegradation model incorporates the effects of horizontal groundwater flow, first-order biodegradation and retardation.

Benzene was detected at the M-18 Landfill site above the NJDEP GWQC of 1.0 ug/L in two of the 11 groundwater monitoring wells sampled. Due to the lack of a decreasing trend in the benzene detections, a site-specific decay rate for benzene was not calculated. The first-order, aerobic decay constant of 0.00095 (1/day) was obtained from published results (Howard, 1991) and used in the model. This published decay constant corresponds to a half-life of 730 days. Predicted benzene concentrations at wells 0296-MW04 and 0296-MW06 are presented in **Figures 4-3a** and **4-3b**, respectively.

At monitoring well 0296-MW04, the initial benzene concentration used in the model was 3.19 ug/L, which was sampled on February 22, 2001. This initial concentration led to a predicted time of 3.5 years for compliance with the NJDEP criteria (1.0 ug/L). The migration distance to achieve compliance at well 0296-MW04 is predicted to be 89 feet. At well 0296-MW06, the initial benzene concentration used in the model was 6.5 ug/L, which was sampled on November

13, 2000, led to a time of 5.4 years for NJDEP compliance, with a predicted migration distance of 139 ft. **Figure 4-4** displays the area at the M-18 Landfill site that is estimated to be impacted by future benzene migration.

Metals

The migration of the COCs that are metals (arsenic, cadmium, chromium and lead) in groundwater at the M-18 Landfill site was simulated in MODFLOW. The model was run for a simulated time of 137 years (50,000 days) for each metal to model the effects of time on contaminant movement and direction. The model results are presented in **Figures 4-5a and 4-5b** (arsenic), **Figures 4-6a and 4-6b** (cadmium), **Figures 4-7a and 4-7b** (chromium), and **Figures 4-8a and 4-8b** (lead).

For each of the metal COCs at the M-18 Landfill site, the predicted concentrations at 137 years exceeded the respective NJDEP groundwater criteria (**Figures 4-5a** and **b** through **4-8a** and **b**), and the estimated times for compliance with the NJDEP criteria is greater than 1,000 years. The results of the groundwater modeling indicate that COC migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

4.5 CEA Fact Sheet

The CEA Fact Sheet for the M-18 Landfill site can be found in **Appendix B**.

5.0 CEA INFORMATION FOR SITE 80/166

The following includes all relevant CEA information for Site 80/166, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

5.1 Site Background

Site 80/166 is located in the eastern part of the Main Post Area of Fort Monmouth, north of Riverside Avenue and south of Building 166 (**Figure 5-1**). Site 80/166 is located approximately 500 feet northwest of Oceanport Creek.

Underground Storage Tank (UST) removal, SI and RI activities were performed by ATC, Weston and the Fort Monmouth DPW at Site 80/166. The results of these investigations are detailed in the following reports:

- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- ATC's *UST Closure and Site Investigation Report for Former Building T-80, NJDEP Registration No. 090010-06,* July 1998.
- ATC's *UST Closure and Site Investigation Report, Building 166, UST No. 90017-17*, May 2000.
- VERSAR's *Remedial Investigation Report, Site 80/166*, February 2004 (Draft).

As part of Weston's SI of the Fort Monmouth military installation, soil sampling, monitoring well installation and sampling and geophysical surveying were conducted. In addition to sampling soil and groundwater at sites throughout the Main Post and Charles Wood areas of Fort Monmouth, Weston established background concentrations for soil and groundwater for the Fort Monmouth installation.

ATC's UST Closure Report stated that there was one single-wall steel UST located immediately north of former Building T-80. Following the removal of this UST, a spill was reported to the NJDEP Hotline. UST No. 090010-06 was cleaned, excavated and disposed of in accordance with NJDEP requirements. Approximately 56 cubic yards of potentially contaminated soil was removed and disposed offsite. In response to the observation of potentially contaminated soil near the shallow water table, one shallow monitoring well was installed at the former Building T-80 area. Monitoring well 80-MW1 was sampled, and the results indicated the presence of benzene at concentrations exceeding its NJDEP GWQC.

ATC's UST Closure Report stated that there was one UST located under the pavement approximately 20 feet west of the southwest corner of Building 80/166. When the DPW closed this UST, stained soils were observed in the UST excavation, and a spill was reported to the NJDEP Hotline. Approximately 24 cubic yards of potentially contaminated soil was excavated and disposed offsite during the UST closure. In response to the observation of potentially contaminated soil near the shallow water table, one shallow monitoring well was installed

southwest of Building 166. Monitoring well 166-MW1 was sampled, and the results showed no exceedences of the NJDEP GWQC.

5.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, including soil sampling, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included monitoring well installation, the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 80/166. Remedial investigation activities were performed from April 1997 and continued through August 2001.

Six monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 5-2**). Section 5.3 summarizes results from the quarterly groundwater sampling program was conducted from April 1997 through January 2001 at Site 80/166. Elevated concentrations of a-chlordane, g-chlordane, arsenic and lead were detected at Site 80/166. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the a-chlordane, g-chlordane, arsenic and lead groundwater contamination at Site 80/166.

5.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, a-chlordane, g-chlordane, arsenic and lead are identified as potential COCs at Site 80/166. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report, Site 80/166*, February 2004 (Draft). See **Table 5-1** below for a COC summary:

Table 5-1
Determination of COCs
Site 80/166

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
a-Chlordane	0.5	1.625	3
g-Chlordane	0.5	2.719	2
Arsenic	8	71.6	19
Lead	10	84.1	15

5.4 Groundwater Modeling Results

A conceptual site model for Site 80/166 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report, Site 80/166*, February 2004 (Draft).

Pesticides

For a-chlordane and g-chlordane, a degradation spreadsheet model was used to predict the decay and contaminant transport. The degradation model was applied to g-chlordane only, because g-chlordane concentrations in Site 80/166 groundwater samples have been higher than concentrations of a-chlordane, and these two pesticides are addressed as one compound in Howard (1991).

For g-chlordane, the estimated time of compliance at Site 80/166 is approximately 20 years, which is the same as predicted using a biodegradation spreadsheet. This result indicates that the additional components of 3-dimensional flow and dispersion did not change the estimated time of compliance. This lack of change is due to the strong retardation of chlordane in soil.

The result for g-chlordane was derived from groundwater concentrations at a single location (80-MW2). Although additional soil and groundwater samples were collected via geoprobe at Site 80/166, a pesticide analysis was not performed. The MODFLOW results are presented in **Figures 5-3a** and **5-3b**.

Metals

For each of the metal COCs at Site 80/166 (arsenic and lead), the predicted concentrations at 20 years exceeded their respective NJDEP GWQC. The MODFLOW results for arsenic and lead are shown in **Figure 5-4a** and **5-4b** (arsenic), and **Figure 5-5a** and **5-5b** (lead). The estimated times for compliance with the NJDEP criteria is 600 years for arsenic and greater than 1,000 years for lead. The results of the groundwater modeling indicate that COC migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

5.5 CEA Fact Sheet

The CEA Fact Sheet for Site 80/166 can be found in **Appendix C**.

6.0 CEA INFORMATION FOR SITE 108

The following includes all relevant CEA information for Site 108, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

6.1 Site Background

Site 108 is located in the eastern part of the Main Post Area of Fort Monmouth, east of Riverside Avenue in the vicinity of buildings 63, 484 and 488 (**Figure 6-1**). Site 108 is located approximately 400 feet northwest of Oceanport Creek and approximately 180 feet west of the New Jersey Transit Railroad.

UST removal, SI and RI activities were performed by Weston, Smith Technologies Corporation (Smith) and the Fort Monmouth DPW at Site 108. The results of these investigations are detailed in the following reports:

- Weston's *UST Closure and Site Investigation Report for Building 108, NJDEPE Facility No. 090010, TMS No. 60, 61, 62, 63 and 64, Fort Monmouth, New Jersey*, May 1994.
- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- Smith's *UST Closure and Site Investigation Report for Former Building 108, UST No. 090010-7*, February 1996.
- VERSAR's *Remedial Investigation Report, Site 108*, February 2004 (Draft).

Weston's UST Closure Report stated that there were five USTs located north of building 488, which is north of former Building 108. The five USTs were drained, removed and disposed offsite. Approximately 221 cubic yards of potentially contaminated soil was removed and disposed offsite. Soil and groundwater samples were collected to document the closure of UST Nos. 60 through 64. Soil sampling results indicated the presence of Total Petroleum Hydrocarbons (TPHC), benzene and methylene chloride. In response to the observation of potentially contaminated soil, sheen on groundwater, and free product during the UST removals, three shallow monitoring wells were installed at Site 108. Monitoring wells 108-MW1, 108-MW2 and 108-MW3 were sampled, and the results indicated the presence of benzene, methylene chloride, bis(2-ethylhexyl)phthalate and lead. A fourth shallow monitoring well, 108-MW4, was installed at Site 108.

As part of Weston's SI of the Fort Monmouth military installation, soil sampling, monitoring well installation and sampling and geophysical surveying were conducted. In addition to sampling soil and groundwater at sites throughout the Main Post and Charles Wood areas of Fort Monmouth, Weston established background concentrations for soil and groundwater for the Fort Monmouth installation.

Smith's UST Closure Report stated that there was one UST located immediately adjacent to former Building 108. UST No. 7 was drained, removed and disposed offsite. Based on visual inspection of the UST, field screening of subsurface soils and analytical results of collected soil

samples, the DPW concluded that no significant historical discharges were associated with UST No. 7 or associated piping.

6.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 108. Remedial investigation activities were performed from April 1997 and continued through August 2001.

Four monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 6-2**). Section 6.3 summarizes results from the quarterly groundwater sampling program was conducted from April 1997 through February 2001 at Site 108. Elevated concentrations of arsenic were detected at Site 108. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the arsenic groundwater contamination at Site 108.

6.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, arsenic is identified as a potential COC at Site 108. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report, Site 108*, February 2004 (Draft). See **Table 6-1** below for a COC summary:

Table 6-1
Determination of COCs
Site 108

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
Arsenic	**8**	**63.2**	**40**

6.4 Groundwater Modeling Results

A conceptual site model for Site 108 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was

chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report, Site 108*, February 2004 (Draft).

For arsenic, the predicted concentrations at 10 years exceeded its NJDEP GWQC. The MODFLOW results are presented in **Figures 6-3a** and **6-3b**. The estimated times for compliance with the NJDEP GWQC for arsenic concentration at well 108-MW1 is greater than 1,000 years. The results of the groundwater modeling indicate that COC migration will be minimal due to low hydraulic conductivity and strong retardation by the soils.

6.5 CEA Fact Sheet

The CEA Fact Sheet for Site 108 can be found in **Appendix D**.

7.0 CEA INFORMATION FOR SITE 283

The following includes all relevant CEA information for Site 283, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

7.1 Site Background

Site 283 is located in the north part of the Main Post Area of Fort Monmouth, on the north side of Sherrill Avenue (**Figure 7-1**). Site 283 is located approximately 200 feet south of Parkers Creek.

UST removal, SI and RI activities were performed by SMC Environmental Services Group (SMC), VERSAR, Weston and the Fort Monmouth DPW at Site 283. The results of these investigations are detailed in the following reports:

- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- SMC's *UST Closure and Site Investigation Report, Building 283B, Main Post-West Area, NJDEP Registration No. 0081533-59*, September 1998.
- VERSAR's *UST Closure and Site Investigation Report, Building 283C, NJDEP Registration No. 0081533-229*, October 2000.
- VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 283*, April 2004.

As part of Weston's SI of the Fort Monmouth military installation, soil sampling, monitoring well installation and sampling and geophysical surveying were conducted. In addition to sampling soil and groundwater at sites throughout the Main Post and Charles Wood areas of Fort Monmouth, Weston established background concentrations for soil and groundwater for the Fort Monmouth installation.

SMC's UST Closure Report stated that there was one tar-coated steel UST located north of former Building 283. UST number 0081533-59 was cleaned, excavated and disposed of in accordance with NJDEP requirements. Based on visual inspection of the UST, field screening of subsurface soils and seven post-excavation soil sampling results, the soil that was excavated during the UST excavation was backfilled into the excavation.

VERSAR's UST Closure Report stated that there was one UST located in the courtyard area of Building 283. UST No. 0081533-229 was cleaned, excavated and disposed of in accordance with NJDEP closure requirements. Based on visual inspection of the UST, field screening of subsurface soils and groundwater, and analytical results of collected soil and groundwater samples, a spill was reported to the NJDEP. Approximately 398 cubic yards of potentially contaminated soil was removed and disposed off-site. Soil sampling showed that benzene was detected at concentrations exceeding the NJDEP soil cleanup criteria. In response to the post-excavation soil sampling results and visual observations of potentially contaminated soil in the

excavation area, one shallow overburden monitoring well was installed at the excavation area. Two additional monitoring wells were installed in the vicinity of Building 283.
Multiple rounds of groundwater monitoring well sampling showed that benzene, ethylbenzene, total xylenes, aluminum, iron and lead were detected in groundwater samples at concentrations exceeding their respective NJDEP GWQC.

7.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, and groundwater sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 283. Remedial investigation activities were performed from September 1999 and continued through February 2004.

Three monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 7-2**). Section 7.3 summarizes results from the quarterly groundwater sampling program was conducted from September 1999 through February 2004 at Site 283. Elevated concentrations of benzene, ethylbenzene, total xylenes and lead were detected at Site 283. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the benzene, ethylbenzene, total xylenes and lead groundwater contamination at Site 283.

7.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, benzene, ethylbenzene, total xylenes and lead are identified as potential COCs at Site 283. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 283*, May 2004. See **Table 7-1** below for a COC summary:

Table 7-1
Determination of COCs
Site 283

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
Benzene	**1**	**1009.73**	**11**
Ethylbenzene	**700**	**1160.45**	**6**
Total Xylenes	**1000**	**5960.7**	**7**
Lead	**10**	**33.1**	**10**

7.4 Groundwater Modeling Results

A conceptual site model for Site 283 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 283*, April 2004.

The COCs in groundwater at Site 283 can be separated into two groups: organic and inorganic. The three organic COCs consist of benzene, ethylbenzene and total xylenes. The one inorganic COC is lead. The COCs that are organic may have the potential to degrade through biological means, whereas lead is not biodegradable. Because the two other organic COCs (ethylbenzene and total xylenes) are less mobile than benzene, have lower concentrations relative to their respective GWQC, and have faster degradation rates, the model predictions for organic compounds (discussed below) are limited to benzene.

Benzene

As shown in **Figure 7-3a**, the MODFLOW simulation predicts that the benzene concentration in groundwater at Site 283 will be reduced to concentrations below 1.0 ug/L in 19 years. The predicted time of 19 years for compliance with the GWQC is slightly less than the 20 years predicted using a biodegradation spreadsheet. In well 283-MW2, the MODFLOW simulation predicts that benzene concentrations will diminish to less than the NJDEP criteria of 1.0 ug/L in approximately 18 years (**Figure 7-3b**). In well 283-MW3, the MODFLOW simulation predicts that benzene concentrations will diminish to less than the NJDEP criteria of 1.0 ug/L in approximately 9 years (**Figure 7-3c**). In the MODFLOW simulation, benzene migration was slowed due to sorption of benzene to subsurface soil and biodegradation. A cross-section view of the benzene concentrations in groundwater near well 283-MW2 is shown in **Figure 7-3d**. This cross-section view shows that benzene has not migrated downward below Layer 3 and into Layer 4 (Layers 2 and 3 represent of the Composite Confining Unit and Layer 4 represents the Wenonah-Mount Laurel aquifer).

Although the MODFLOW simulation predicts that benzene migration will be minimal, it is possible that benzene migration may occur northward and into Parkers Creek. This possibility is demonstrated by the results of the spreadsheet model and by the presence of underground utility lines. Several underground utility lines are present at elevations below the groundwater table at Site 283. Shallow groundwater might flow along these underground utility lines due to the higher conductivity associated with subsurface fill surrounding these pipes. However, results from the first quarter 2004 groundwater monitoring event indicate downgradient wells 283-MW1

and 283-MW3 contained minor benzene concentrations of non-detect and 3.21 ug/L, respectively, and the application of Oxygen Release Compound (ORC) is proposed in VERSAR's RIR/RAWP.

Lead

Based on the predicted change in concentration of lead in groundwater at Site 283 over 20 years (**Figure 7-4a**), the estimated times for compliance with the NJDEP criteria is approximately 210 years (**Figure 7-4b**). The results of the groundwater modeling indicate that lead migration will be minimal due to low hydraulic conductivity and strong retardation by the soils at Site 283.

7.5 CEA Fact Sheet

The CEA Fact Sheet for Site 283 can be found in **Appendix E**.

8.0 CEA INFORMATION FOR SITE 812

The following includes all relevant CEA information for Site 812, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

8.1 Site Background

Site 812 is located in the south-central portion of the Main Post near the Main Street entrance to Fort Monmouth (**Figure 8-1**). Site 812 is bordered by Murphy Drive to the east and south and to the northwest by an access road, Building 1000 (the Post Exchange or PX), and Building 1001 (the Four Seasons Store). "Building" 812, the Army Community Service Center and associated parking areas, currently occupies the area defined as Site 812, which encompasses approximately 2.75 acres. Specific historical information is not available regarding previous operations and conditions at Site 812. Reportedly, Site 812 is the former location of a gasoline station with underground fuel storage.

UST removal, SI and RI activities were performed by SMC, VERSAR and the Fort Monmouth DPW at Site 812. The results of these investigations are detailed in the following reports:

- SMC's *Underground Storage Tank Closure and Site Investigation Report – Building 812,* 1998.
- VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 812*, June 2001.

SMC's UST Closure Report stated that a fiberglass UST located on the east side of Building 812 was closed by removal in accordance with NJDEP UST closure procedures. The post-excavation soil sampling results did not identify contaminated soils. No further action was proposed regarding the UST closure.

VERSAR conducted an aerial photograph historical and site record review because specific historical information was not available regarding previous operations and conditions at Site 812. This photographs and records review identified a number of former structures and areas of potential concern, which established a basis for SI and RI efforts. The photograph and records review identified several former structures and areas of potential concern including several areas of disturbed soil, a coal storage yard, railroad tracks of the Central New Jersey Railroad, and suggestions of a former gasoline station. An SI was initiated at Site 812 with the installation of soil borings to evaluate the locations of previous site structures/areas of disturbance identified during the historical aerial photograph and records review. Soil and groundwater grab samples were collected from the boring locations. An expanded SI was then conducted at a specific boring location, and additional soil and aqueous samples were collected. The SI and expanded SI failed to identify a distinct source area for soils or define potential COCs. However, the SI and expanded SI did identify one boring location as a potential source area for groundwater contamination by volatile organic compounds (VOCs) requiring further evaluation.

8.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, groundwater sampling and analyses and soil sampling and analyses, to support and expand the results and findings of their SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 812. Remedial investigation activities were performed from December 1999 and continued through June 2001.

Fourteen monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 8-2**). Section 8.3 summarizes results from the quarterly groundwater sampling program consisted of two rounds conducted in May and June 2000 at Site 812. Elevated concentrations of benzene, cis-1,2-dichloroethene, 1,1-dichloroethene, tetrachloroethene , trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane and vinyl chloride were detected at Site 812. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the benzene, cis-1,2-dichloroethene, 1,1-dichloroethene, tetrachloroethene , trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane and vinyl chloride groundwater contamination at Site 812.

8.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, benzene, cis-1,2-dichloroethene, 1,1-dichloroethene, tetrachloroethene, trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane and vinyl chloride are identified as potential COCs at Site 812. Discussion leading to this conclusion can be found in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 812*, June 2001. See **Table 8-1** below for a COC summary:

Table 8-1
Determination of COCs
Site 812

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
Benzene	1	9.99	2
Cis-1,2-dichloroethene	70	10436.18	2
1,1-dichloroethene	2	8.11	2
Tetrachloroethene	1	2.64	2
Trans-1,2-dichloroethene	100	615.87	2
Trichloroethene	1	5.25	2
1,1,1-trichloroethane	30	43.71	2
Vinyl Chloride	5	147.57	2

8.4 Groundwater Modeling Results

A conceptual site model for Site 812 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division's BIOCHLOR program was chosen for the groundwater simulation. The software, programmed in the Microsoft Excel spreadsheet environment and based on the Domenico analytical solute transport model, has the ability to simulate 1-D advection, 3-D dispersion, linear adsorption and biotransformation via reductive dechlorination. Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 812*, June 2001. The model was used in conjunction with groundwater flow information to estimate the duration and areal extent of the CEA. An explanation of the groundwater modeling performed at Site 812 and the BIOCHLOR spreadsheets can be found in **Appendix F**.

1,1,1-trichloroethane

As shown in **Figure 8-3** and **Appendix F**, the results of the BIOCHLOR modeling program predict that 1,1,1-trichloroethane concentrations in the vicinity of monitoring wells 812-MW05 and 812-MW07 will be in compliance with its NJDEP GWQC by the end of the year 2000. Although this prediction has proved to be incorrect, 1,1,1-trichloroethane concentrations have subsequently degraded to comply with its NJDEP GWQC. Results of the long-term monitoring program implemented at Site 812 that support compliance with the respective NJDEP GWQC for 1,1,1-trichloroethane are presented in VERSAR's *Remedial Action Progress Report, Site 812*, pending.

Benzene

As shown in **Figure 8-4** and **Appendix F**, the results of the BIOCHLOR modeling program predict that benzene concentrations in the vicinity of monitoring well 812-MW04 will be in compliance with its NJDEP GWQC by the end of the year 2001. Although this prediction has been proven to be incorrect, benzene concentrations have subsequently degraded to comply with its NJDEP GWQC. Results of the long-term monitoring program implemented at Site 812 that support compliance with the respective NJDEP GWQC for benzene are presented in VERSAR's *Remedial Action Progress Report, Site 812*, pending.

Tetrachloroethene and Daughter Products

As shown in **Figure 8-5** and **Appendix F**, the results of the BIOCHLOR modeling program predict that tetrachloroethene and daughter product concentrations in the vicinity of monitoring well 812-MW04 will be in compliance with its NJDEP GWQC by the end of the year 2015.

8.5 CEA Fact Sheet

The CEA Fact Sheet for Site 812 can be found in **Appendix G**.

9.0 CEA INFORMATION FOR SITE 1122

The following includes all relevant CEA information for Site 1122, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

9.1 Site Background

Site 1122 is approximately 1.5 acres and is located in the southwestern part of the Main Post Area of Fort Monmouth, north of Alexander Avenue and just south of Mill Creek (**Figure 9-1**).

UST removal, SI and RI activities were performed by Weston, Smith and the Fort Monmouth DPW at Site 1122. The results of these investigations are detailed in the following reports:

- Weston's *UST Closure and Site Investigation Report, Building 1122, NJDEPE Registration No. 81533-199*, October 1993.
- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- Smith's *UST Closure and Site Investigation Report, Building 1122, UST No. 081533-171*, February, 1996.
- VERSAR's *Remedial Investigation Report, Site 1122*, March 2004 (Draft).

Westons's UST Closure Report and SI stated that there was one single-wall steel UST located under the pavement immediately north of Building 1122. UST No. 081533-199 was cleaned, excavated and disposed of in accordance with NJDEP requirements. Following receipt of post-excavation soil sampling results, which were all below the NJDEP soil cleanup criteria, the UST excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill.

As part of Weston's SI of the Fort Monmouth military installation, soil sampling, monitoring well installation and sampling and geophysical surveying were conducted. In addition to sampling soil and groundwater at sites throughout the Main Post and Charles Wood areas of Fort Monmouth, Weston established background concentrations for soil and groundwater for the Fort Monmouth installation.

Smith's UST Closure Report and SI stated that there was one UST located under the pavement immediately west of Building 1122. UST No. 081533-171 was cleaned, excavated and disposed of in accordance with NJDEP requirements. Following receipt of post-excavation soil sampling results, which were all below the NJDEP soil cleanup criteria, the UST excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill.

9.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, groundwater sampling and analyses, surface water sampling and analyses and soil sampling and analyses, to support and expand the results

and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 1122. Remedial investigation activities were performed from November 1996 and continued through August 2001.

Five monitoring wells comprise the quarterly groundwater monitoring program currently conducted by the DPW (**Figure 9-2**). Section 9.3 summarizes results from the quarterly groundwater sampling program was conducted from May 1997 through January 2001 at Site 1122. Elevated concentrations of methyl tert-butyl ether (MTBE) and tetrachloroethene were detected at Site 1122. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the MTBE and tetrachloroethene groundwater contamination at Site 1122.

9.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences, and the wide-ranging results, MTBE and tetrachloroethene are identified as potential COCs at Site 1122. Discussion leading to this conclusion are presented in VERSAR's *Remedial Investigation Report, Site 1122*, March 2004 (Draft). See **Table 9-1** below for a COC summary:

Table 9-1
Determination of COCs
Site 1122

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
MTBE	70	1077.47	4
Tetrachloroethene	1	8.99	13

9.4 Groundwater Modeling Results

A conceptual site model for Site 1122 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations.

Conceptual site model information and model input parameters can be found in VERSAR's *Remedial Investigation Report, Site 1122*, March 2004 (Draft).

MTBE

At monitoring well 1122-MW5, groundwater concentrations were obtained in four rounds of sampling beginning on August 10, 2000. As shown in **Figure 9-3a**, these observed concentrations lead to a half-life of 117 days. The published half-life for MTBE of 365 days (Howard, 1991) was used to make a more conservative prediction for MTBE concentrations at well 1122-MW5.

The initial MTBE concentration used in the model is 493.93 ug/L, which is the average of the two most recent detections (on October 13, 2000 and January 3, 2001). This initial concentration, assumed to be on November 23, 2000, led to a predicted time of 3.0 years for compliance with the NJDEP criteria (70 ug/L). The migration distance to achieve compliance at well 1122-MW5 is predicted to be 910 feet based on the hydraulic gradient of 0.125 feet per foot. Due to the presence of Mill Creek within approximately 70 feet down-gradient of well 1122-MW5, the biodegradation model predicts that MTBE will migrate from well 1122-MW5 into Mill Creek within 83 days. This prediction is shown graphically on **Figure 9-3b**.

The model led to the prediction that MTBE may migrate 910 feet from well 1122-MW5 before MTBE concentrations fall below the NJDEP criteria of 70 ug/L. These results need to be qualified by the fact that Mill Creek is located adjacent to Site 1122. As shown in **Figure 9-4**, MTBE is predicted to migrate into Mill Creek.

Based on the model prediction that MTBE concentrations in groundwater will be reduced to concentrations below the NJDEP criterion of 70 ug/L within approximately 3.0 years, it is possible that MTBE could migrate from Site 1122 into Mill Creek. If the 25-foot wide sewerage easement contains structures that divert groundwater flow, MTBE could migrate along these buried structures. Results from the first quarter 2004 groundwater monitoring event indicate wells 1122-MW2 and 1122-MW5 contained minor MTBE concentrations of 11.84 and 6.10 ug/L, respectively. In April 2004, groundwater samples were collected via Geoprobe® at locations downgradient of these wells and along the City of Eatontown sewer pipe to assess possible MTBE migration. While minimal MTBE results were indicated, the discovery of petroleum product in temporary points GW3, GW7, and GW10) installed along a 15-foot section of the sewer main, required further investigation and characterization of environmental conditions at Site 1122.

A review of historical records identified a 1,500-gallon, steel, heating oil UST was removed from the northwest corner of building 1122 in 1993. Soil closure sample results indicated a release and over-excavation was performed as required. Records indicate that all areas of petroleum impacted soils above NJDEP criteria were removed. A closure report was submitted and the case was closed.

In late April 2004, a Geoprobe® survey including twenty four boring locations (GW1 through GW24) was performed around the former UST area. Soil and groundwater samples were

collected and analyzed for TPHC and VOCs plus 15 tentatively identified compounds (TICs). No concentrations above the NJDEP soil cleanup criteria for TPHC or VOCs were encountered. Groundwater results indicate low concentrations of TPHC in most of the Geoprobe® points. Concentrations of benzene above NJDEP criteria were identified at four Geoprobe® points ranging from 2-32 ug/L. The petroleum product appears to be limited to a small section of the sewer line trench located downgradient of the former UST pit. Three 2" diameter PVC sumps were installed to periodically remove product along this section of the Eatontown sewer line to provide initial abatement. Future remedial options are being assessed.

Tetrachloroethene

At monitoring well 1122-MW1, concentrations of PCE were detected in 16 rounds of sampling beginning on May 2, 1997. As shown in **Figure 9-5a**, the concentration of PCE increased at well 1122-MW1 until July 6, 1999, when PCE was detected in well 1122-MW1 at a concentration of 8.99 ug/L. Following July 6, 1999, the concentration of PCE decreased in well 1122-MW1. The observed half-life of 385 days was derived based on the PCE detections beginning July 6, 1999 (the non-detection of PCE on August 1, 2000 was omitted from this calculation to provide a better regression curve).

The initial PCE concentration used in the model is 3.48 ug/L, which is the average of the two most recent detections (on October 13, 2000 and January 3, 2001). This initial concentration (assumed to be on November 23, 2000), led to a predicted time of 3.7 years for compliance with the NJDEP criteria (1.0 ug/L). The published half-life for PCE of 730 days (Howard, 1991) was used instead of the observed half-life of 385 days to make more conservative predictions for PCE concentrations at well 1122-MW1. The migration distance to achieve compliance at well 1122-MW1 is predicted to be 83 feet. This prediction is shown graphically on **Figure 9-5b**.

The model led to the prediction that PCE could migrate 83 feet from well 1122-MW1 before PCE concentrations fall below the NJDEP criteria of 1.0 ug/L. These results need to be qualified by the fact that Mill Creek is located adjacent to Site 1122. As shown in **Figure 9-4**, PCE is not predicted to migrate into Mill Creek.

9.5 CEA Fact Sheet

The CEA Fact Sheet for Site 1122 can be found in **Appendix H**.

10.0 CEA INFORMATION FOR SITE 2567

The following includes all relevant CEA information for Site 2567, including site background, results of the remedial actions at the site, identification of COCs and groundwater modeling results.

10.1 Site Background

Site 2567 is located in the Charles Wood Area of Fort Monmouth at the northwest corner of the intersection of Laboratory Road and Hope Road (**Figure 10-1**). Site 2567 includes Building 2567, two gasoline dispenser islands located within the paved area south of the building and dense wooded areas located to the south and east of the site.

UST removal, SI and RI activities were performed by Weston, ATC and the Fort Monmouth DPW at Site 2567. The results of these investigations are detailed in the following reports:

- Weston's *UST Closure and Site Assessment Report for Building 2567, Tanks 33 and 46*, October 1993.
- Weston's *UST Closure and Site Assessment Report, Building 2567, UST Nos. 42, 43, 44, and 45*, January 1995.
- Weston's *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.
- ATC's Groundwater Monitoring Letter Report, May 2000.
- VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 2567*, March 2004 (Draft).

Westons's UST Closure Report and Site Assessment (1993) stated that there were two single-walled steel USTs located adjacent to Building 2567. Both USTs were cleaned, excavated and disposed of in accordance with NJDEP requirements. No potentially contaminated soils were observed surrounding the USTs. Following the removal of these two tanks, eight post-excavation samples were collected and analytical results showed that the samples contained either non-detectable concentrations of contaminants or concentrations below NJDEP soil cleanup criteria.

Westons's UST Closure Report and Site Assessment (1995) stated that there were four gasoline USTs located under the pavement approximately 30 feet southeast of Building 2567. In December 1989, the DPW notified the NJDEP of a fuel leak at the Charles Wood gas station, Building 2567. In response to the failed tightness test, one UST was placed out of service and four groundwater monitoring wells were installed in 1991 to evaluate groundwater quality in the area of Building 2567. In February 1993, the USTs were closed at Site 2567. Based on visual observations of stained soils and screening with a PID, approximately 936 cubic yards of soil were excavated from the area surrounding the USTs and the dispenser island. Post-excavation soil sampling analyses showed either non-detect contaminant concentrations or concentrations detected below NJDEP soil cleanup criteria. A second round of post-excavation soil sampling showed elevated concentrations of benzene, ethylbenzene and total xylenes. Five rounds of

groundwater monitoring well sampling showed elevated concentrations of benzene, 1,2-dichloroethene, methylene chloride, total xylenes and lead.

Weston's 1995 SI Report identified MTBE and Tert-butyl Alcohol (TBA) as groundwater contaminants without GWQC. As of December 2001, the NJDEP applies the interim groundwater quality criteria of 70 ug/L and 100 ug/L to MTBE and TBA, respectively. Both analytes exceeded their respective interim GWQC. One additional monitoring well was installed to determine if contaminants were present downgradient from the site. Also as part of Weston's SI of the Fort Monmouth military installation, soil sampling, monitoring well installation and sampling and geophysical surveying were conducted. In addition to sampling soil and groundwater at sites throughout the Main Post and Charles Wood areas of Fort Monmouth, Weston established background concentrations for soil and groundwater for the Fort Monmouth installation.

ATC's Letter Report presented sampling results from five monitoring wells at Site 2567, which were collected during six quarterly sampling rounds between May 1995 and April 1997. During these six sampling events, benzene, MTBE, methylene chloride, TBA and total xylenes were detected in groundwater samples at concentrations greater than their respective GWQC. Lead was not detected at concentrations exceeding the GWQC in any of the groundwater samples collected during this time.

10.2 Remedial Investigation Report Results

Fort Monmouth DPW has conducted RI activities, the implementation of a long-term monitoring program, subsurface hydrogeologic investigations, groundwater monitoring well installation, sampling and analyses, surface water sampling and analyses and soil sampling and analyses, to support and expand the results and findings of the 1995 Weston SI. The RI also included the collection of groundwater depth measurements, the performance of slug tests, evaluation of the aquifer classification, and the completion of a sensitive receptor survey. The results of the field and laboratory investigations were used to develop a conceptual site model to provide a basis for the development of a three-dimensional computer model. The purpose of these supplemental investigations was to define the areal extent of potential pollutants and evaluate impacts to groundwater in the vicinity of Site 2567. Remedial investigation activities were performed from September 1991 and continued through February 2004.

Seven monitoring wells comprise the quarterly groundwater monitoring program conducted by the DPW (**Figure 10-2**). The quarterly groundwater sampling program was conducted from April 1997 through February 2004 at Site 2567. Elevated concentrations of TBA were detected at Site 2567. As a result of these findings, the DPW will incorporate a document equivalent to a DER in the Fort Monmouth Installation Master Plan for the TBA groundwater contamination at Site 2567.

10.3 Contaminants of Concern

Based on the magnitude of the exceedences, the frequency of occurrences and the wide-ranging results, TBA is identified as a potential COC at Site 2567. Discussion leading to this conclusion

is presented in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 2567*, March 2004 (Draft). See **Table 10-1** below for a COC summary:

Table 10-1
Determination of COCs
Site 2567

Analyte	NJDEP GWQC (ug/L)	Maximum Result (ug/L)	# of NJDEP GWQC Exceedences
TBA	100	1488.05	24

10.4 Groundwater Modeling Results

A conceptual site model for Site 2567 was developed to provide a basis for the computer model development. The conceptual site model includes the topography, groundwater recharge, groundwater flow conditions and the geologic formations. The parameters used in the groundwater flow model were based on Fort Monmouth survey data, published literature about the hydrogeology of the region, as well as field measurements of groundwater elevation at the site. The USGS Modular Three-Dimensional Groundwater Flow Model, MODFLOW, was chosen for the groundwater simulation to account for the adsorption of the metals to the soil (e.g., retardation), as well as the dispersion (or dilution) of contaminants over time. The simulation also incorporates three-dimensional groundwater flow, groundwater recharge, and considers the variability of soil types, anisotropy and other hydrogeologic considerations. Conceptual site model information and model input parameters are presented in VERSAR's *Remedial Investigation Report and Remedial Action Workplan, Site 2567*, March 2004 (Draft).

The groundwater modeling information presented below does not address the migration of benzene and MTBE because these two contaminants have not been detected above their respective GWQC in recent groundwater samples. Predictions for the migration and change in TBA concentration over time are based on the most recent groundwater sampling results for TBA at Site 2567 and published biodegradation rates for TBA in groundwater.

TBA

At monitoring well 2567-MW1, the initial TBA concentration was measured to be 1,488.05 ug/L on February 9, 2001. This concentration led to a predicted time of 3.9 years for compliance with the NJDEP criteria. The migration distance of TBA from well 2567-MW1 is predicted to be 1,800 feet. The predicted TBA concentration at well 2567-MW1 is shown in **Figure 10-3**. **Figure 10-4** displays the area that is estimated to be impacted by future TBA migration.

The model predictions for TBA do not match past observations of TBA concentrations in groundwater at Site 2567. If the TBA contamination will migrate approximately 1,800 feet in 3.9 years, as predicted in the biodegradation model, TBA should have already migrated to one of the three downgradient monitoring wells. However, TBA was not detected in any of these three monitoring wells in any of the sampling rounds. In addition, neither benzene nor MTBE have been detected at these three downgradient monitoring wells.

A possible explanation for lack of detection of the COCs in the three downgradient monitoring wells is that underground utility lines at Site 2567 may affect the direction of shallow groundwater flow at Site 2567, thus diverting groundwater contaminants away from downgradient monitoring wells. In **Figure 10-4**, the predicted migration of TBA is shown to be extending southward along Hope Road. In this figure, TBA is shown to migrate from Site 2567 southward towards the unnamed tributary to Wampum Brook (approximately 200 feet) and possibly continuing south to Wampum Brook (approximately 800 feet from Site 2567). In February 2004, groundwater samples were collected via Geoprobe® at locations east and southeast of 2567-MW1 (**Figure 10-4**). Results indicate only minor TBA concentrations of 5.52 (GW1), 2.63 (GW2), and 46 ug/L (GW3) at these points demonstrating limited TBA migration. Future remedial options are being assessed.

10.5 CEA Fact Sheet

The CEA Fact Sheet for Site 2567 can be found in **Appendix I**.

11.0 REFERENCES

ATC, July 1998, *UST Closure and Site Investigation Report for Former Building T-80, NJDEP Registration No. 090010-06*.

ATC, May 2000, Groundwater Monitoring Letter Report.

ATC, May 2000, *UST Closure and Site Investigation Report, Building 166, UST No. 90017-17*.

Brown, G.A. and O.S. Zapecza, 1990. *Results of Test Drilling in Howell Township, Monmouth County, New Jersey*. USGS, West Trenton, NJ.

Howard, P.H., et. al., 1991, *Handbook of Environmental Degradation Rates*. Lewis Publishers.

Jablonski, L.A., 1968, *Groundwater Resources of Monmouth County, New Jersey. USGS Special Report 23*. USGS, Washington, DC.

Martin, M., 1998, *Groundwater Flow in the New Jersey Coastal Plain*. USGS Professional Paper 1404-H.

Meisler, H., J.A. Miller, L.L. Knobel, and R.L. Wait, 1988, "Region 22, Atlantic and Eastern Gulf Coastal Plan," in *Hydrogeology: The Geology of North America*, W. Back, J.S. Rosenhein, and P.R. Seaber, editors. Vol. 0-2. pp. 209-218.

Minard, J.P., 1969, *Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey*. U.S. Government Printing Office, Washington, DC.

New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.

SMC, 1998, *Underground Storage Tank Closure and Site Investigation Report – Building 812*.

SMC, September 1998, *UST Closure and Site Investigation Report, Building 283B, Main Post-West Area, NJDEP Registration No. 0081533-59*.

Smith, February 1996, *UST Closure and Site Investigation Report for Former Building 108, UST No. 090010-7*.

Smith, February 1996, *UST Closure and Site Investigation Report, Building 1122, UST No. 081533-171*.

U.S. Geological Survey, 1981, *Long Branch Quadrangle Map*.

VERSAR, October 2000, *UST Closure and Site Investigation Report, Building 283C, NJDEP Registration No. 0081533-229*.

VERSAR, June 2001, *Remedial Investigation Report and Remedial Action Workplan, Site 812, Fort Monmouth, New Jersey*.

VERSAR, September 2003, *Remedial Investigation Report, M-12 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, October 2003, *Remedial Investigation Report, M-18 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, October 2003, *Remedial Investigation Report and Sediment Quality Evaluation, M-12/M-14 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, October 2003, *Remedial Investigation Report for Near-Surface Soils, M-12 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, February 2004, *Remedial Investigation Report and Sediment Quality Evaluation, M-18 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, March 2004, *Remedial Investigation Report, Site 80/166, Fort Monmouth, New Jersey* (Draft).

VERSAR, March 2004, *Remedial Investigation Report, Site 108, Fort Monmouth, New Jersey* (Draft).

VERSAR, March 2004, *Remedial Investigation Report, Site 1122, Fort Monmouth, New Jersey* (Draft).

VERSAR, April 2004, *Remedial Investigation Report and Remedial Action Workplan, Site 283, Fort Monmouth, New Jersey*.

VERSAR, March 2004, *Remedial Investigation Report and Remedial Action Workplan, Site 2567, Fort Monmouth, New Jersey* (Draft).

VERSAR, March 2004, *Remedial Investigation Report for Near-Surface Soils, M-18 Landfill Site, Fort Monmouth, New Jersey*.

VERSAR, pending, *Remedial Action Progress Report, Site 812, Fort Monmouth, New Jersey*.

Weston, October 1993, *UST Closure and Site Investigation Report, Building 1122, NJDEPE Registration No. 81533-199*.

Weston, October 1993, *UST Closure and Site Assessment Report for Building 2567, Tanks 33 and 46*.

Weston, May 1994, *UST Closure and Site Investigation Report for Building 108, NJDEPE Facility No. 090010, TMS No. 60, 61, 62, 63 and 64, Fort Monmouth, New Jersey*.

Weston, January 1995, *UST Closure and Site Assessment Report, Building 2567, UST Nos. 42, 43, 44, and 45*.

Weston, December 1995, *Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*.

Zapecza, O., 1989, *Hydrogeologic Framework of the New Jersey Coastal Plain*. U.S. Geological Survey Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURES



NOTES:

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE		LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	
RAILROAD TRACKS			

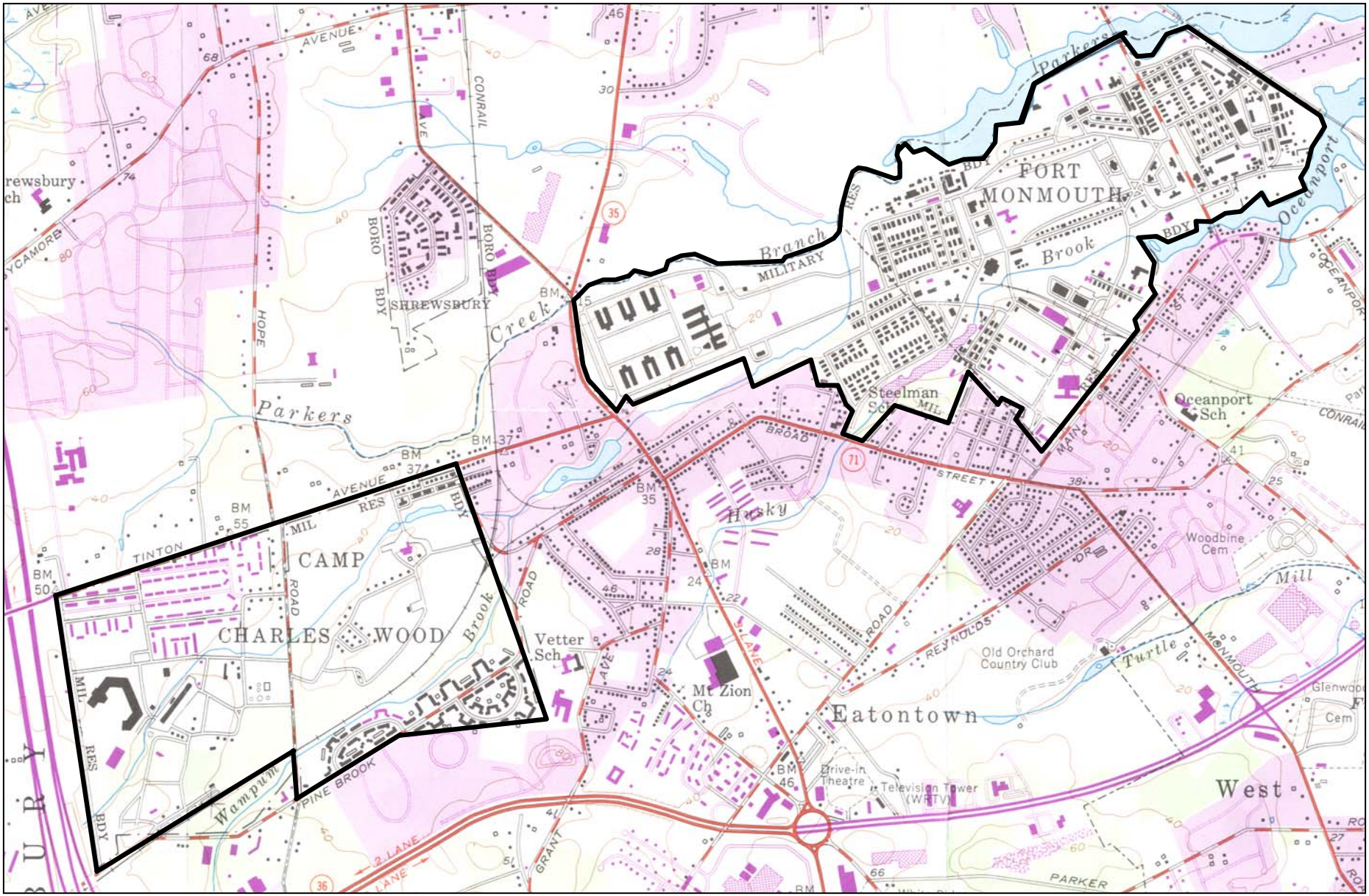
TITLE:

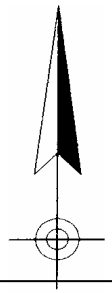
FIGURE 1-1
CEA LOCATIONS
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 02 JUL 01
CHECKED BY:	DATE CHECKED: 02 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 1-1
	FILE No.: FIGURE 1-1

Vel-Sal, INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

SCALE: 1" = 250'
SHEET 1 OF 1 REV.: A







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

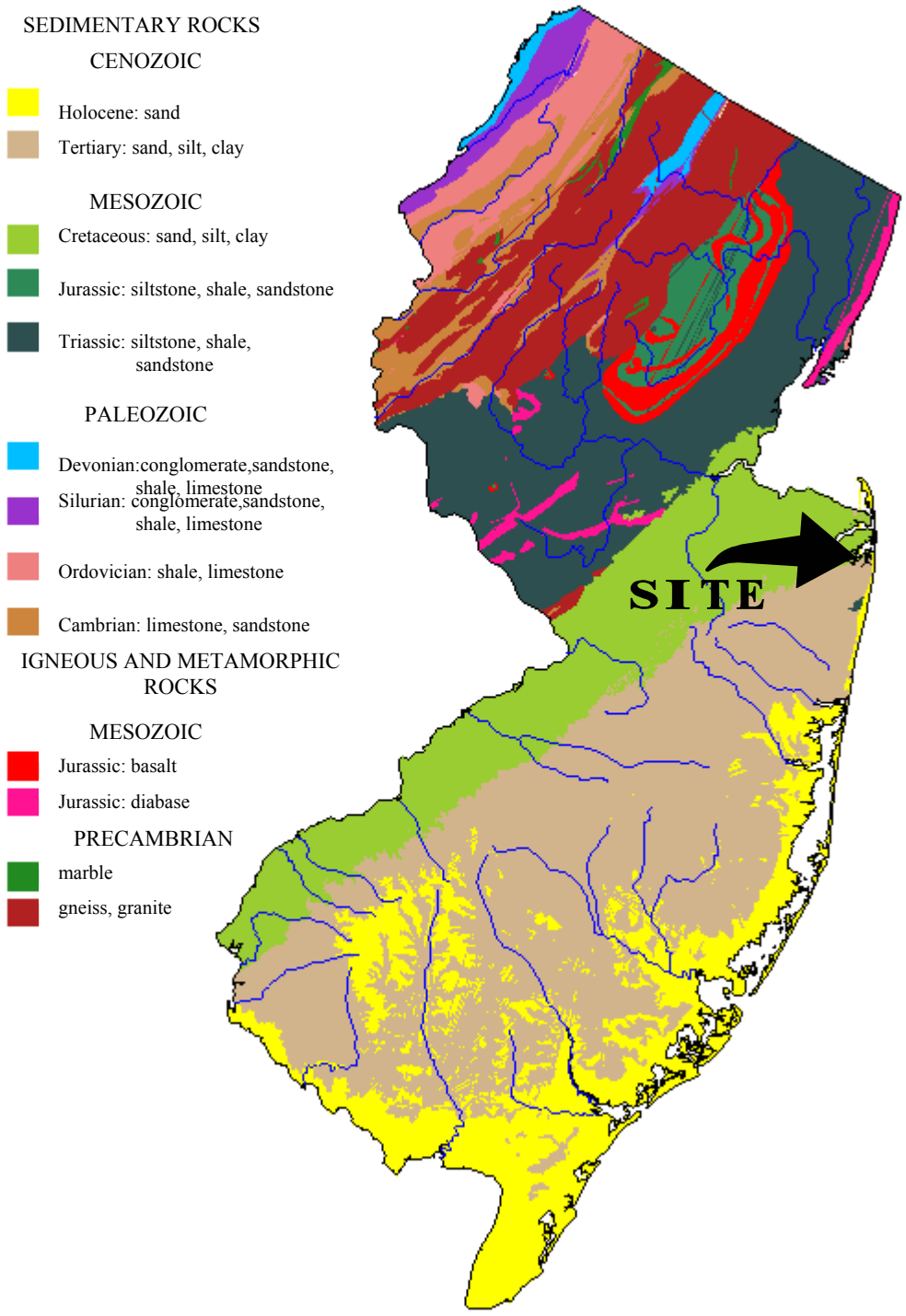
DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 2-1
Site Location Map
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

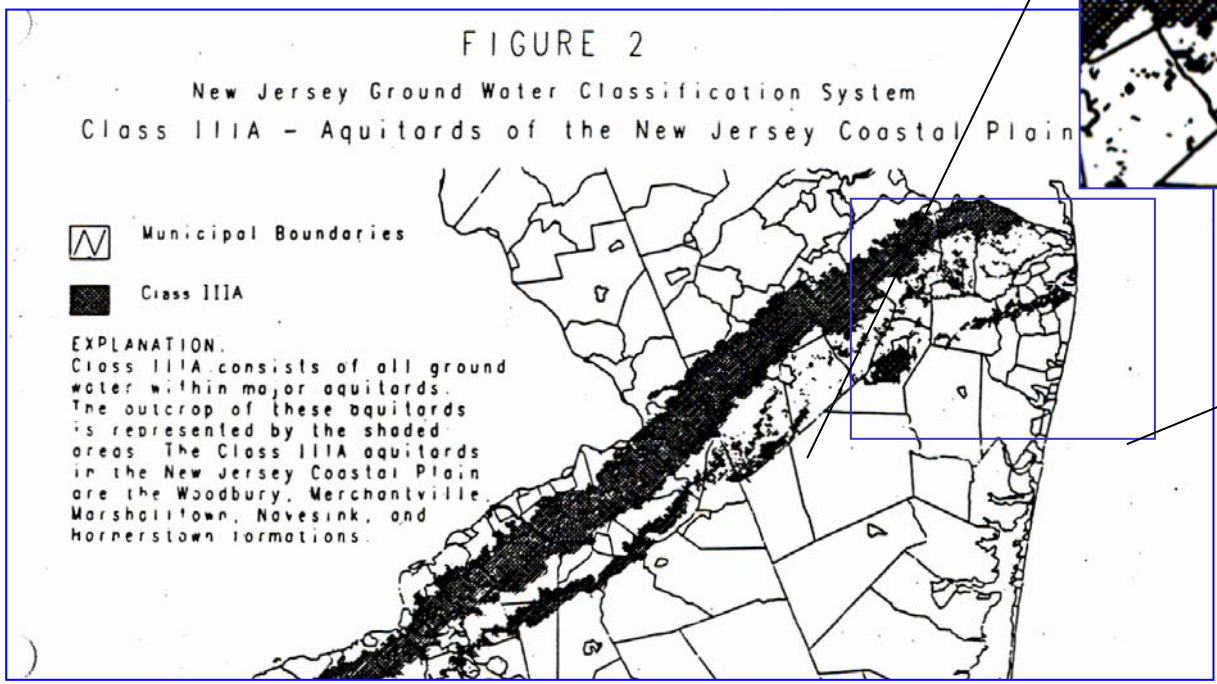
Geologic Map of New Jersey



Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.

FIGURE 2-2
Geologic Map of New Jersey
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



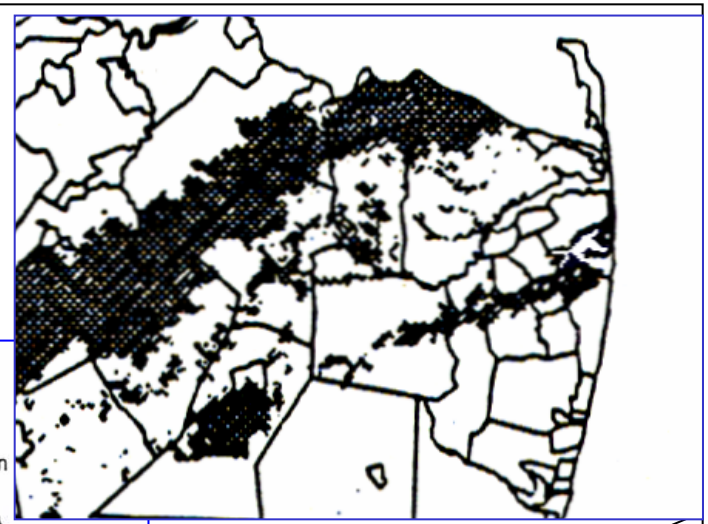
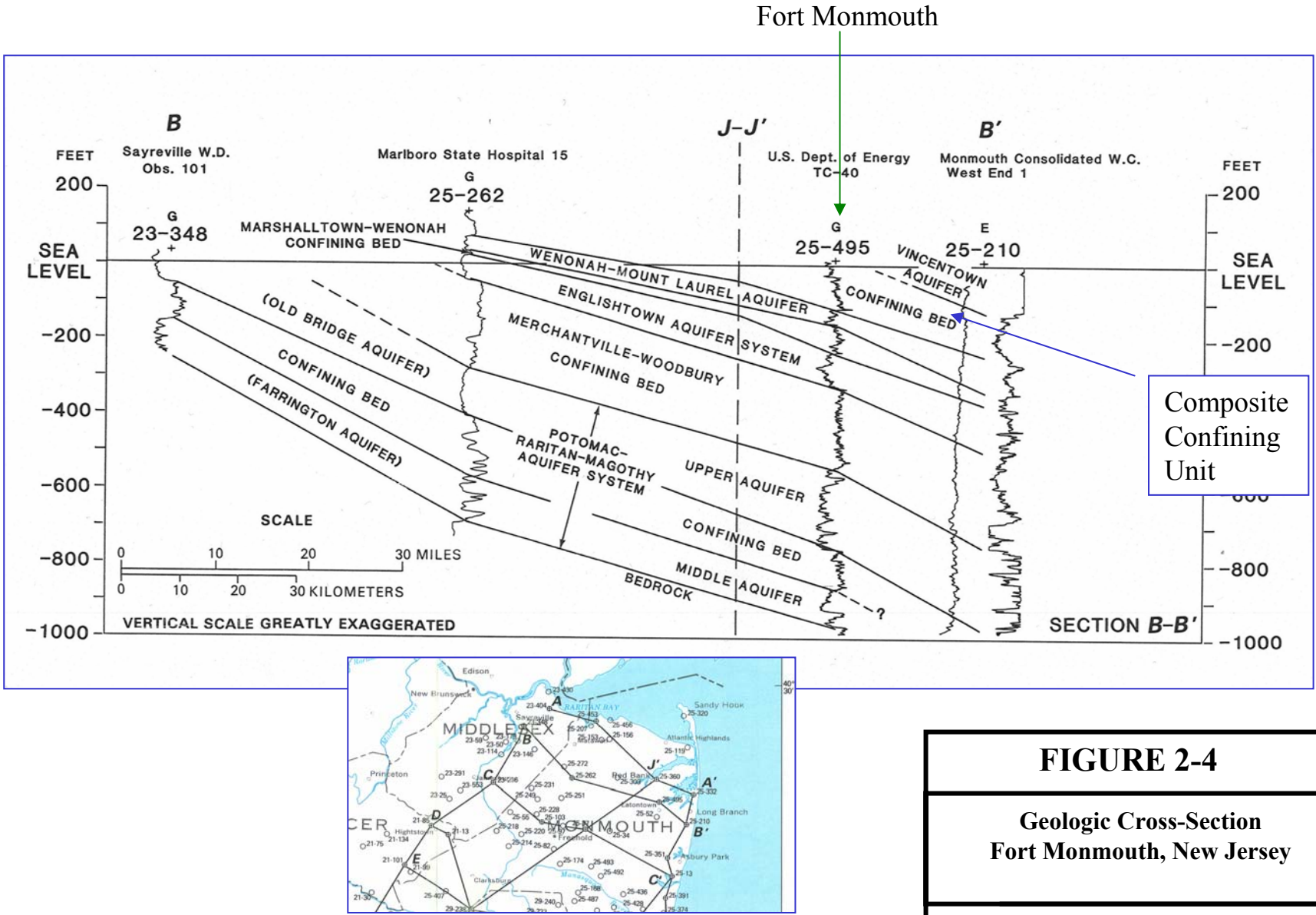


FIGURE 2-3

New Jersey Groundwater Classification
Class IIIA
Fort Monmouth, New Jersey

Source: New Jersey Groundwater Quality Standards, NJAC 7:9-6

Versar INC.
201 Gibraltar Rd., Ste. 100
Horsham, PA 19044
(215) 957-0955

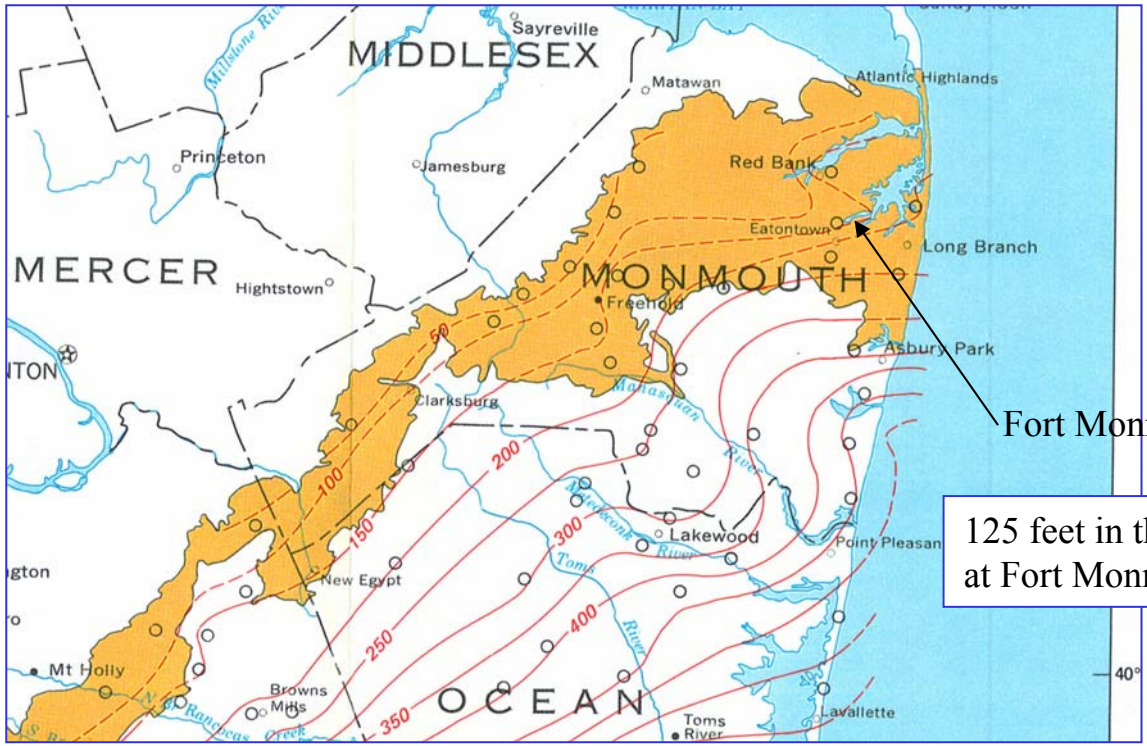


Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 2-4

Geologic Cross-Section
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Ste. 100
Horsham, PA 19044
(215) 957-0955



EXPLANATION

Outcrop area of the Navesink Formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, and Manasquan Formation

600 — Line of equal thickness of the composite confining bed Dashed where approximately located. Interval 50 feet

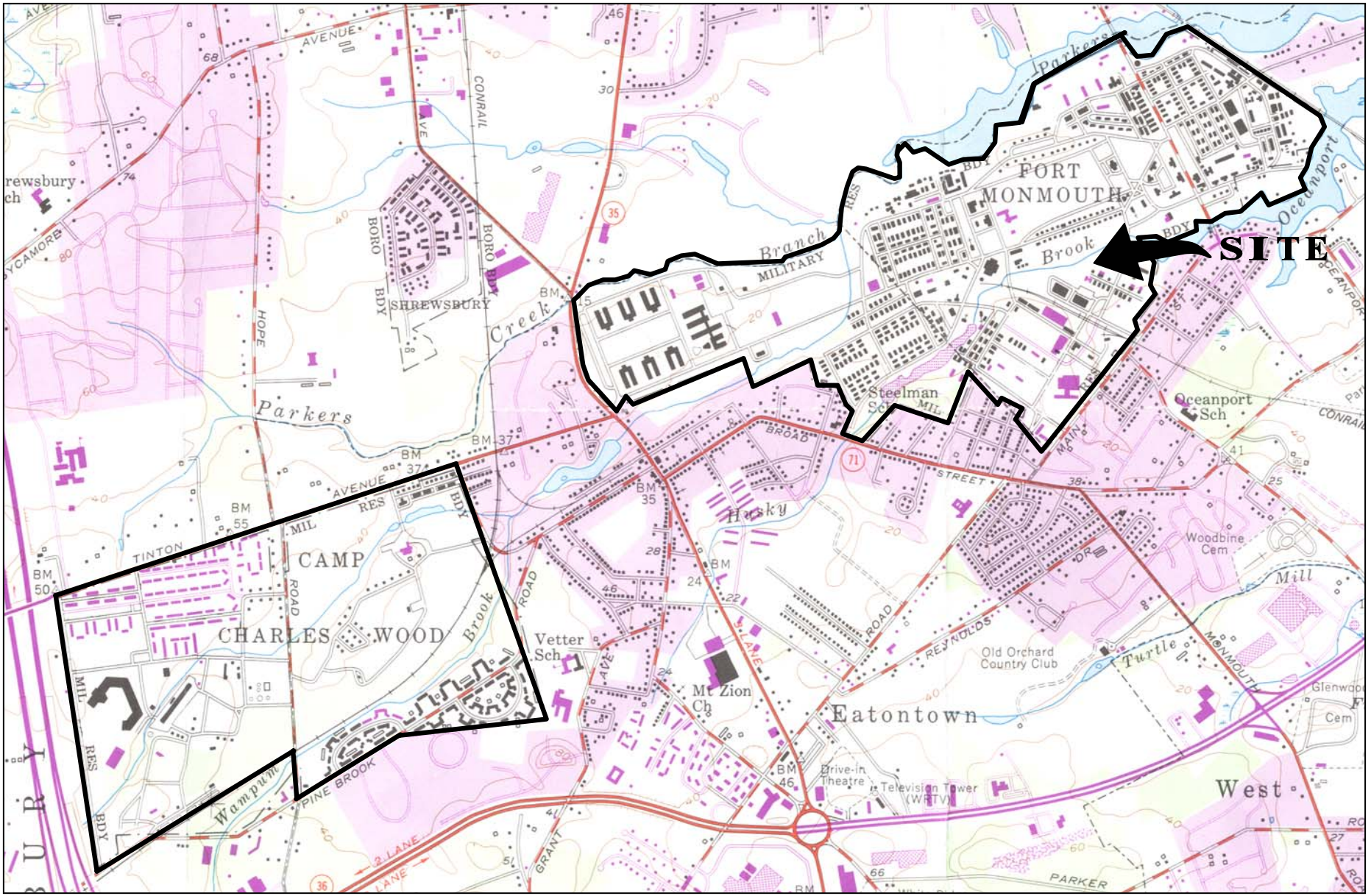
Well location

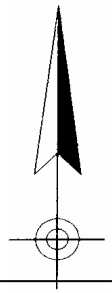
Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 2-5

Outcrop and Thickness of Composite Confining Unit Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Ste. 100
Horsham, PA 19044
(215) 957-0955







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

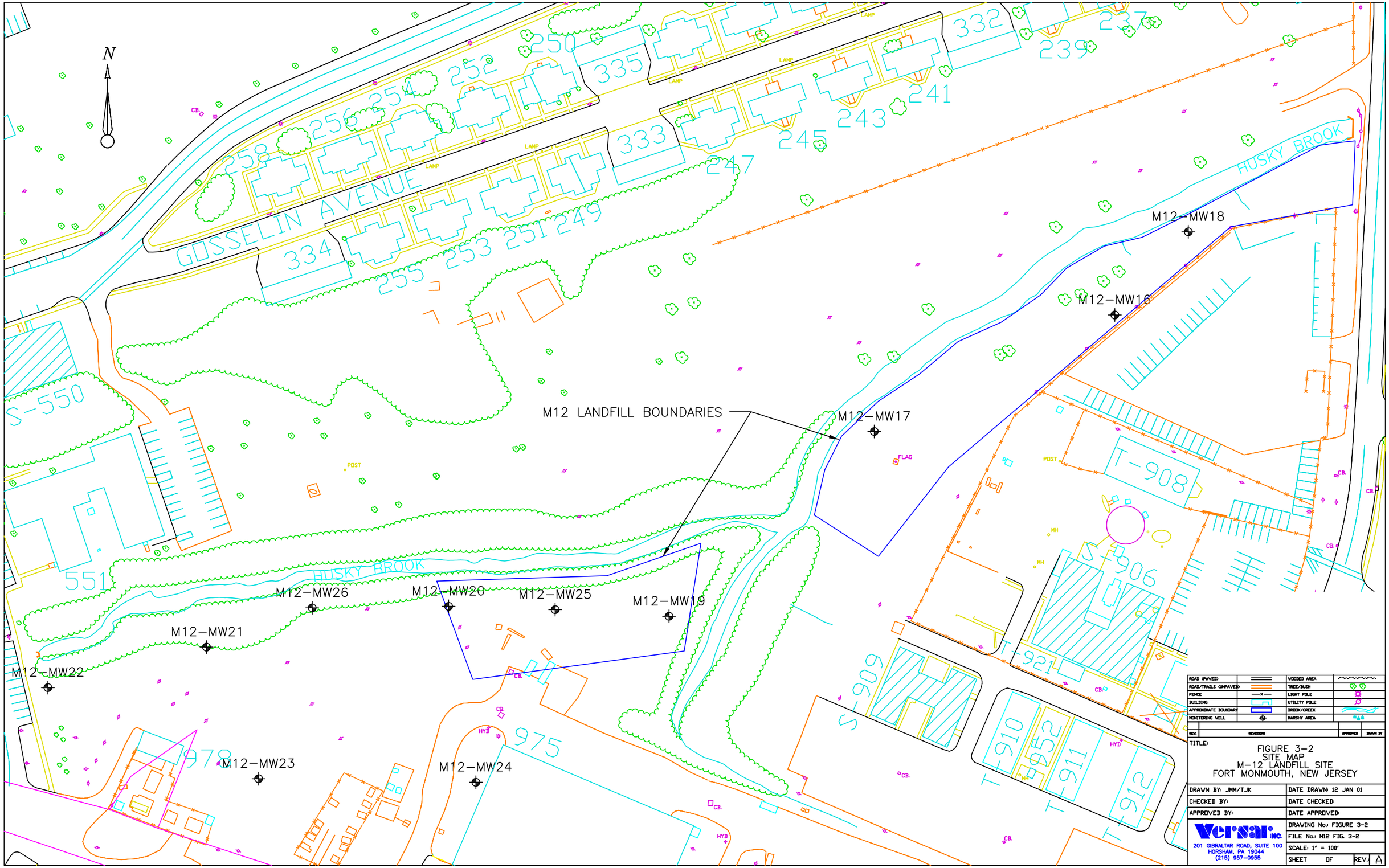
PHOTOREVISED 1981

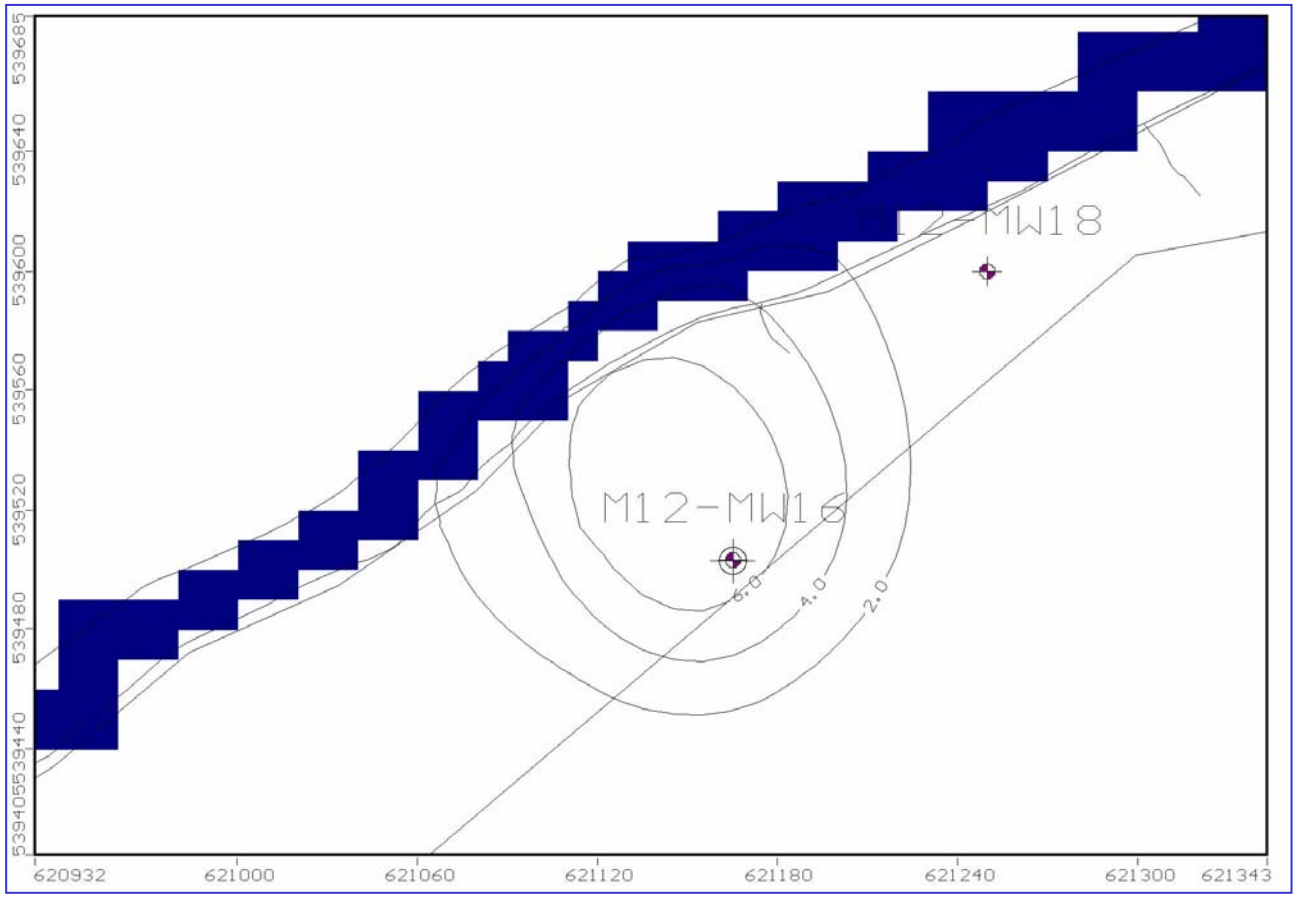
DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 3-1
Site Location Map
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955


N
GOSSELIN AVENUE
HUSKY BROOK
M12 LANDFILL BOUNDARIES
M12-MW18
M12-MW16
M12-MW17
M12-MW26
M12-MW20
M12-MW25
M12-MW19
M12-MW21
M12-MW22
M12-MW23
M12-MW24
S-550
551
978
975
T-908
S-906
T-921
S-909
T-910
T-911
T-912
ROAD (PAVED)
ROAD/TRAILS (UNPAVED)
FENCE
BUILDING
APPROXIMATE BOUNDARY
MONITORING WELL
WOODED AREA
TREE/BUSH
LIGHT POLE
UTILITY POLE
BROOK/CREEK
MARSHY AREA
REV.
REVISIONS
APPROVED
DRAWN BY
TITLE:
FIGURE 3-2
SITE MAP
M-12 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY
DRAWN BY: JMM/TJK
DATE DRAWN: 12 JAN 01
CHECKED BY:
DATE CHECKED:
APPROVED BY:
DATE APPROVED:
DRAWING No.: FIGURE 3-2
FILE No.: M12 FIG. 3-2
SCALE: 1" = 100'
SHEET OF
REV.: A
Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



Notes:
1) Isoconcentration contours represent predicted arsenic concentrations at 99 years, in the vicinity of monitoring well M12-MW16.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 3-3a

Predicted Arsenic Concentration
99 Years, Well M12-MW16
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

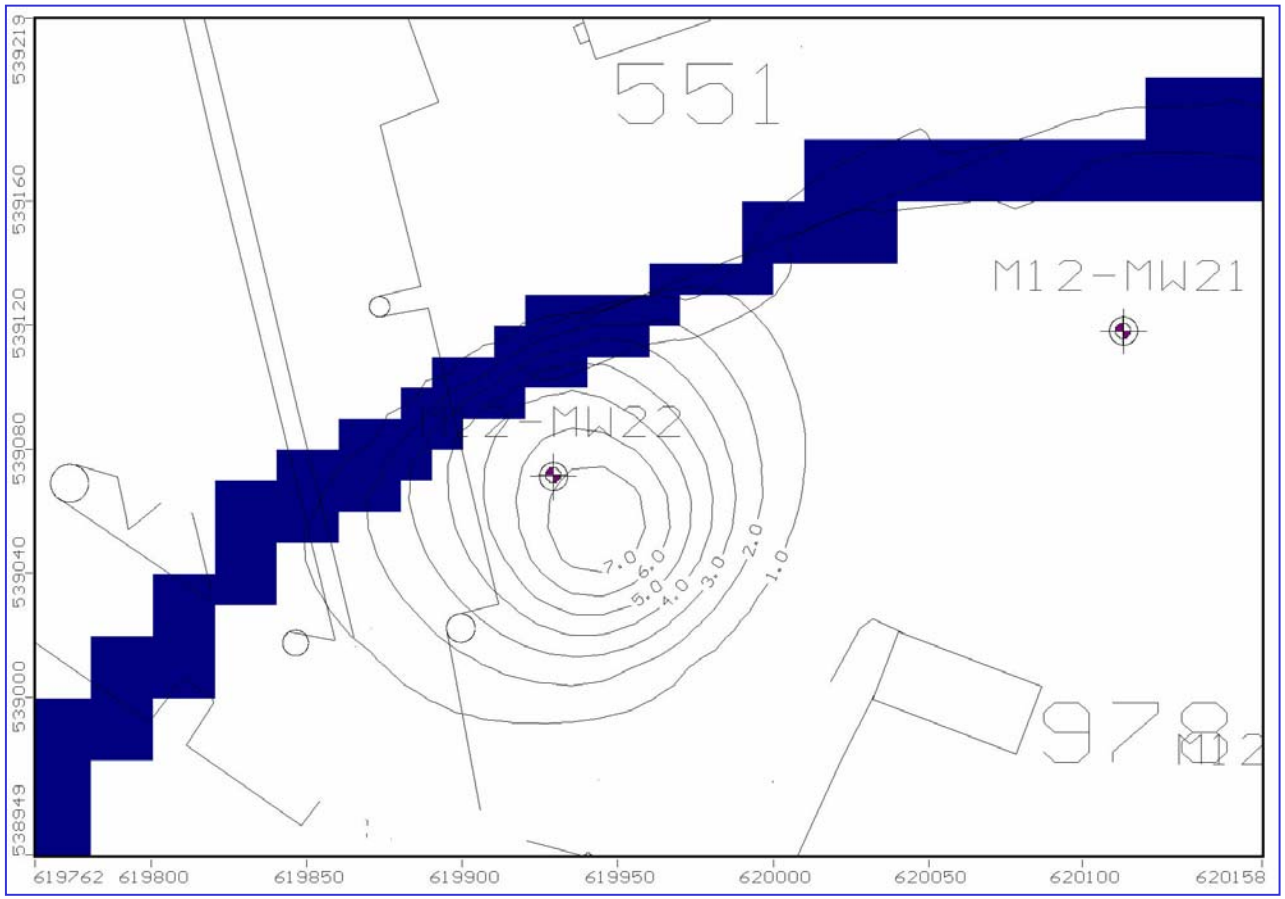
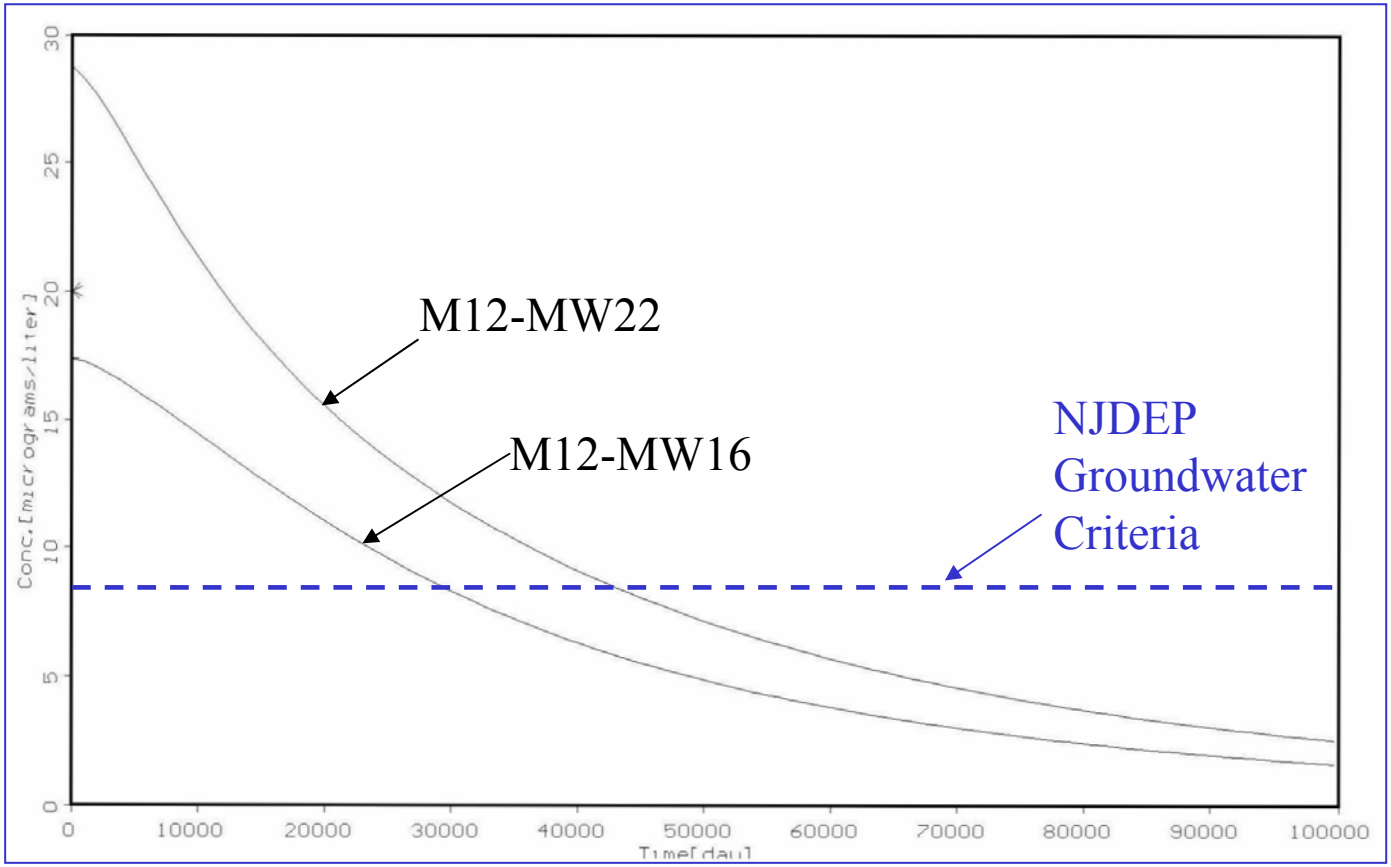


FIGURE 3-3b

Predicted Arsenic Concentration
150 Years, Well M12-MW22
M-12 Landfill Site
Fort Monmouth, New Jersey

Notes:
1) Isoconcentration contours represent predicted arsenic concentrations at 150 years, in the vicinity of monitoring well M12-MW22.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



Notes:
1) NJDEP groundwater criteria for arsenic is 8.0 micrograms per liter (ug/L).
2) Time for compliance at well M12-MW16 is 99 years.
3) Time for compliance at well M12-MW22 is 150 years.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 3-3c

Predicted Arsenic Concentration Versus Time
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

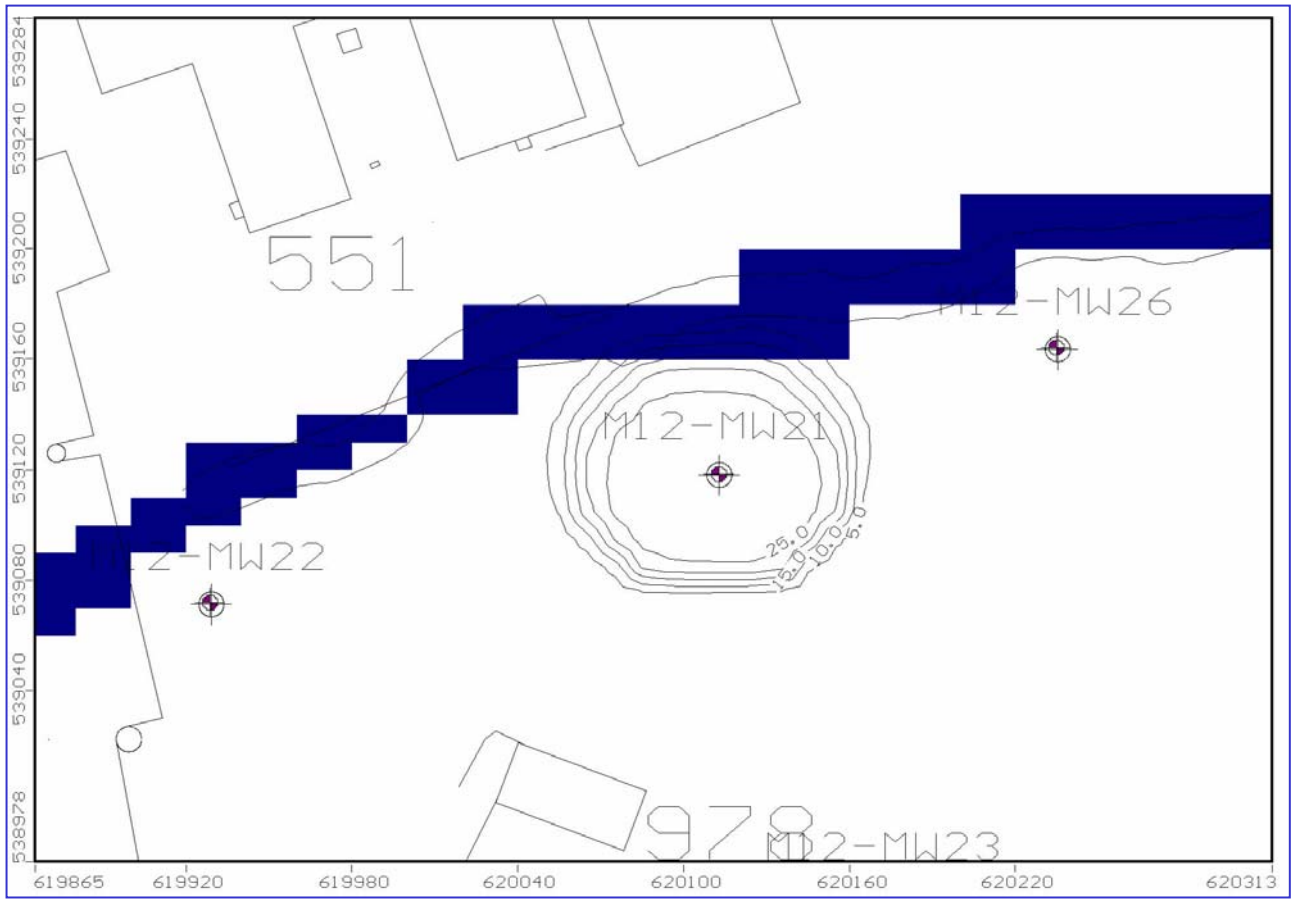
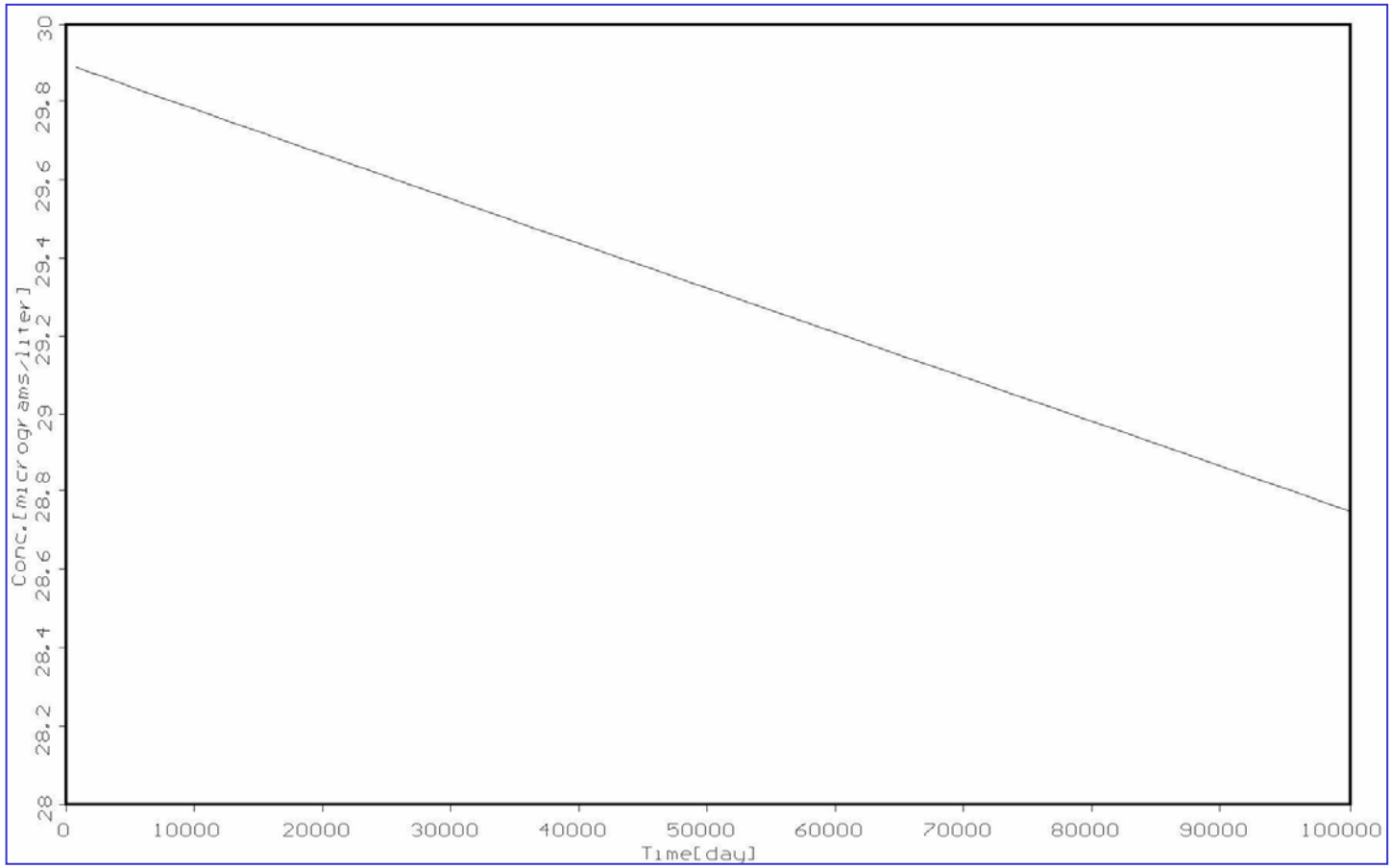


FIGURE 3-4a

Predicted Lead Concentration
274 Years, Well M12-MW21
M-12 Landfill Site
Fort Monmouth, New Jersey

Notes:
1) Isoconcentration contours represent predicted lead concentrations at 274 years, in the vicinity of monitoring well M12-MW21.
2) Areas shaded blue represents the Husky Brook.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

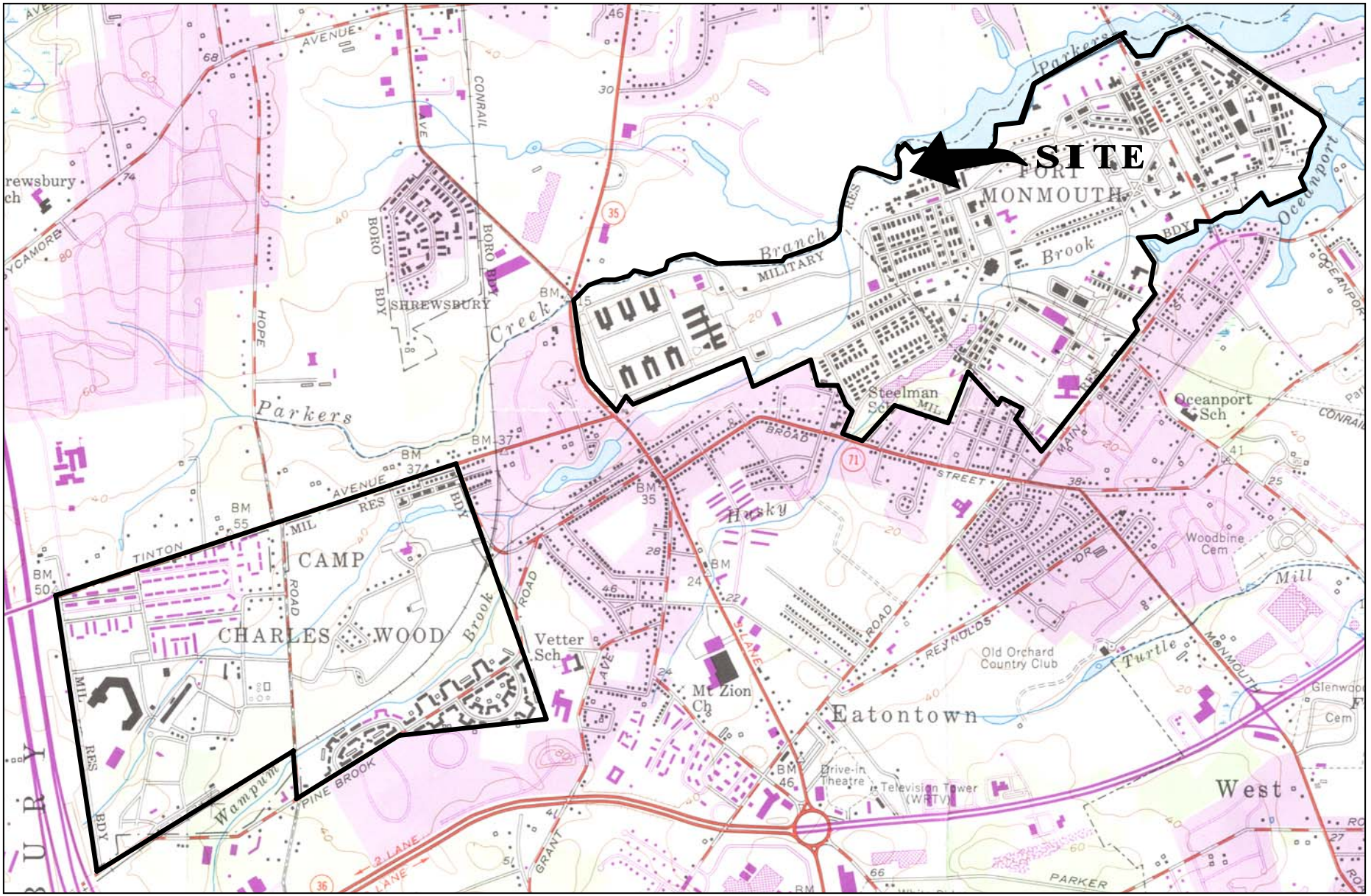


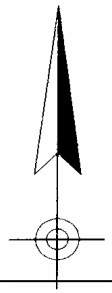
Notes:
1) NJDEP groundwater criteria for lead is 10 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 3-4b

Predicted Lead Concentration Versus Time
M-12 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

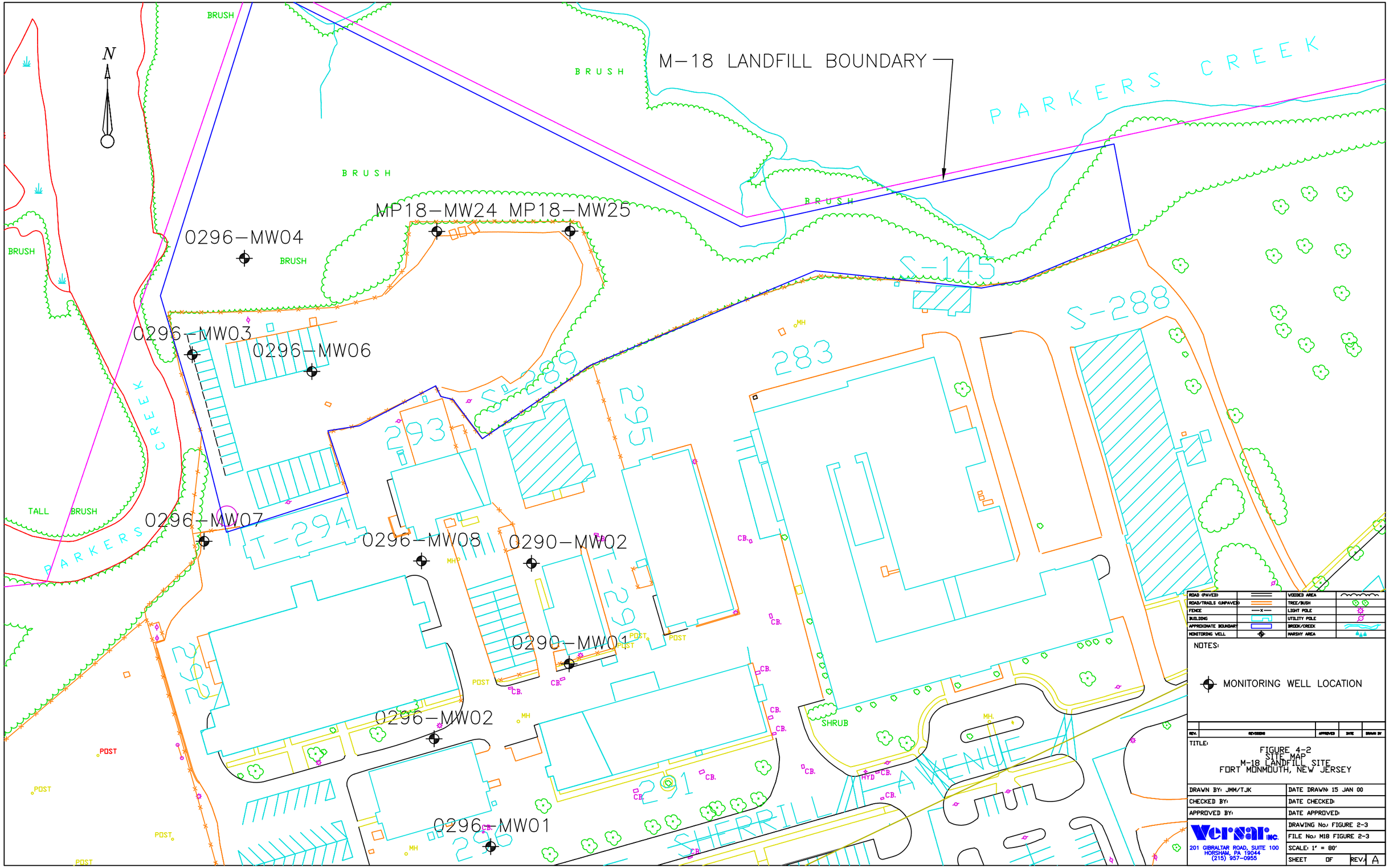
PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

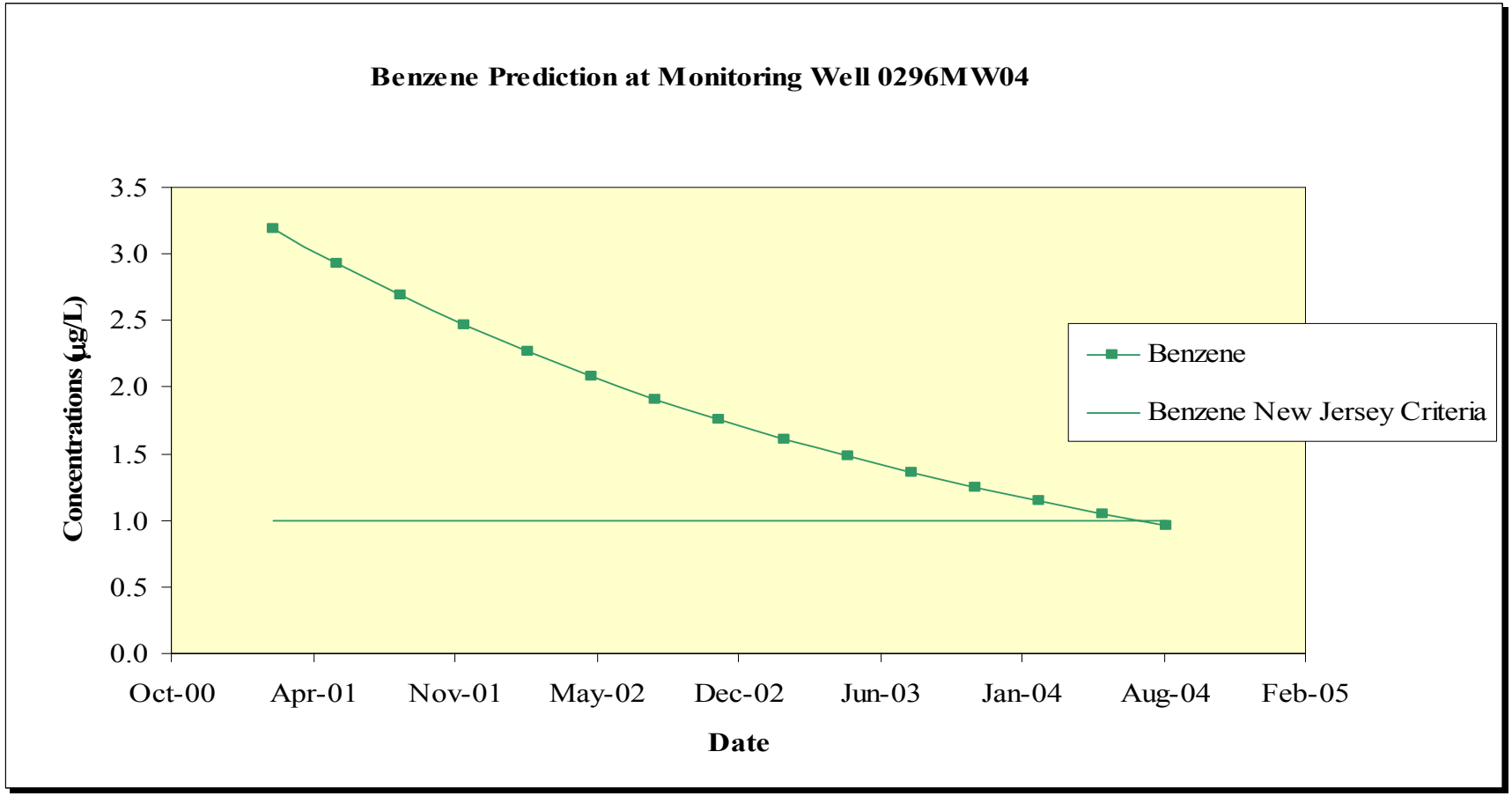
Mapped, edited and published by the Geological Survey

Figure 4-1
Site Location Map
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



N
M-18 LANDFILL BOUNDARY
PARKERS CREEK
BRUSH
MP18-MW24
MP18-MW25
0296-MW04
0296-MW03
0296-MW06
0296-MW07
0296-MW08
0290-MW02
0290-MW01
0296-MW02
0296-MW01
S-145
S-288
S-289
283
293
295
T-294
T-29
292
291
SHERRILL AVENUE
SHRUB
TALL BRUSH
POST
CB.
MH
HYD
ROAD (PAVED)
ROAD/TRAILS (UNPAVED)
FENCE
BUILDING
APPROXIMATE BOUNDARY
MONITORING WELL
WOODED AREA
TREE/BUSH
LIGHT POLE
UTILITY POLE
BROOK/CREEK
MARSHY AREA
NOTES:
MONITORING WELL LOCATION
REV.
REVISIONS
APPROVED
DATE
DRAWN BY
TITLE:
FIGURE 4-2
SITE MAP
M-18 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY
DRAWN BY: JMM/TJK
DATE DRAWN: 15 JAN 00
CHECKED BY:
DATE CHECKED:
APPROVED BY:
DATE APPROVED:
DRAWING No.: FIGURE 2-3
FILE No.: M18 FIGURE 2-3
SCALE: 1" = 80'
SHEET OF
REV.: A
Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

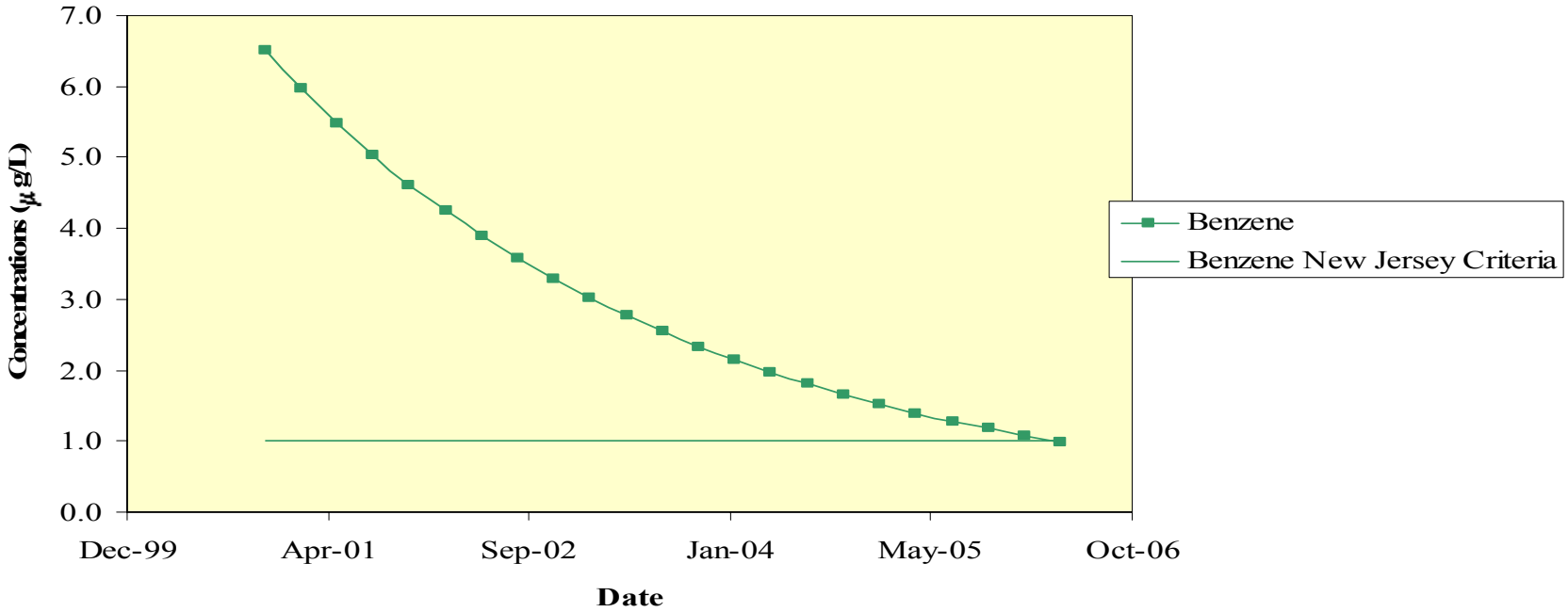


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Initial benzene concentration at well 0296-MW04 was considered to be 3.19 ug/L on February 22, 2001.
3) Estimated time for NJDEP compliance is 3.5 years.

FIGURE 4-3a

Benzene Prediction
Well 0296-MW04
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Initial benzene concentration at well 0296-MW06 was considered to be 6.5 ug/L on November 13, 2000.
3) Estimated time for NJDEP compliance is 5.4 years.

FIGURE 4-3b

Benzene Prediction
Well 0296-MW06
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

N

M-18 LANDFILL BOUNDARY

PARKERS CREEK

MP18-MW24 MP18-MW25

0296-MW04

0296-MW03

0296-MW06

S-145

S-288

S-289

283

293

262

T-294

0296-MW07

0296-MW08

0290-MW02

0290-MW01

252

252

0296-MW02

291

296

0296-MW01

SHERRILL AVENUE

PARKERS CREEK

0 40 80 160

SCALE IN FEET

NOTES:

- M-18 LANDFILL
- BUILDING
- ROAD/CURB
- BROOK/CREEK
- MONITORING WELL
- AREAL EXTENT OF BENZENE MIGRATION

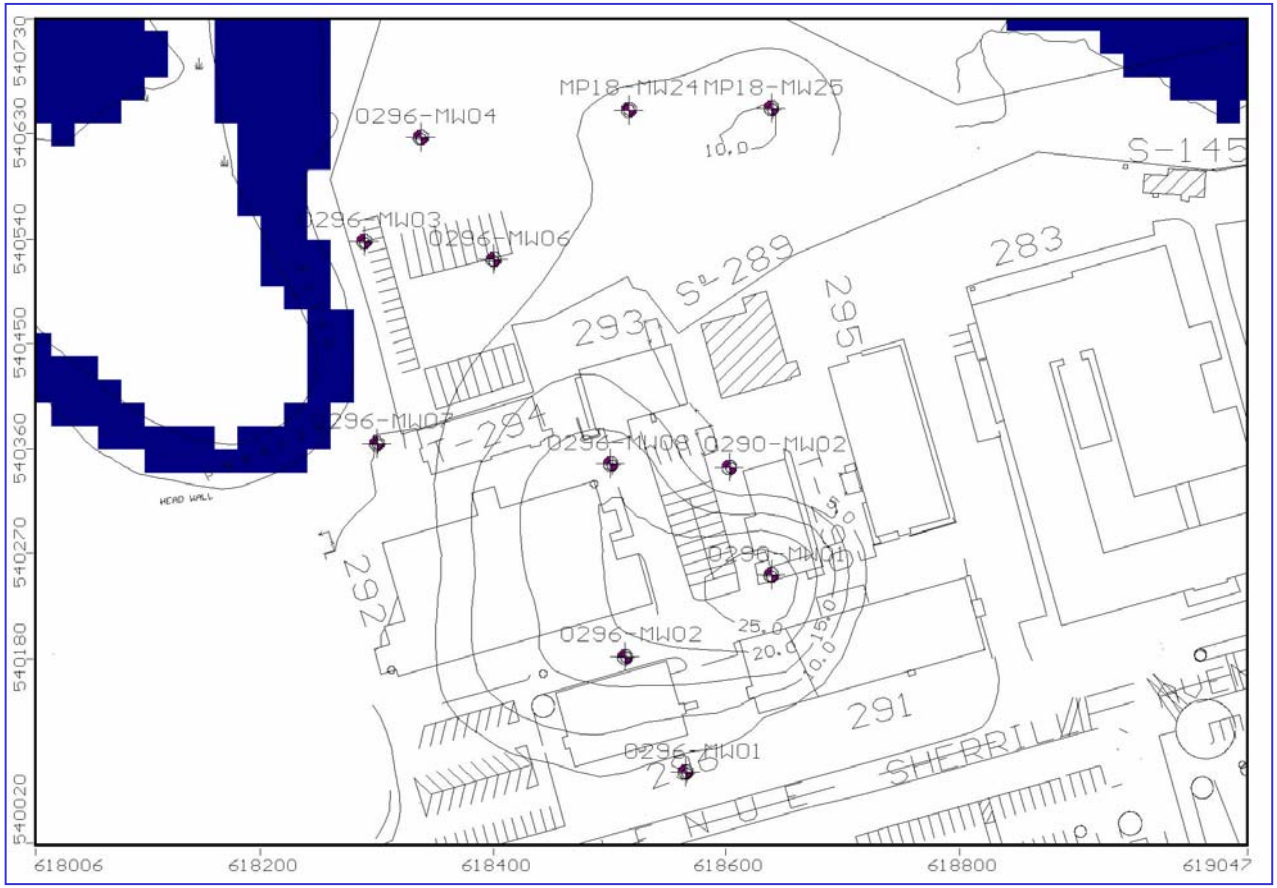
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 4-4
PREDICTED AREA IMPACTED BY BENZENE
M-18 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 15 JAN 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: M18 CEA
	FILE No.: M18 CEA FIGURE 4-4
	SCALE: 1" = 80'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

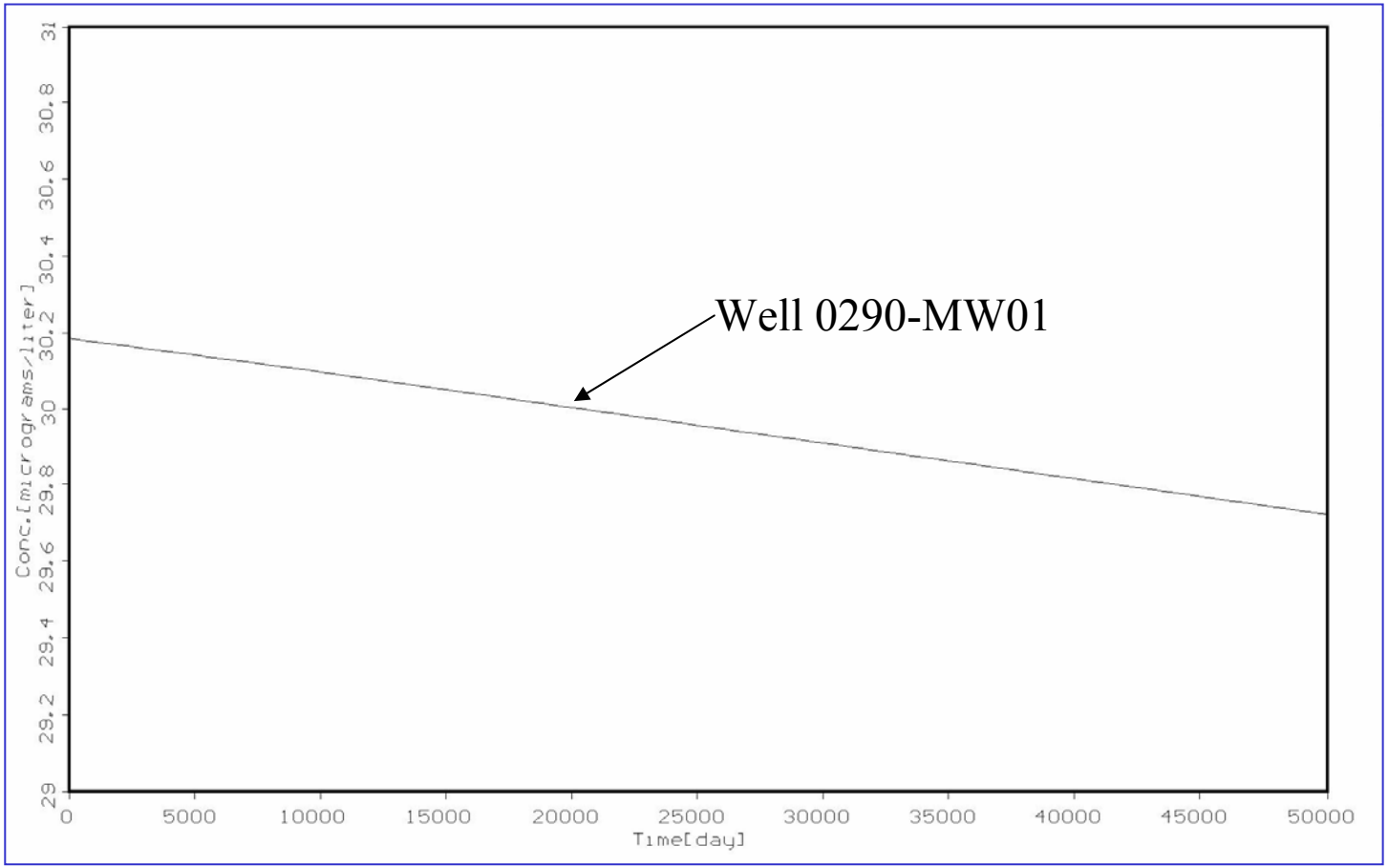


Notes:
1) Isoconcentration contours represent predicted arsenic concentrations at 137 years.
2) Areas shaded blue represents Parkers Creek.
3) Monitoring wells are shown in purple.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-5a

Predicted Arsenic Concentration
137 Years
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

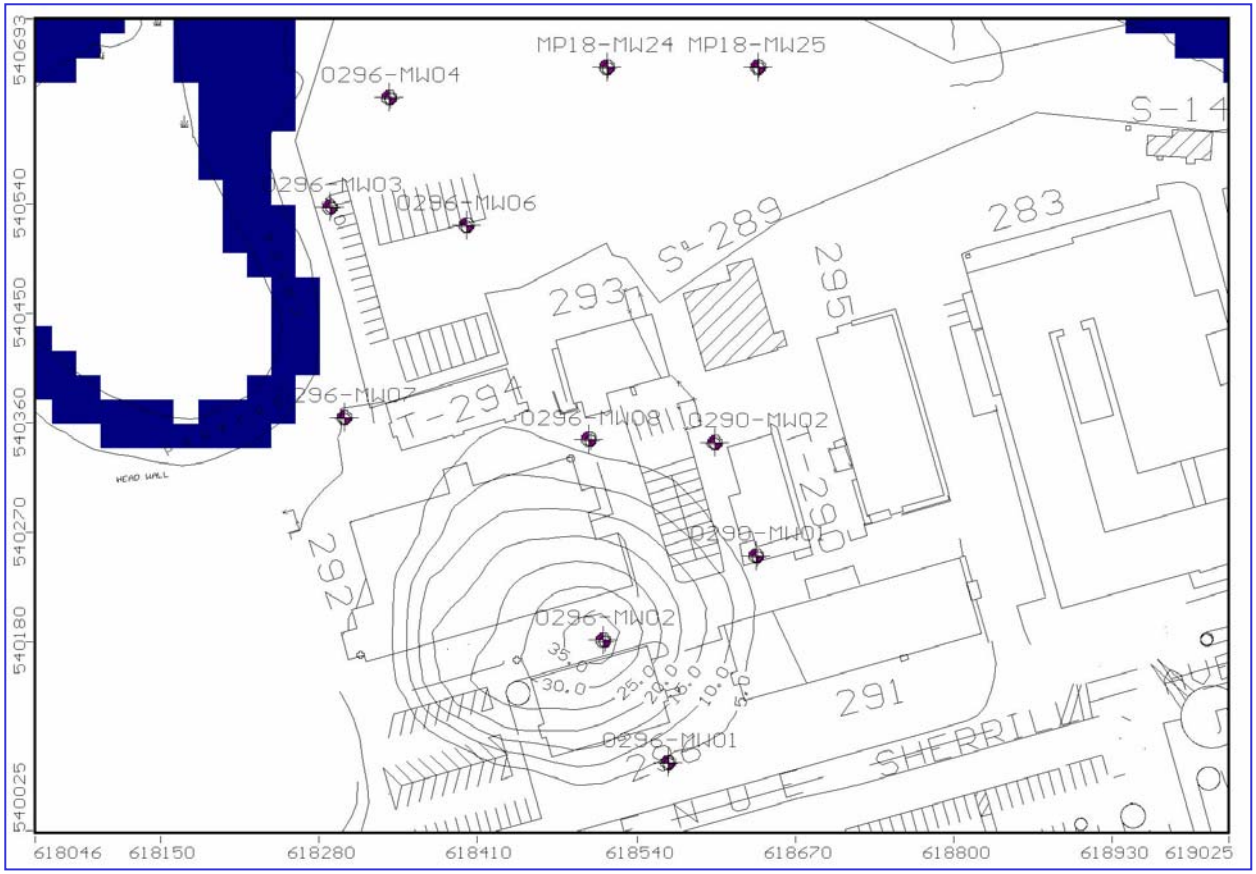


Notes:
1) NJDEP groundwater criteria for arsenic is 8.0 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-5b

Predicted Arsenic Concentration Versus Time
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

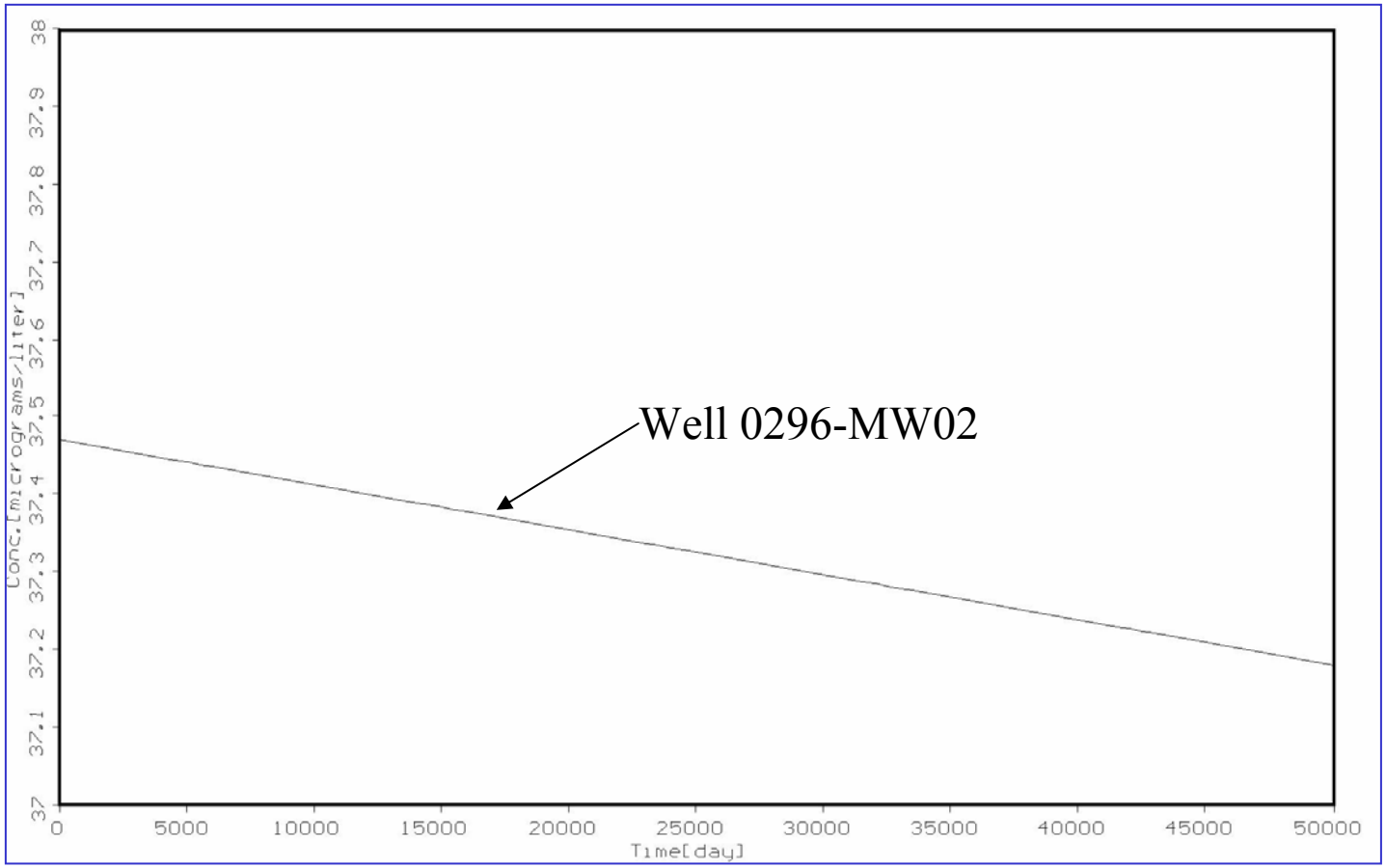


Notes:
1) Isoconcentration contours represent predicted cadmium concentrations at 137 years.
2) Areas shaded blue represents Parkers Creek.
3) Monitoring wells are shown in purple.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-6a

Predicted Cadmium Concentration
137 Years
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

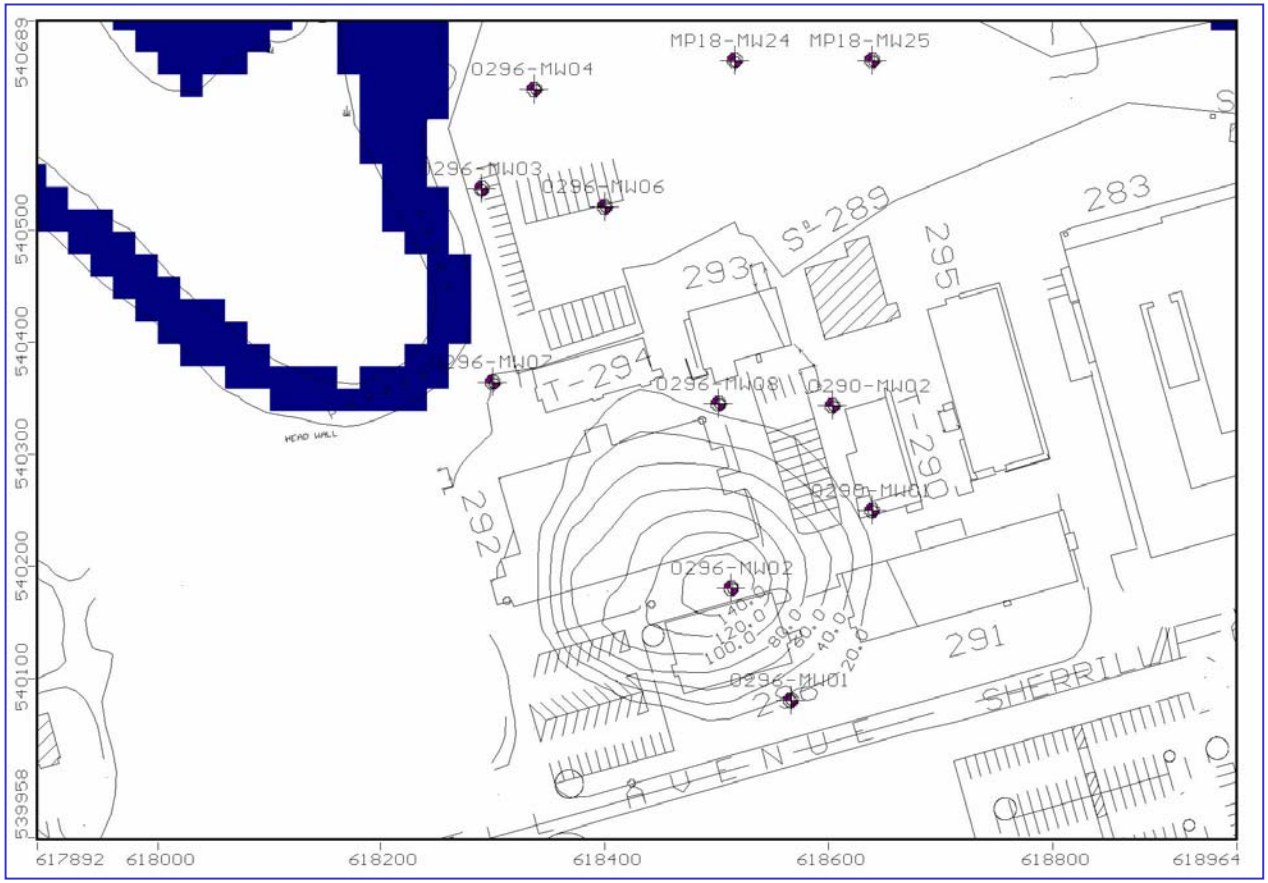


Notes:
1) NJDEP groundwater criteria for cadmium is 4.0 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-6b

Predicted Cadmium Concentration Versus Time
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

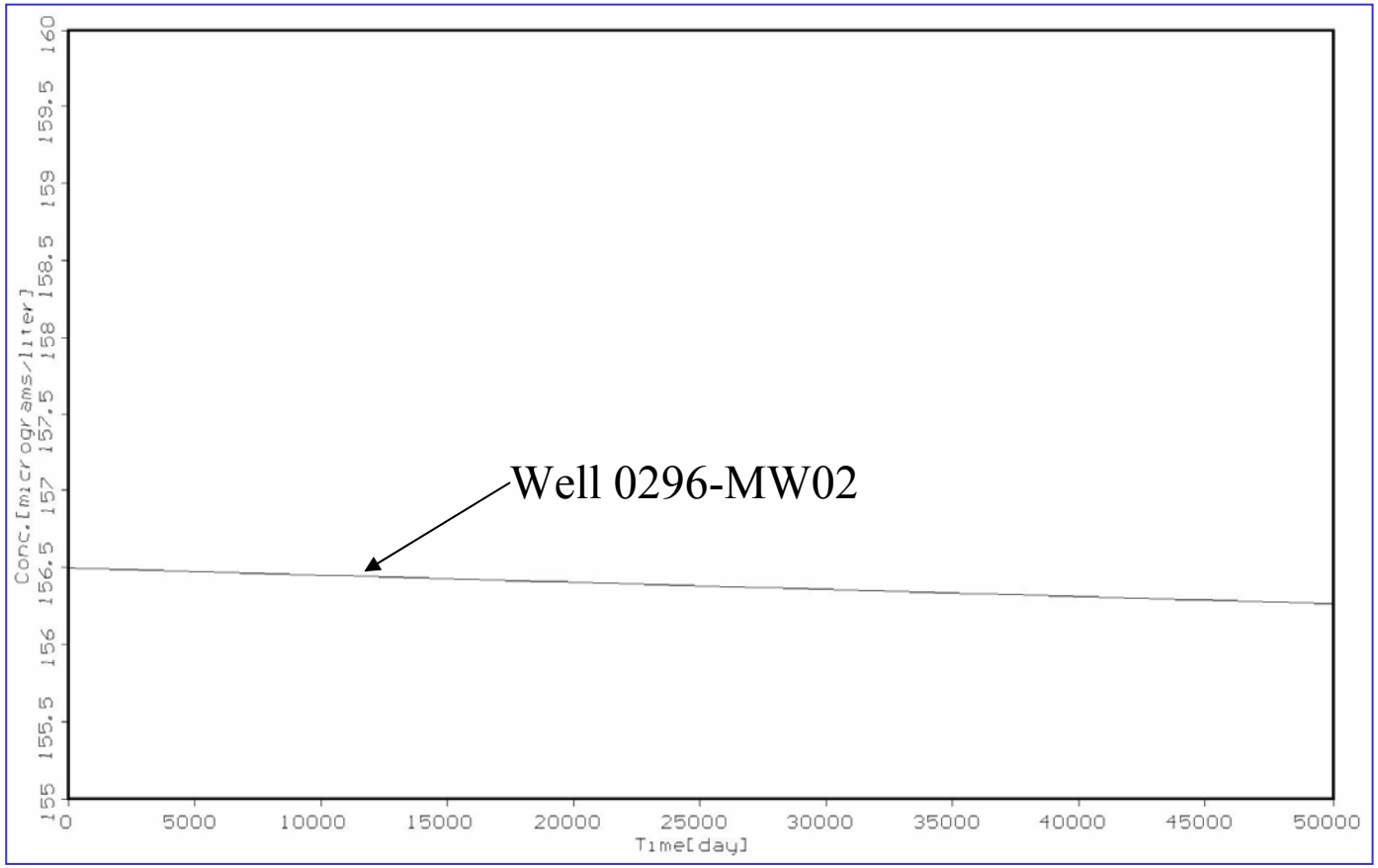


Notes:
1) Isoconcentration contours represent predicted chromium concentrations at 137 years.
2) Areas shaded blue represents Parkers Creek.
3) Monitoring wells are shown in purple.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-7a

Predicted Chromium Concentration
137 Years
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

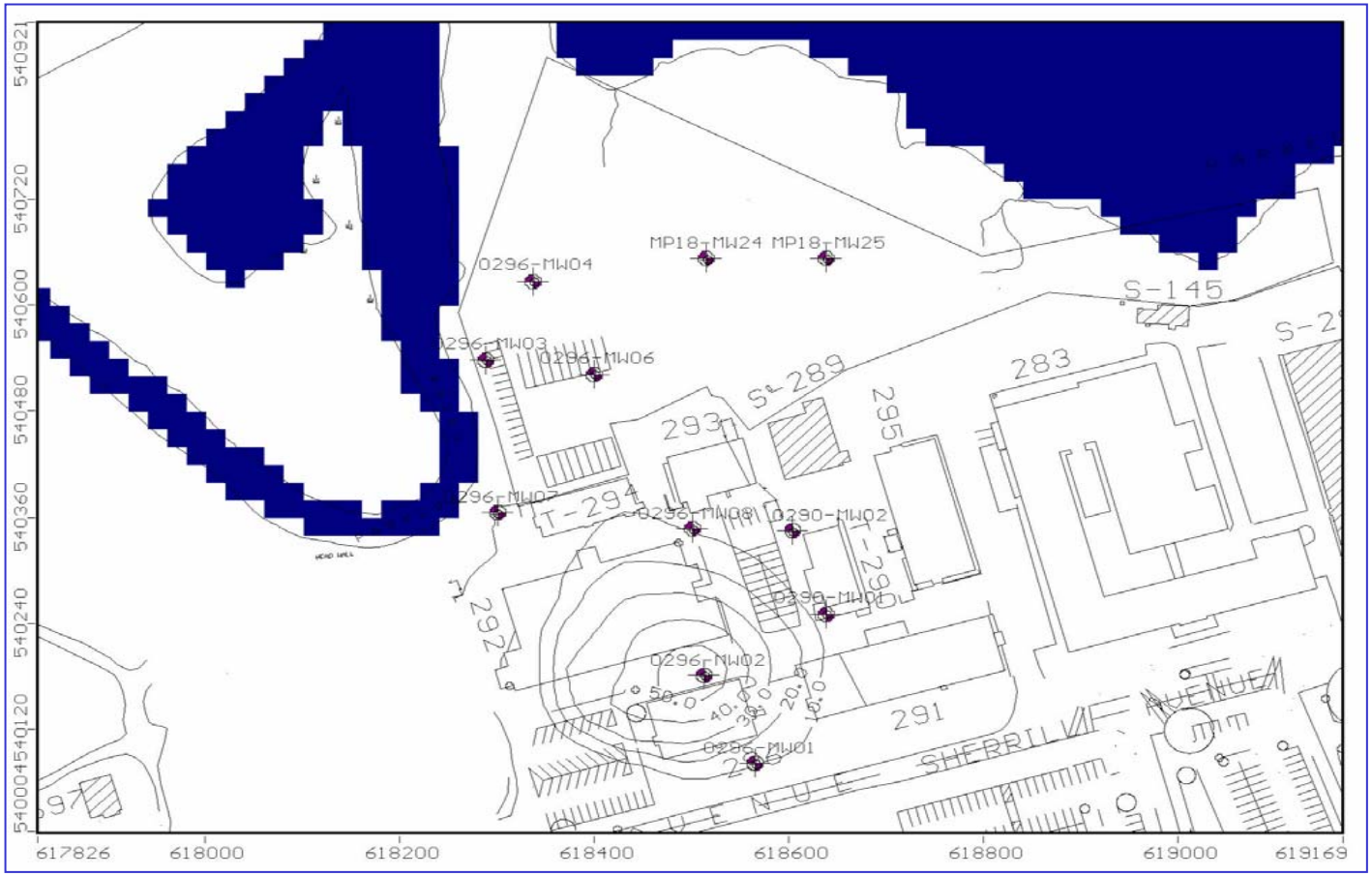


Notes:
1) NJDEP groundwater criteria for chromium is 100 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-7b

Predicted Chromium Concentration Versus Time
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

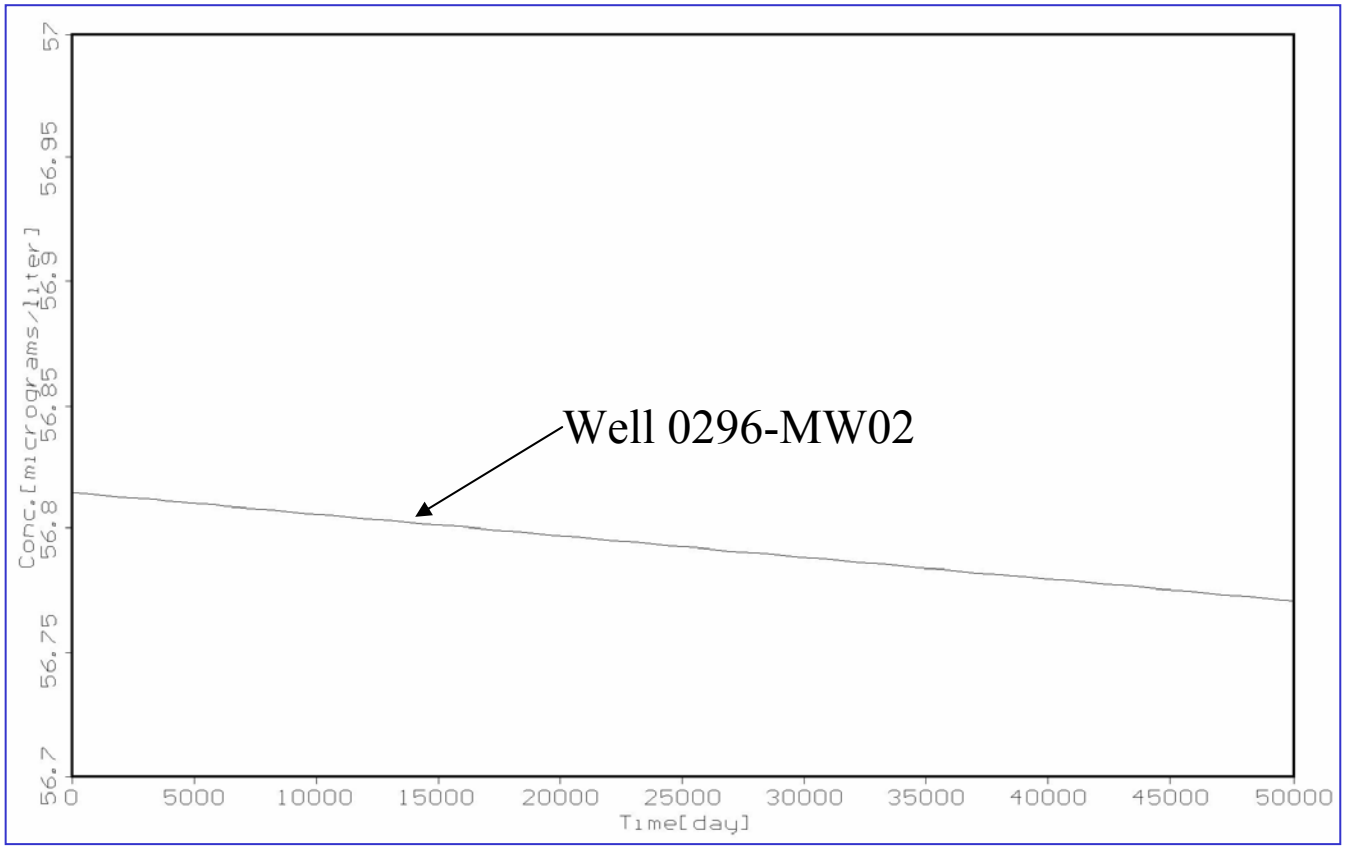


Notes:
1) Isoconcentration contours represent predicted lead concentrations at 137 years.
2) Areas shaded blue represents Parkers Creek.
3) Monitoring wells are shown in purple.
3) Coordinates shown represent NAD-83 survey feet.
4) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-8a

Predicted Lead Concentration
137 Years
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

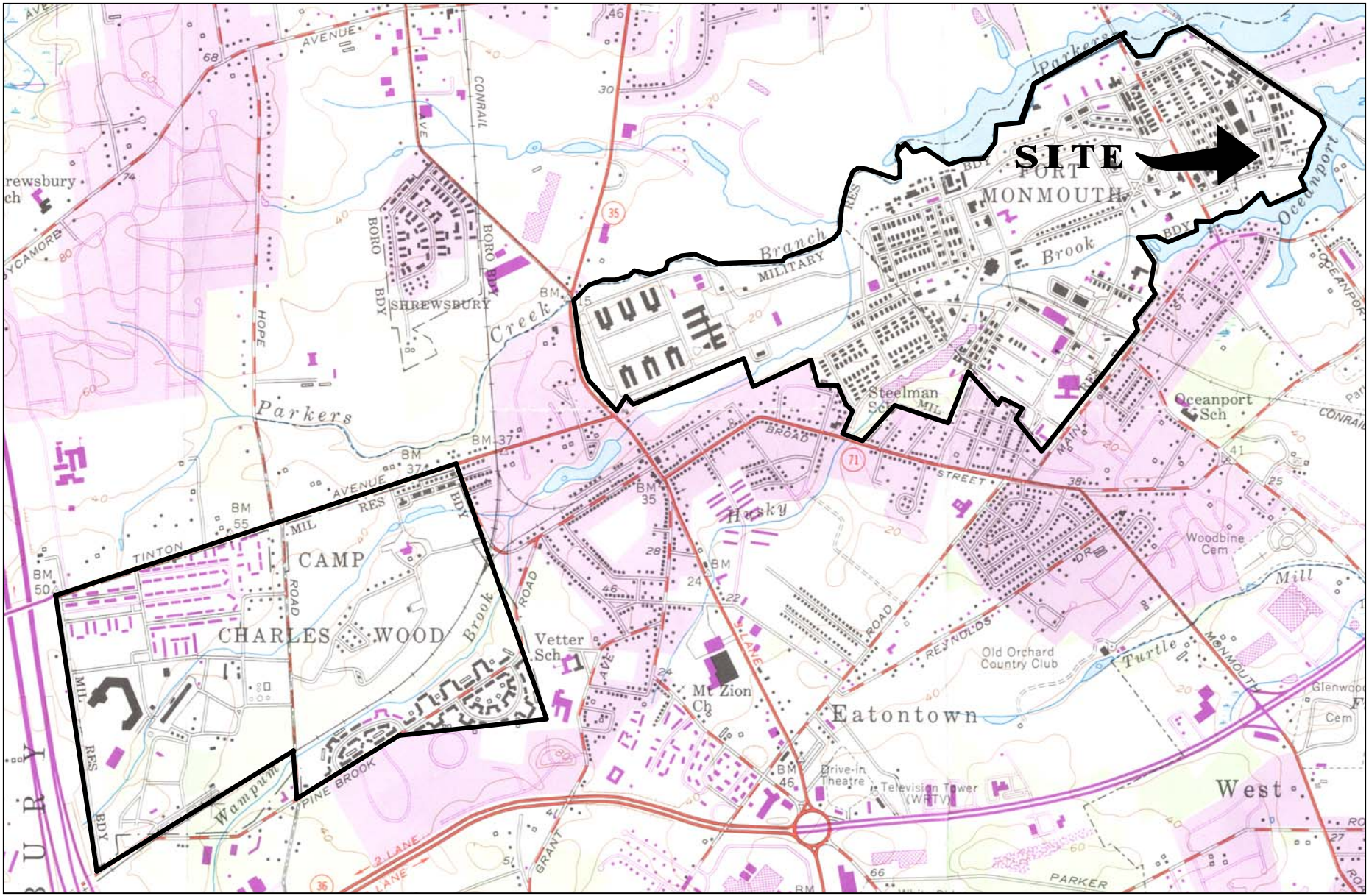


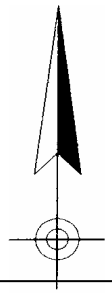
Notes:
1) NJDEP groundwater criteria for lead is 10 micrograms per liter (ug/L).
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: Visual MODFLOW Version 2.7.2, Waterloo Hydrogeologic, Inc.

FIGURE 4-8b

Predicted Lead Concentration Versus Time
M-18 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 5-1
Site Location Map
Site 80/166
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

= MONITORING WELL LOCATION

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 5-2
SITE MAP
SITE 80/166
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 02 JUL 01
CHECKED BY: TJK	DATE CHECKED: 02 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 5-2
	FILE No.: FIGURE 5-2
	SCALE: 1" = 60'
	SHEET 1 OF 1 REV.: A

Vet-Sall INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

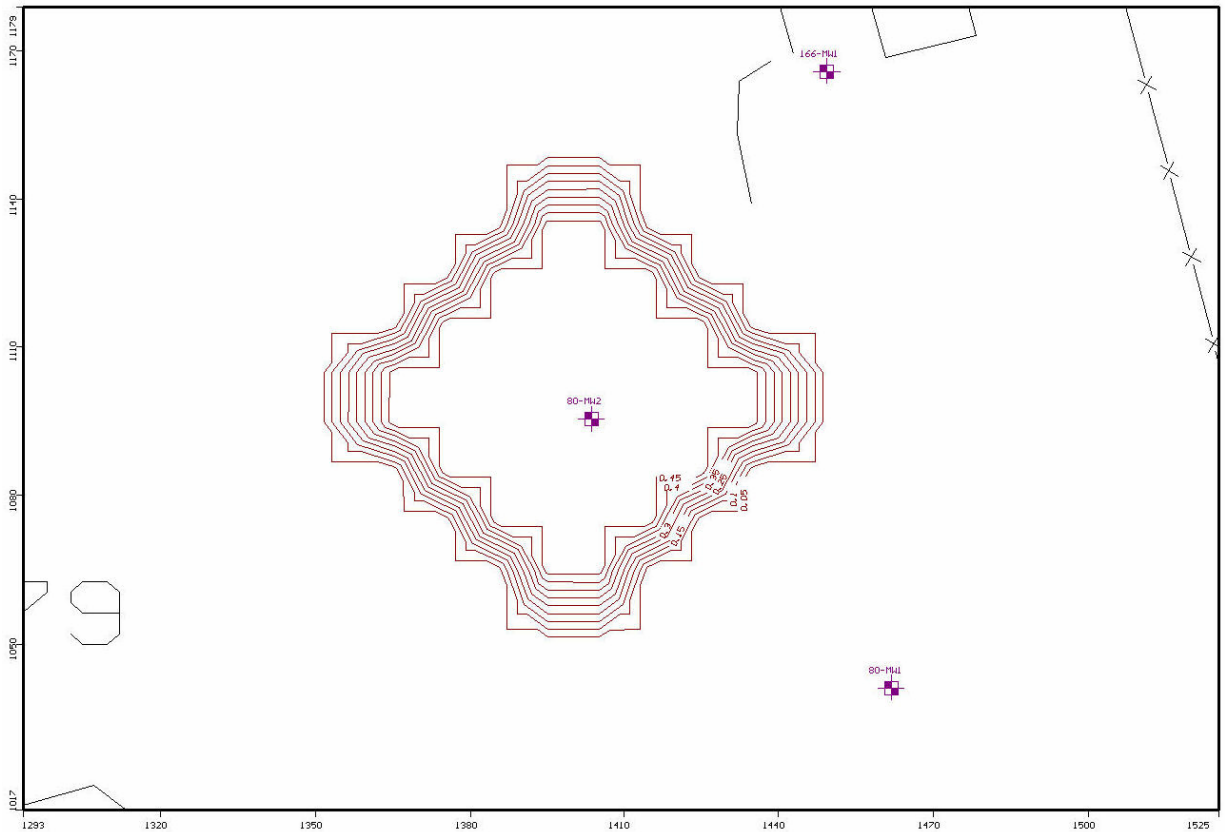
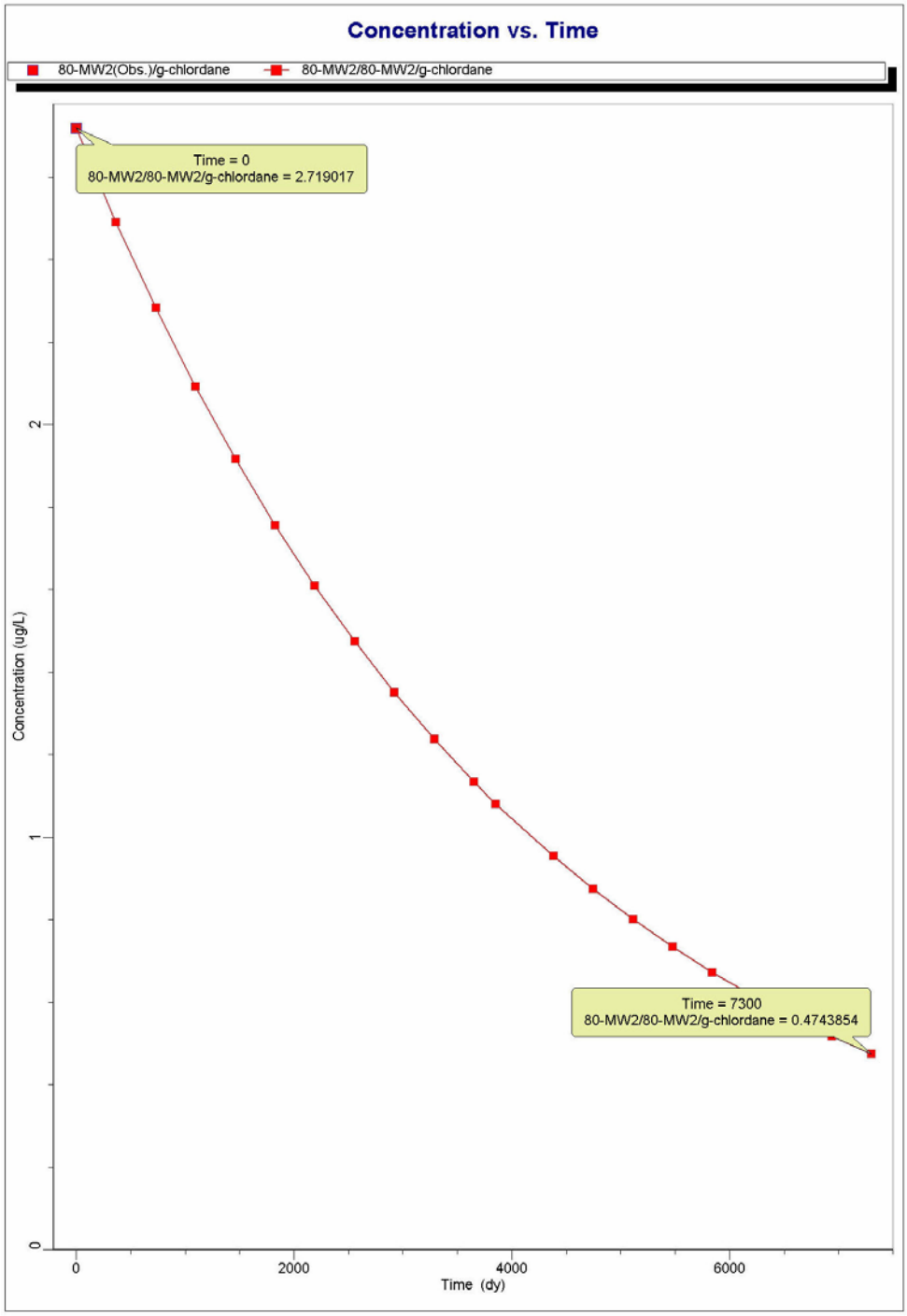


FIGURE 5-3a

Predicted g-Chlordane Concentration
20 Years
Site 80/166
Fort Monmouth, New Jersey

Notes:
1) Isoconcentration contours represent predicted g-chlordane concentrations at 20 years.
   Contour Interval = 0.05 ug/L
2) The NJDEP groundwater quality criteria for g-chlordane is 0.5 ug/L.
3) Monitoring wells for Site 80/166 are shown in purple.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



Notes:
1) NJDEP groundwater criteria for g-chlordane is 0.5 ug/L.
2) Time for compliance is estimated from this graph to be approximately 20 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 5-3b

Predicted g-Chlordane Concentration Versus Time
Site 80/166
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

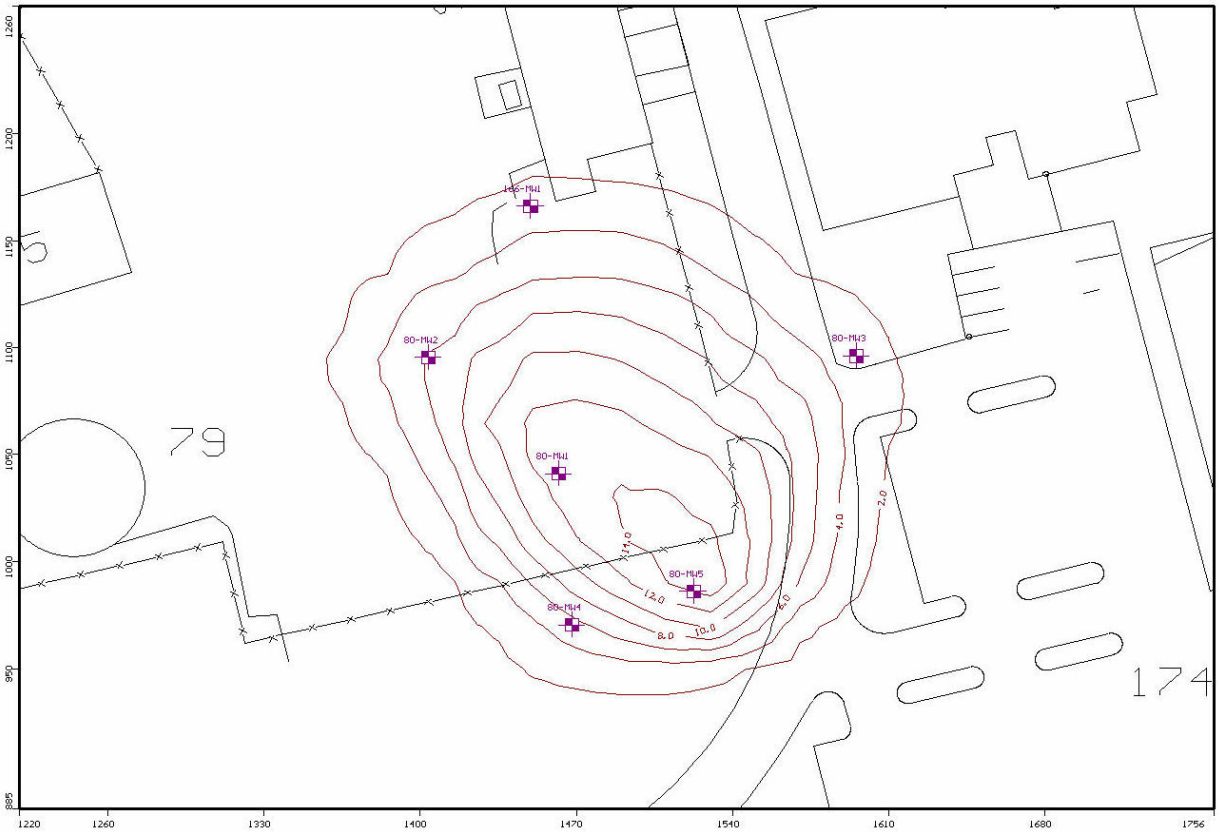


FIGURE 5-4a

Predicted Arsenic Concentration
20 Years
Site 80/166
Fort Monmouth, New Jersey

Notes:
1) Isoconcentration contours represent predicted arsenic concentrations at 20 years. Contour Interval = 2.0 ug/L.
2) The NJDEP groundwater quality criteria for arsenic is 8.0 ug/L.
3) Monitoring wells for Site 80/166 are shown in purple.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

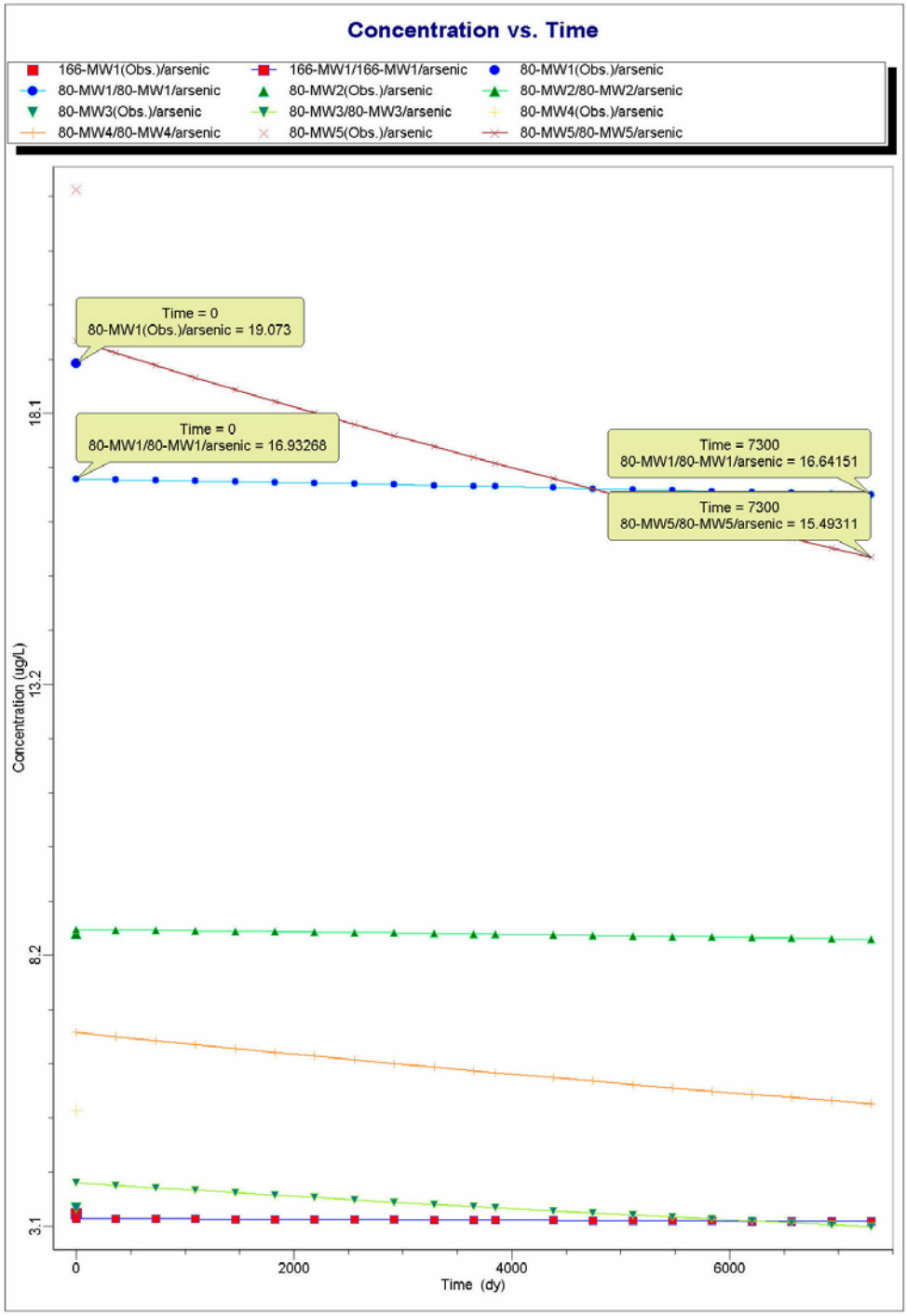
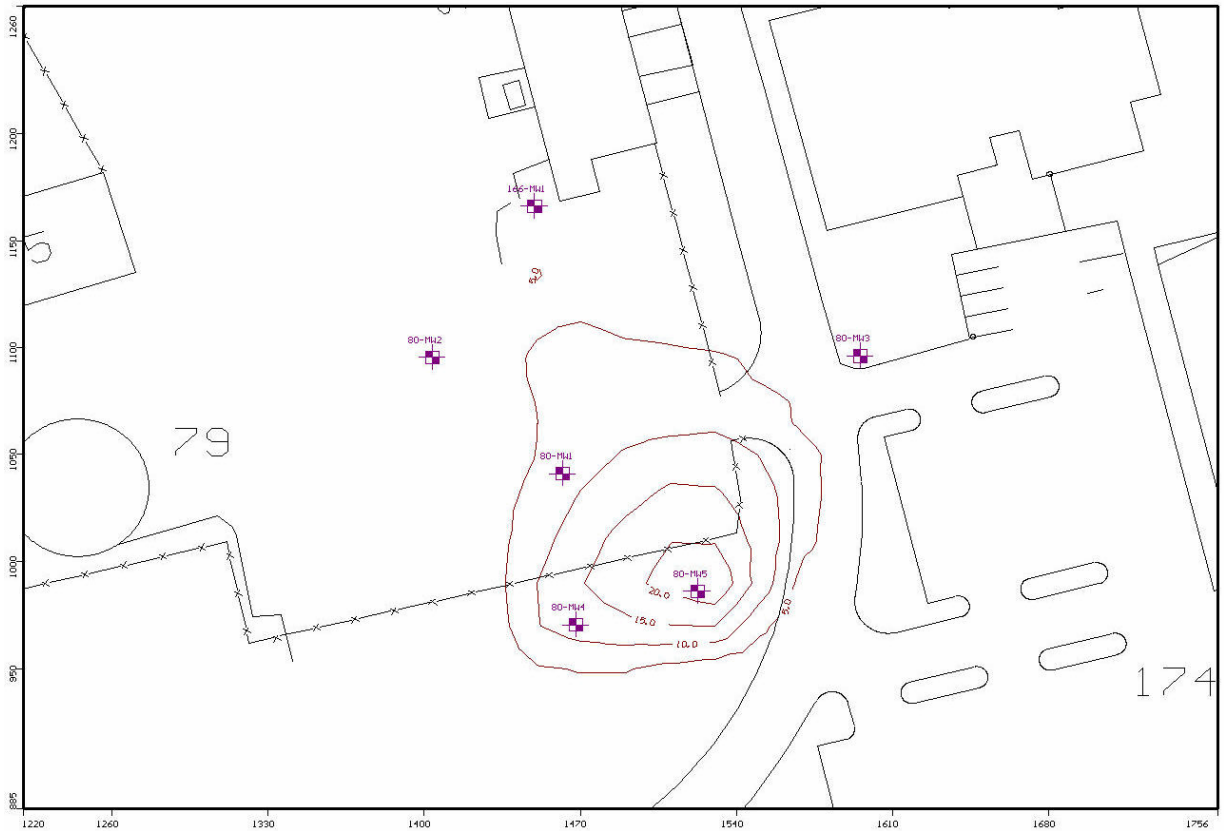


FIGURE 5-4b

Predicted Arsenic Concentration Versus Time
Site 80/166
Fort Monmouth, New Jersey

Notes:
1) NJDEP groundwater criteria for arsenic is 8.0 ug/L.
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



Notes:

1) Isoconcentration contours represent predicted lead concentrations at 20 years. Contour Interval = 5.0 ug/L.
2) The NJDEP groundwater quality criteria for arsenic is 10 ug/L.
3) Monitoring wells for Site 80/166 are shown in purple.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000

FIGURE 5-5a

Predicted Lead Concentration
20 Years
Site 80/166
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

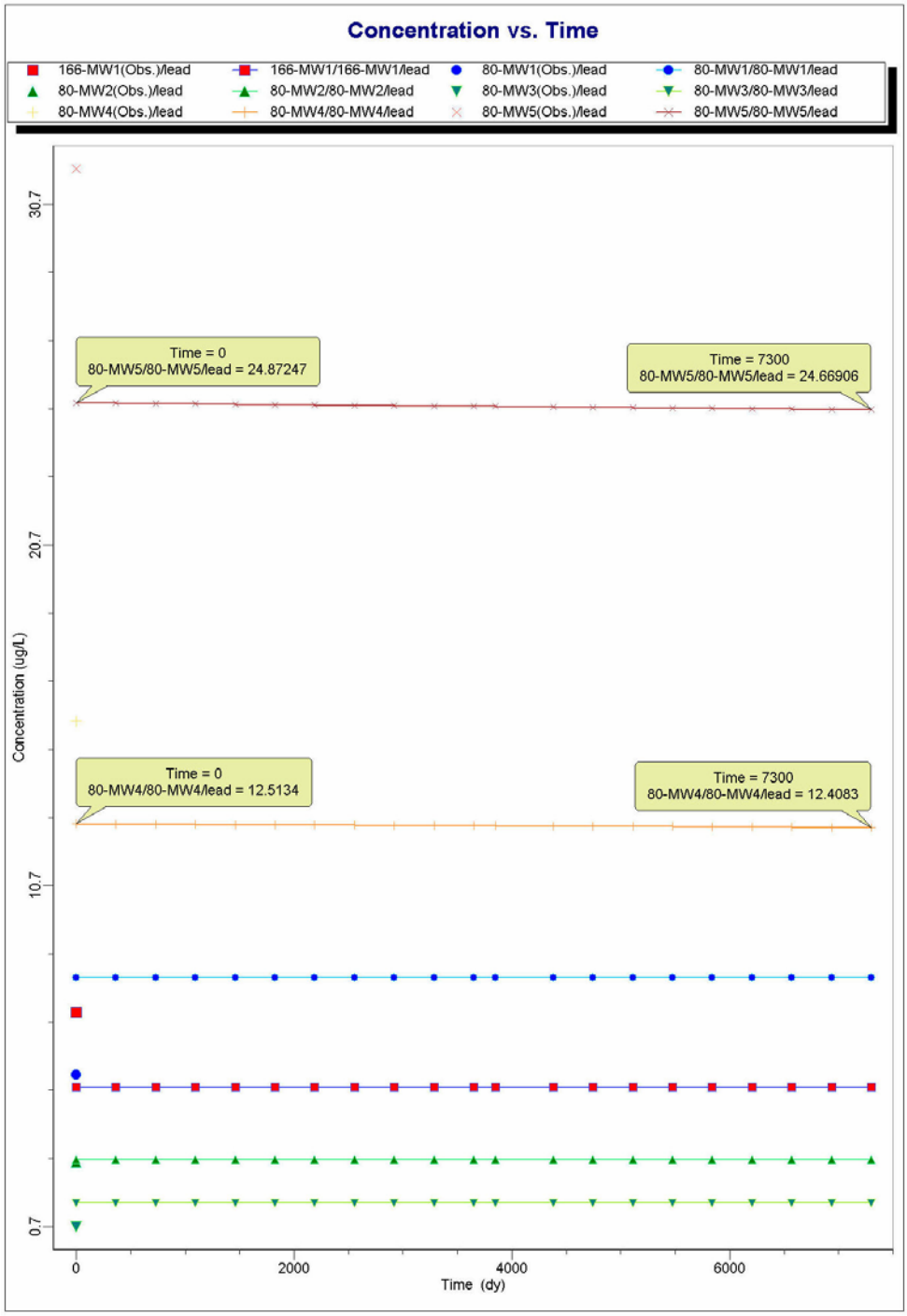
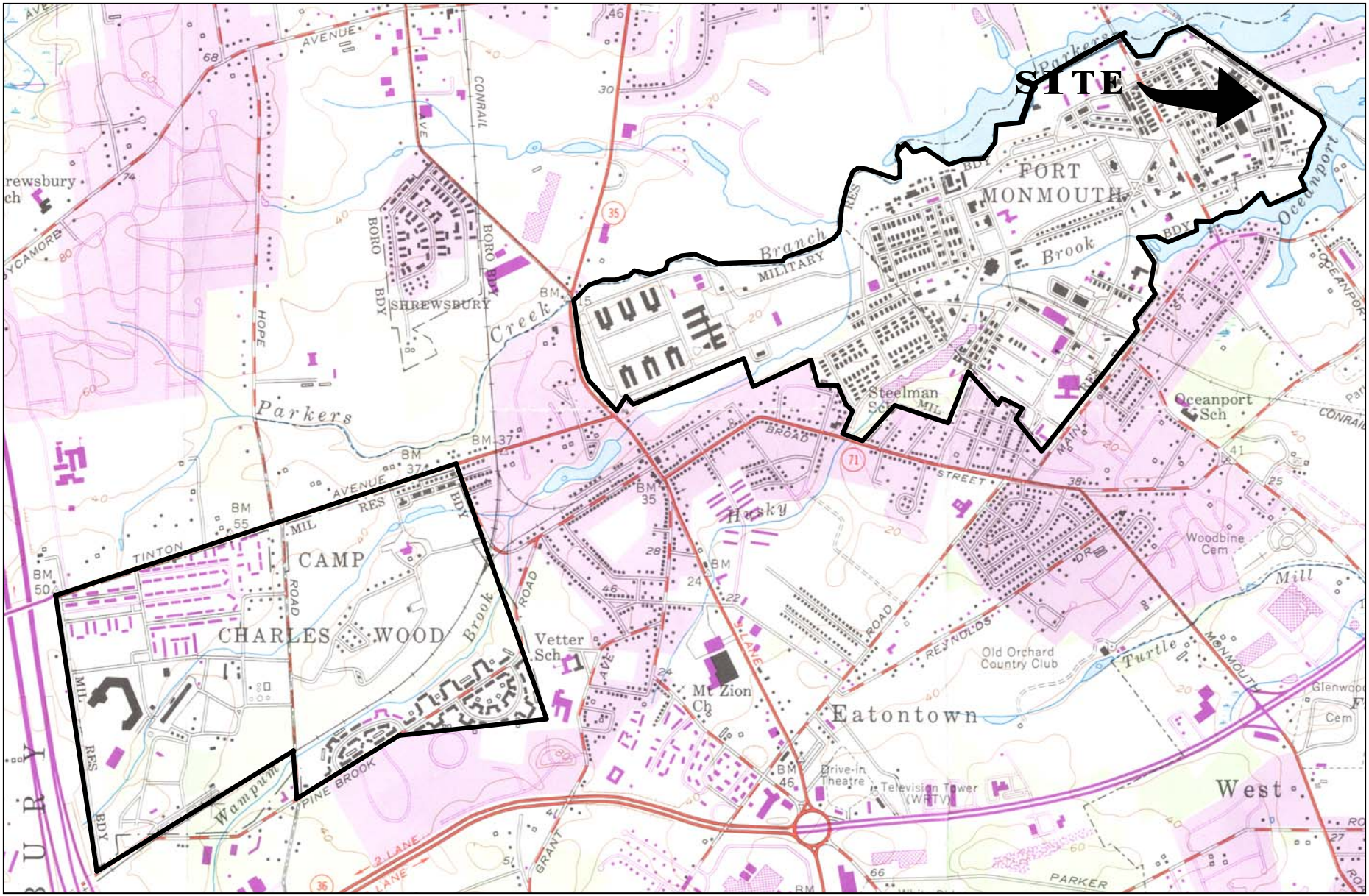


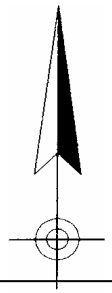
FIGURE 5-5b

Predicted Lead Concentration Versus Time Site 80/166 Fort Monmouth, New Jersey

Notes:
1) NJDEP groundwater criteria for lead is 10 ug/L.
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

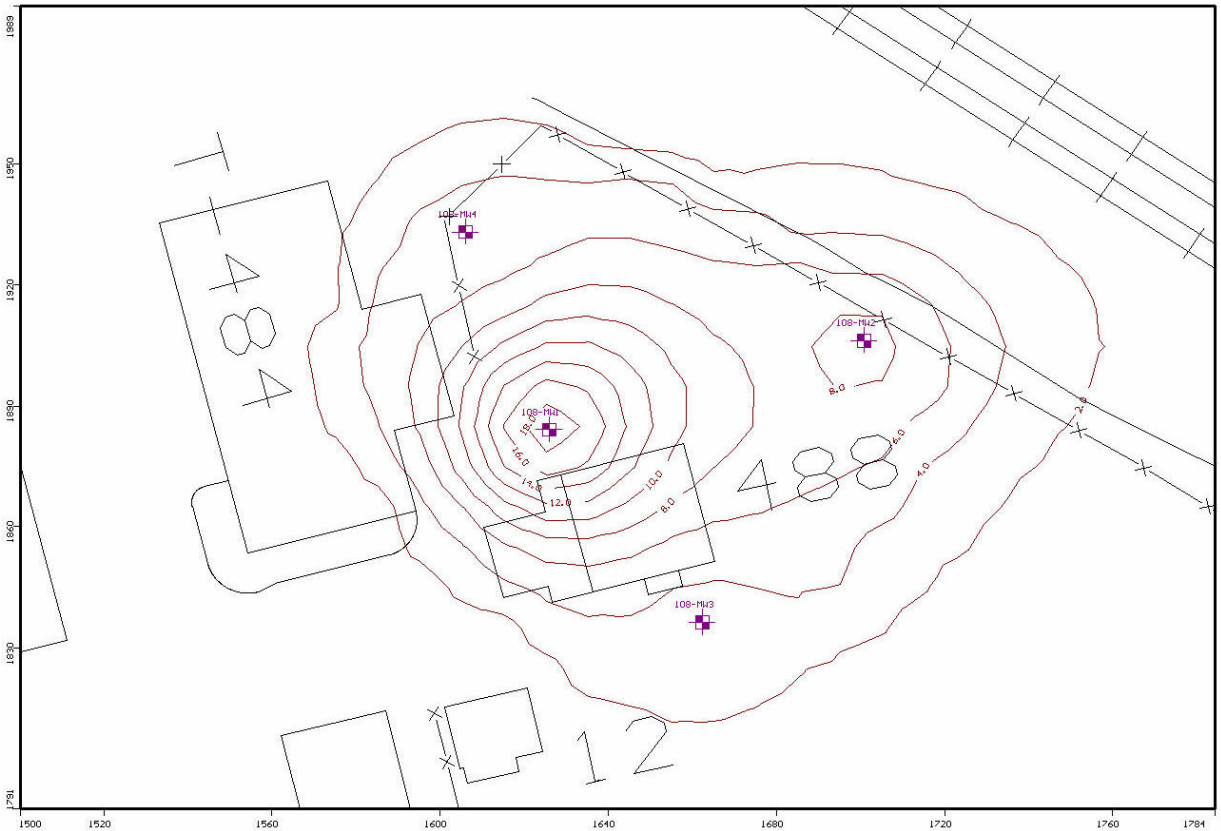
Mapped, edited and published by the Geological Survey

Figure 6-1
Site Location Map
Site 108
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



Notes:

1) Isoconcentration contours represent predicted arsenic concentrations at 10 years. Contour Interval = 2.0 ug/L.
2) The NJDEP groundwater quality criteria for arsenic is 8.0 ug/L.
3) Monitoring wells for Site 108 are shown in purple.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000

FIGURE 6-3a

Predicted Arsenic Concentration
10 Years
Site 108
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

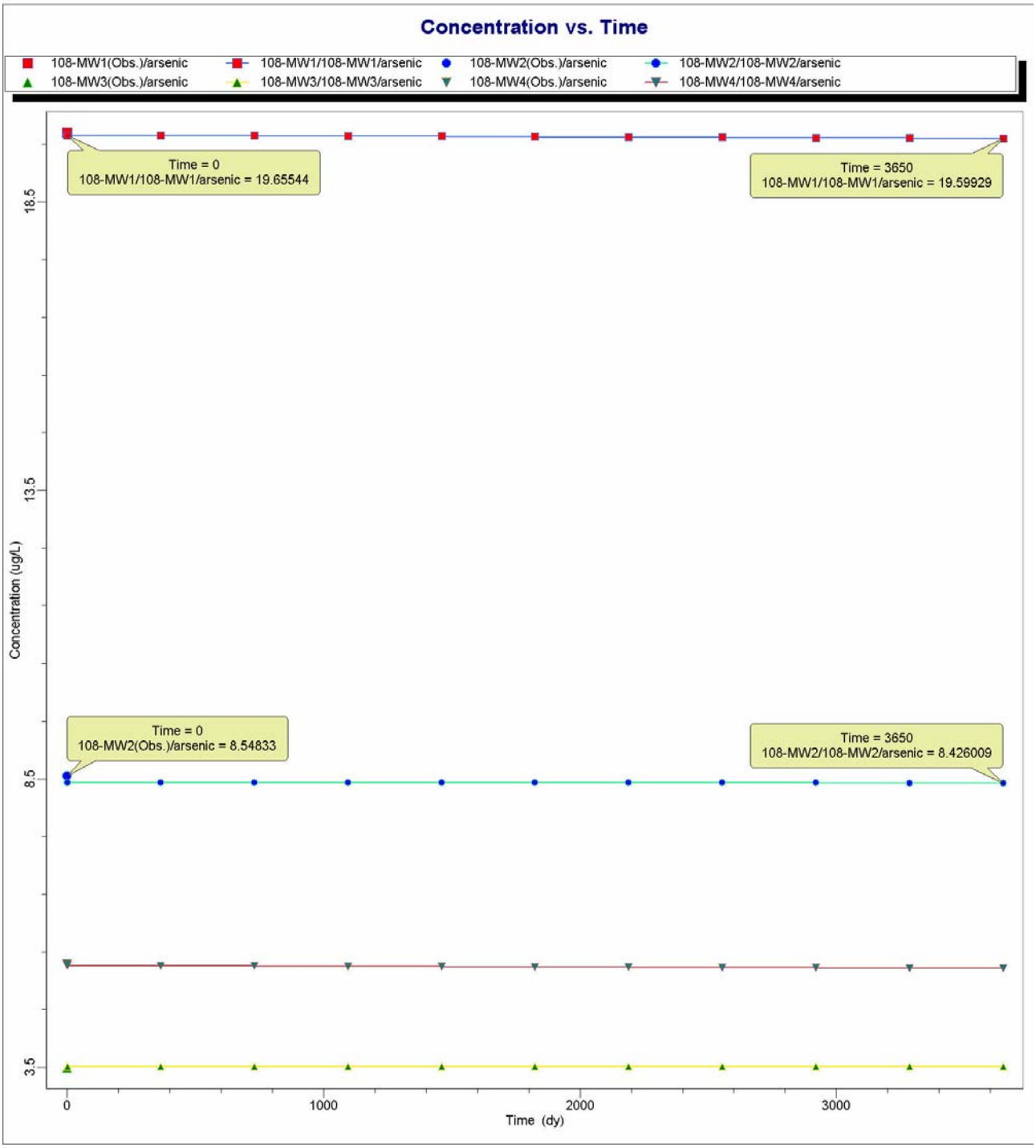
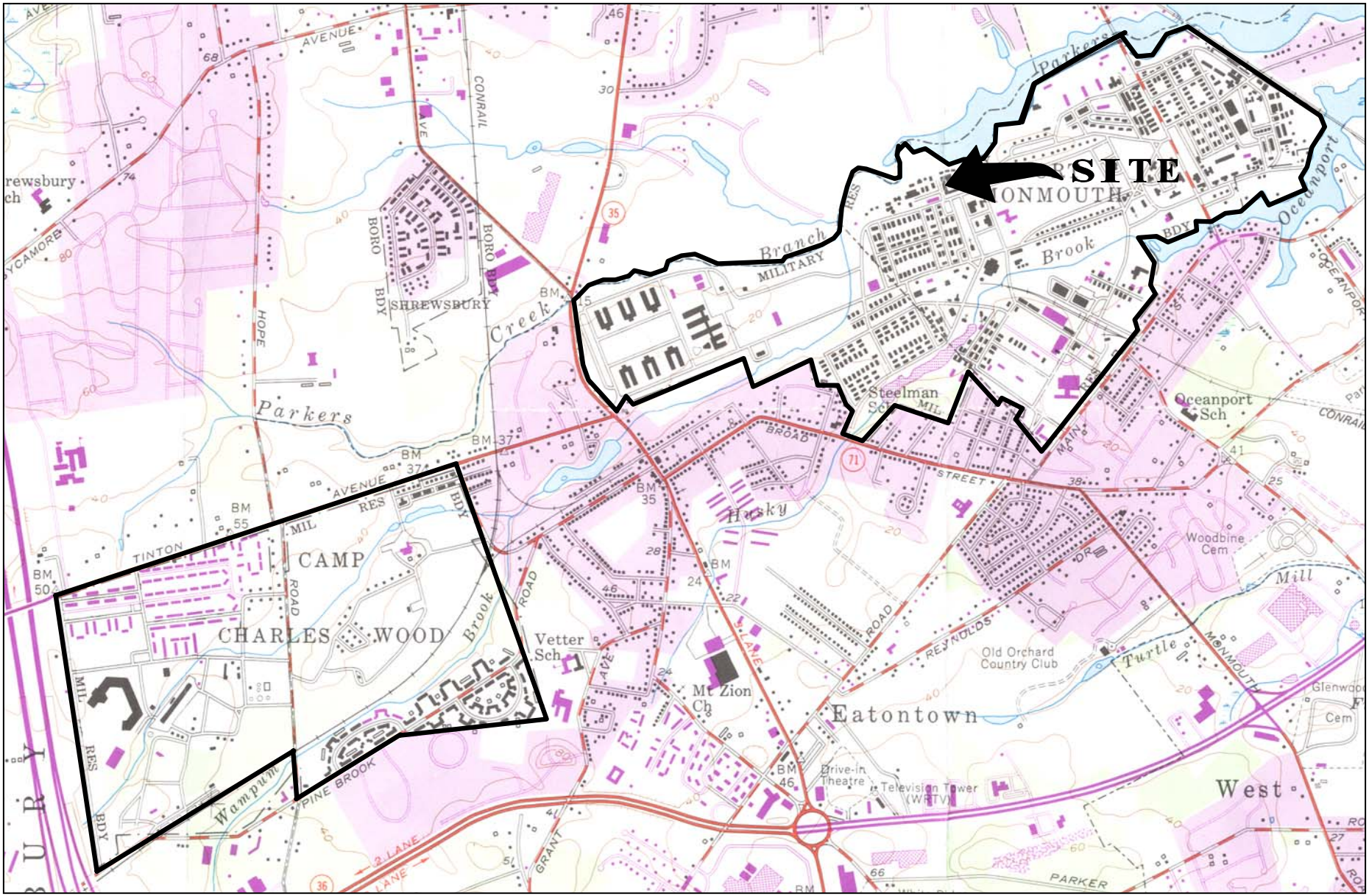


FIGURE 6-3b

Predicted Arsenic Concentration Versus Time
Site 108
Fort Monmouth, New Jersey

Notes:
1) NJDEP groundwater criteria for arsenic is 8.0 ug/L.
2) Time for compliance is estimated from this graph to be greater than 1,000 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



NEW JERSEY

QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

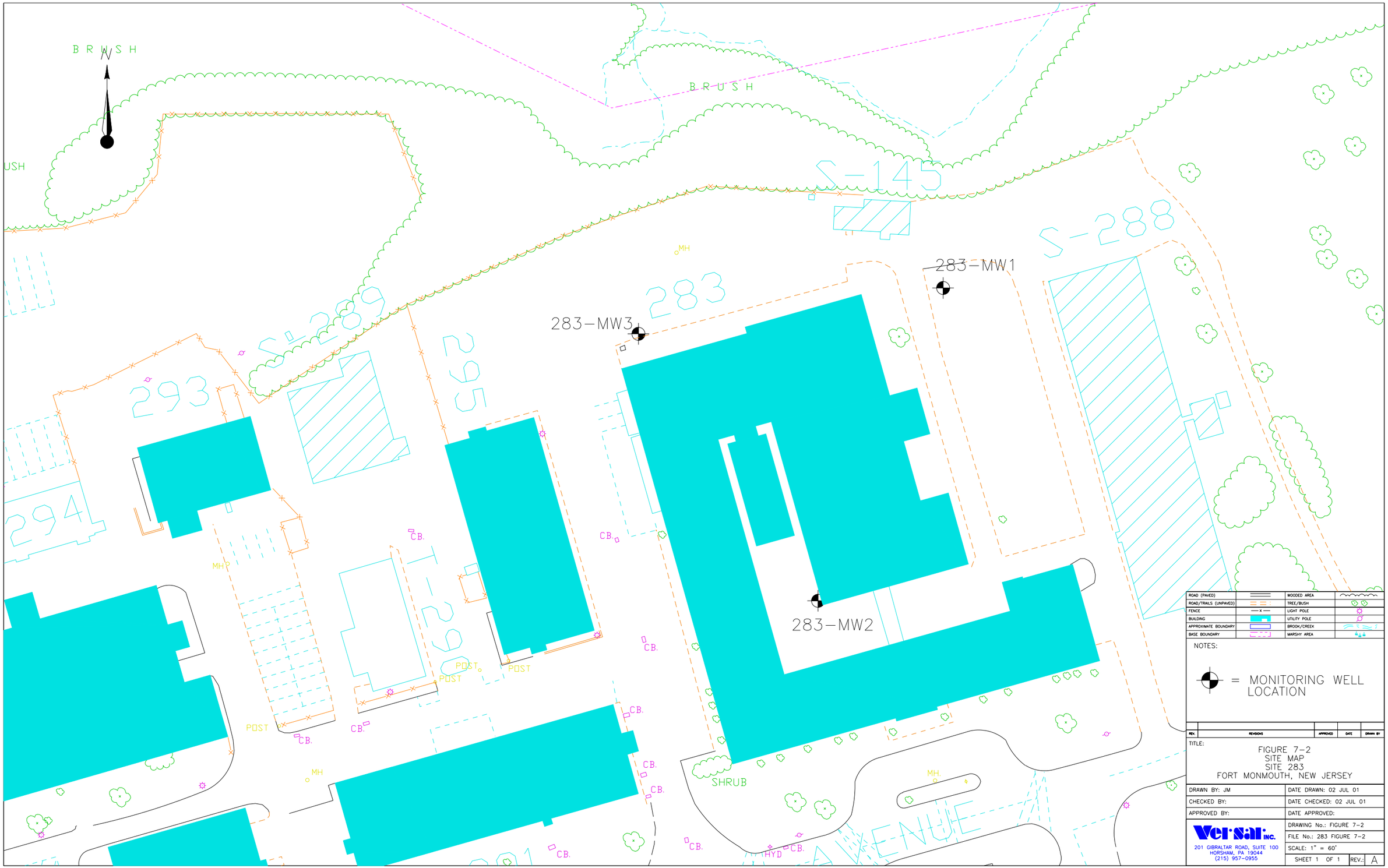
PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 7-1
Site Location Map
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

⊕ = MONITORING WELL LOCATION

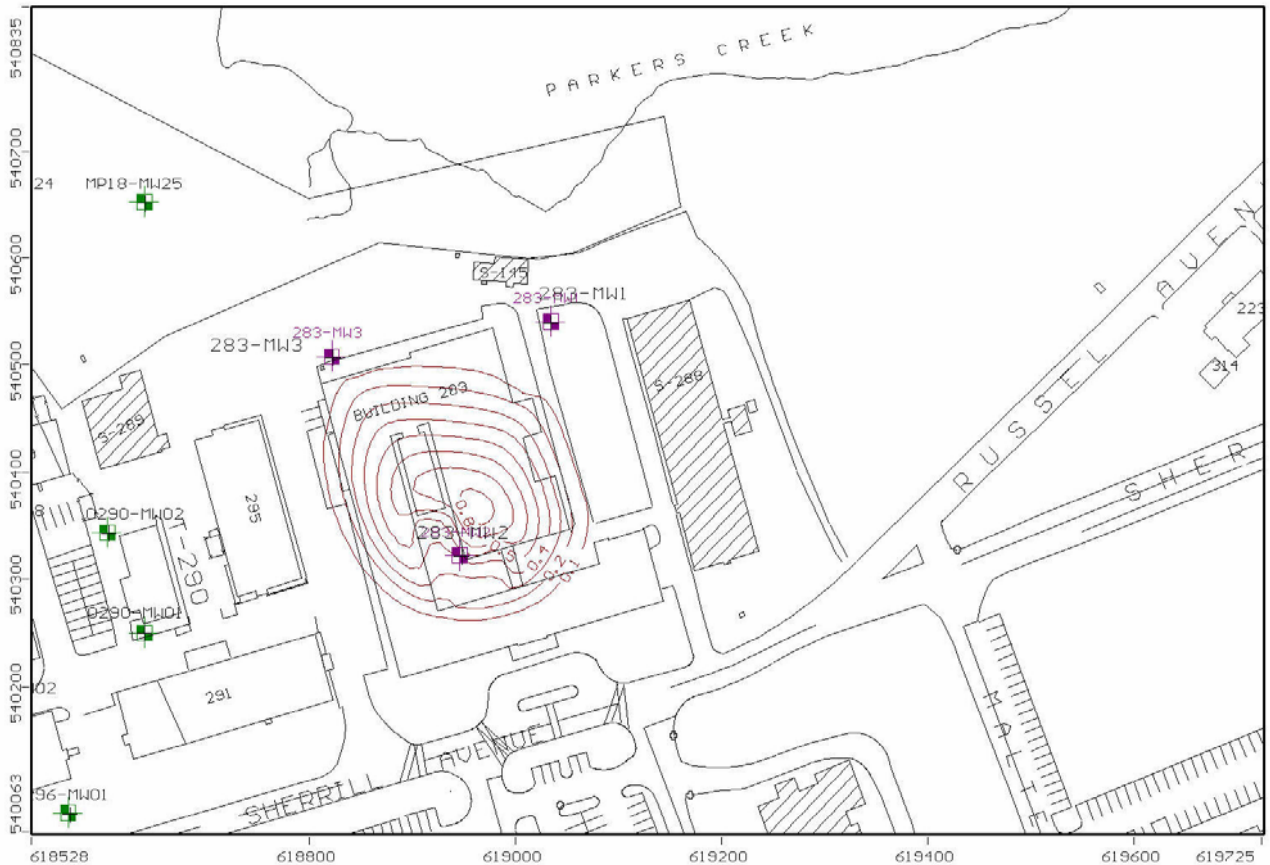
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 7-2
SITE MAP
SITE 283
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 02 JUL 01
CHECKED BY:	DATE CHECKED: 02 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 7-2
	FILE No.: 283 FIGURE 7-2
	SCALE: 1" = 60'
	SHEET 1 OF 1 REV.: A

Versar, Inc.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



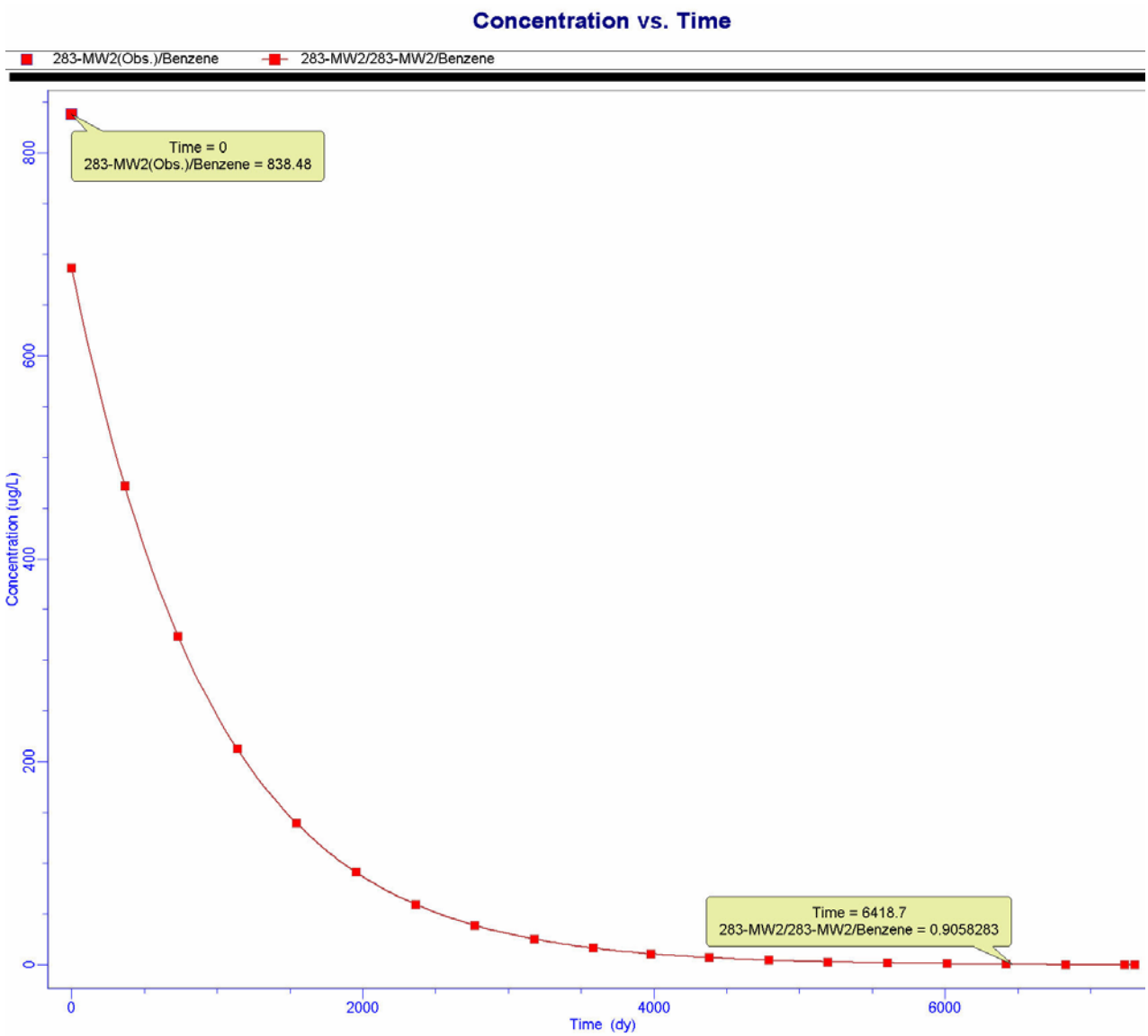
Notes:

1) Isoconcentration contours represent predicted benzene concentrations at 19 years for Layer 2 (depth of 10 feet below ground surface).
2) The NJDEP groundwater quality criteria for benzene is 1.0 ug/L.
3) Monitoring wells for Site 283 are shown in purple. Other monitoring wells are shown in green.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 7-3a

Predicted Benzene Concentration
19 Years – Map View
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

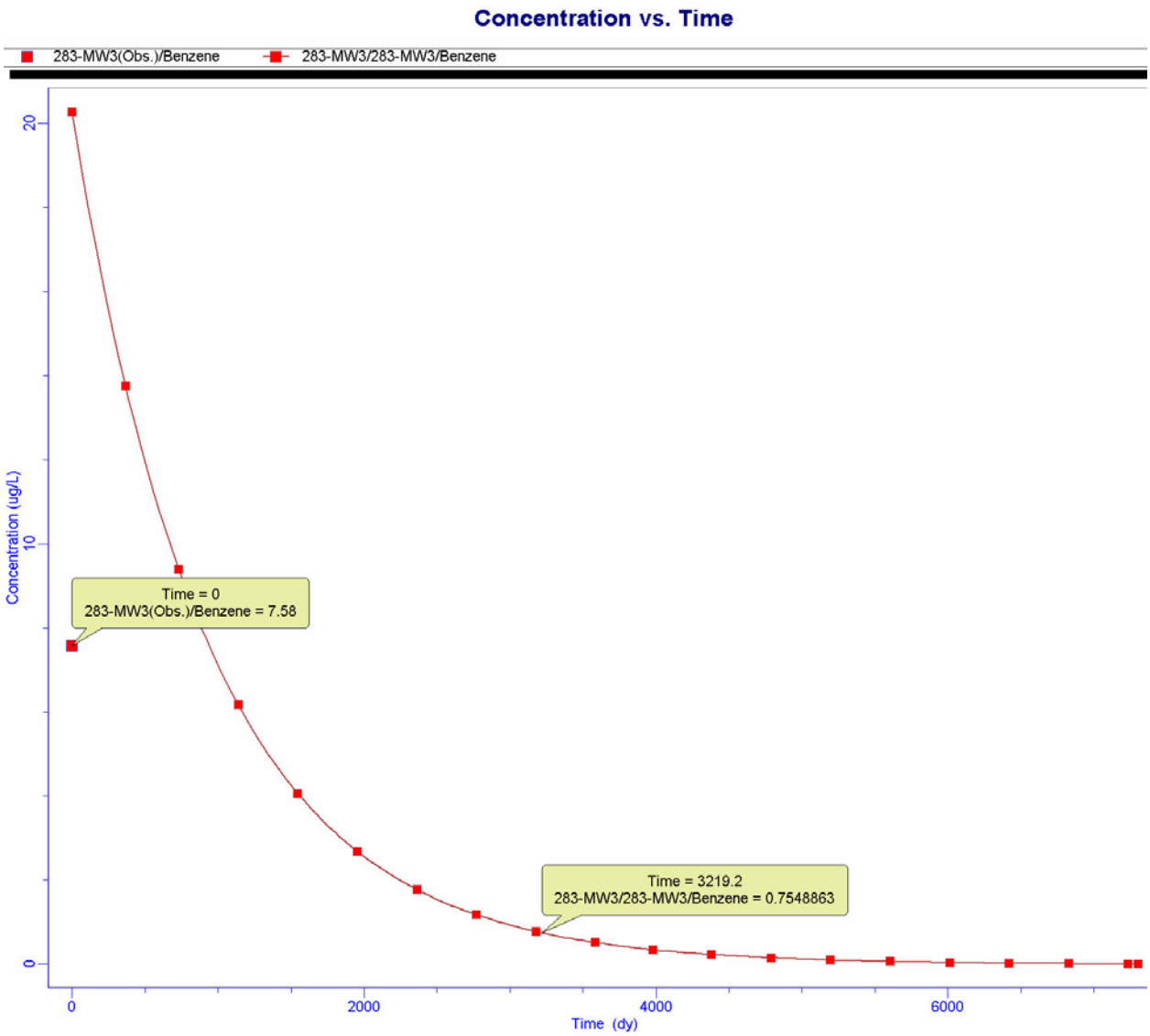


Notes:
1) NJDEP groundwater criteria for benzene is 1.0 ug/L.
2) Time for compliance is estimated from this graph to be approximately 17.6 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 7-3b

Predicted Benzene Concentration Versus Time at Well 283-MW2
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

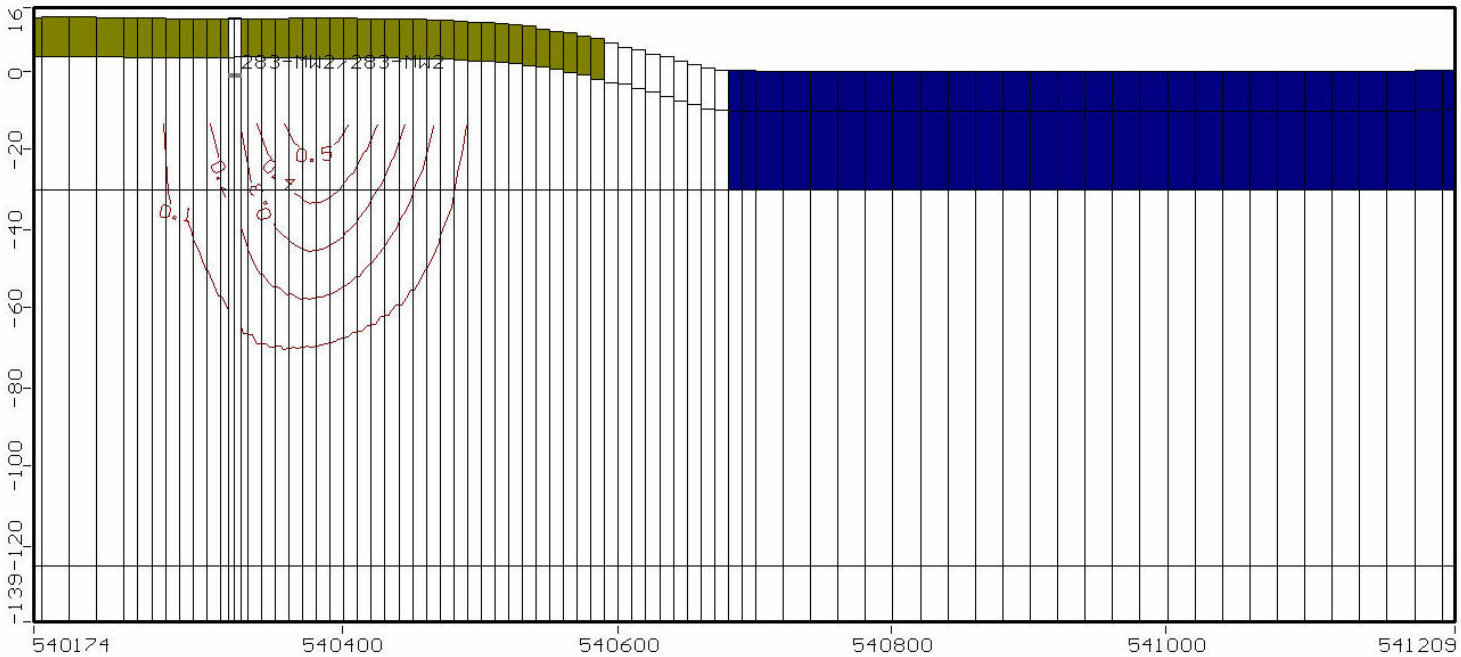


Notes:
1) NJDEP groundwater criteria for benzene is 1.0 ug/L.
2) Time for compliance at well 283-MW3 was estimated to be approximately 8.8 years.
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 7-3c

Predicted Benzene Concentration Versus Time at Well 283-MW3
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



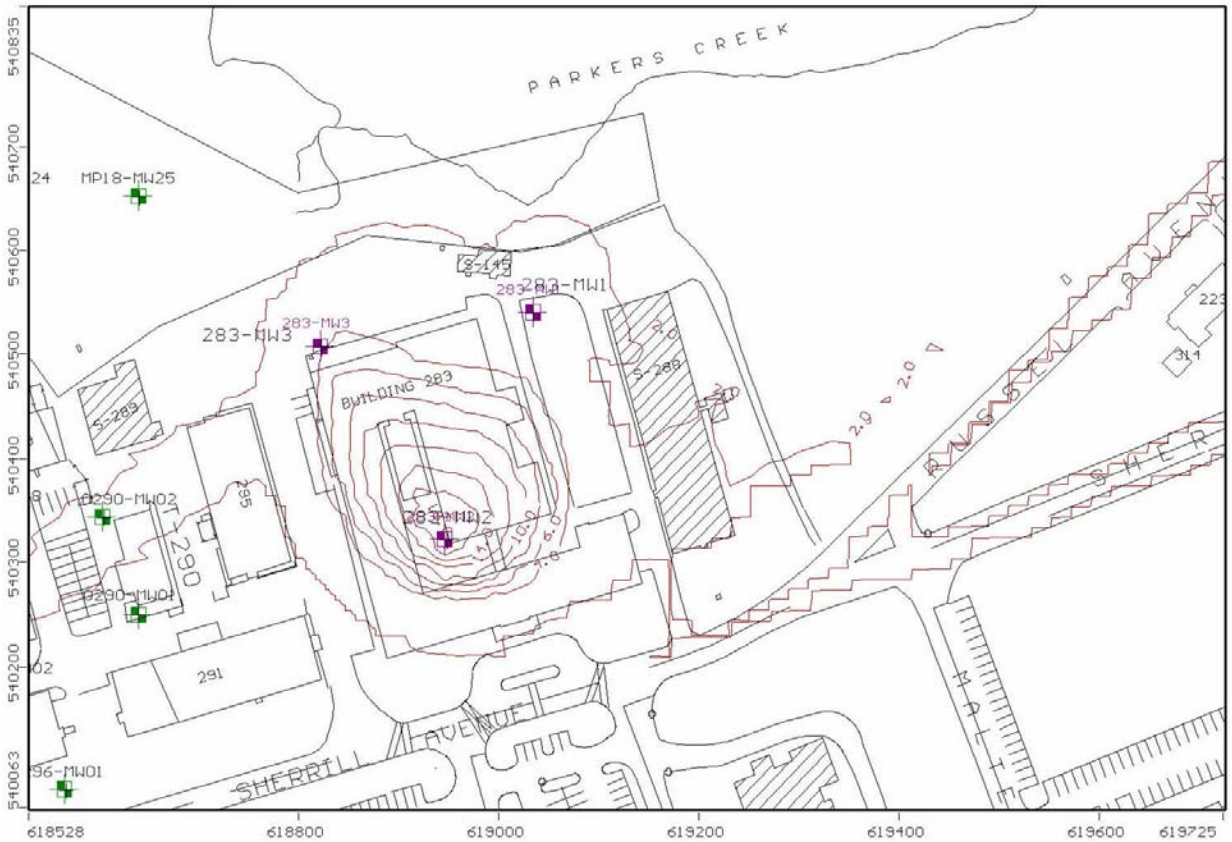
Notes:

1) Isoconcentration contours represent predicted benzene concentrations at 19 years in cross-section view (through well 283-MW2).
2) The NJDEP groundwater quality criteria for benzene is 1.0 ug/L.
3) Grid cells representing Parkers Creek shown in blue.
4) Grid cells that are dry are shown as olive-green.
5) Coordinates shown represent NAD-83 survey feet.
6) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 7-3d

Predicted Benzene Concentration
19 Years – Cross Section View
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



Notes:
1) Isoconcentration contours represent predicted lead concentrations at 20 years.
2) The NJDEP groundwater quality criteria for lead is 10 ug/L.
3) Monitoring wells for Site 283 are shown in purple. Other monitoring wells are shown in green.
4) Coordinates shown represent NAD-83 survey feet.
5) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

FIGURE 7-4a

Predicted Lead Concentration
At 20 Years
Site 283
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

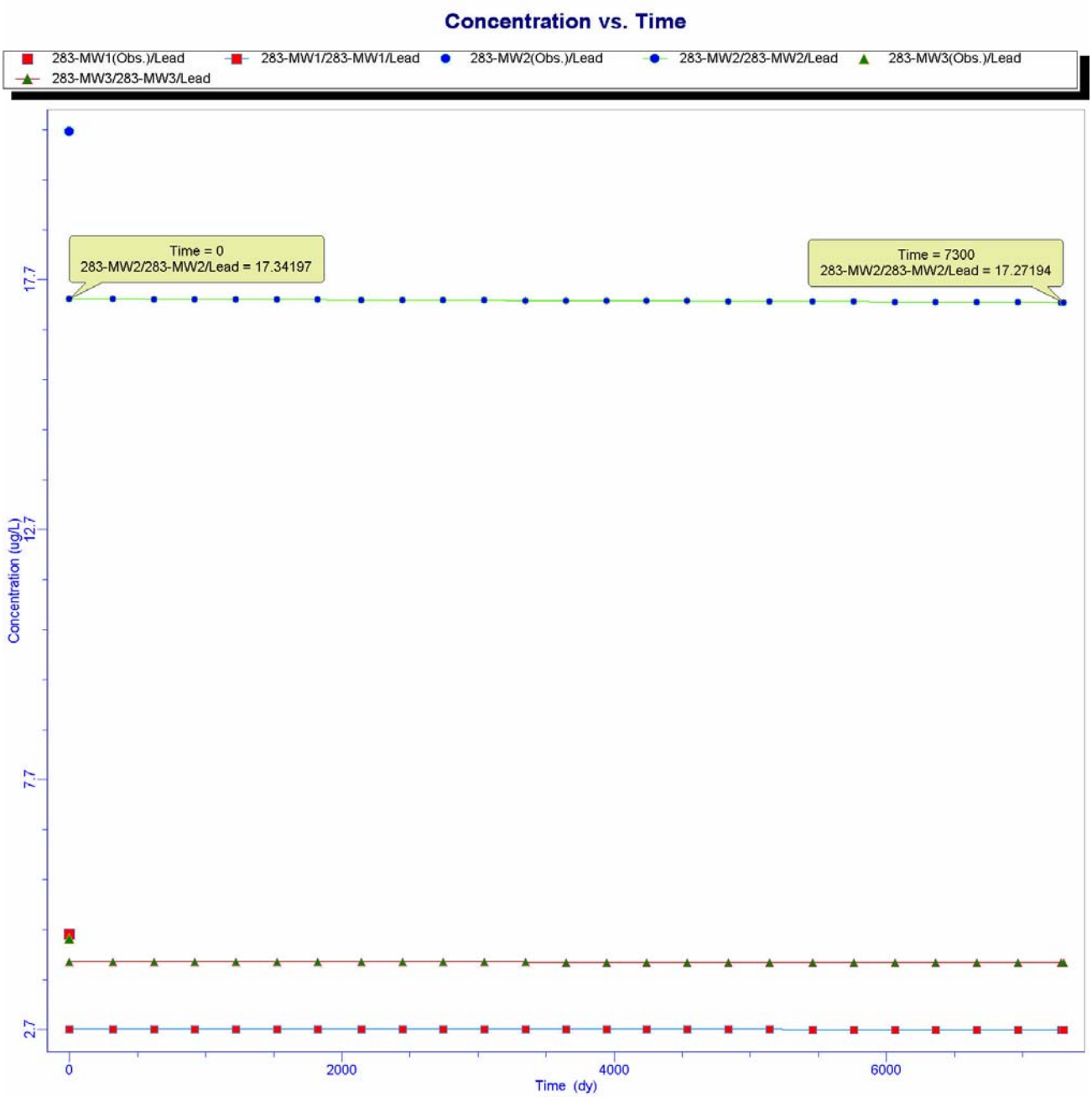
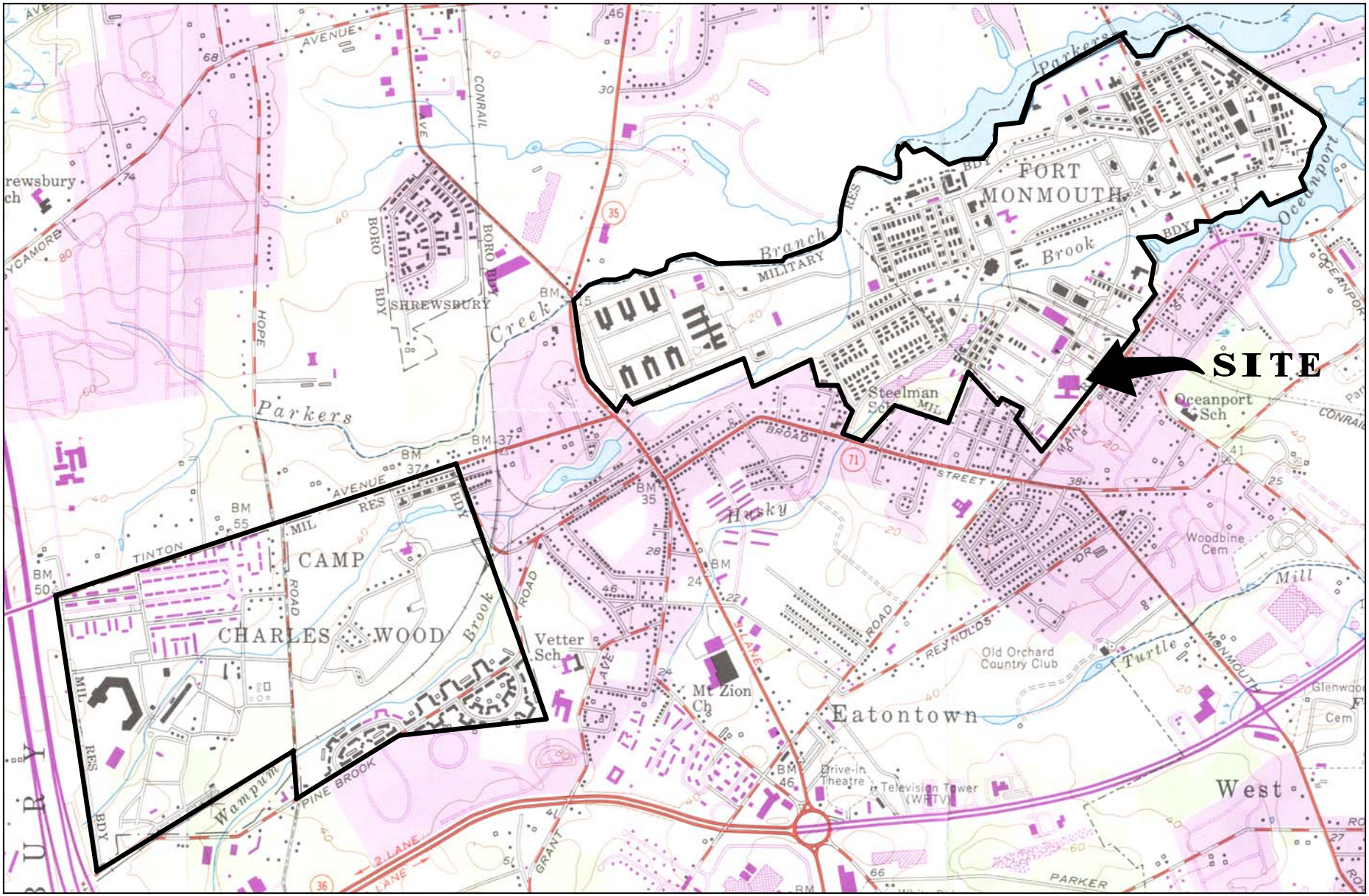


FIGURE 7-4b

Predicted Lead Concentration Versus Time at Well 283-MW2
Site 283
Fort Monmouth, New Jersey

Notes:
1) NJDEP groundwater criteria for lead is 10 ug/L.
2) Time for compliance at well 283-MW2 was undetermined in the MODFLOW simulation (greater than 1,000 years).
3) Modeling Software: *Visual MODFLOW Version 2.8.2*, Waterloo Hydrogeologic, Inc., 2000.

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



NEW JERSEY

QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

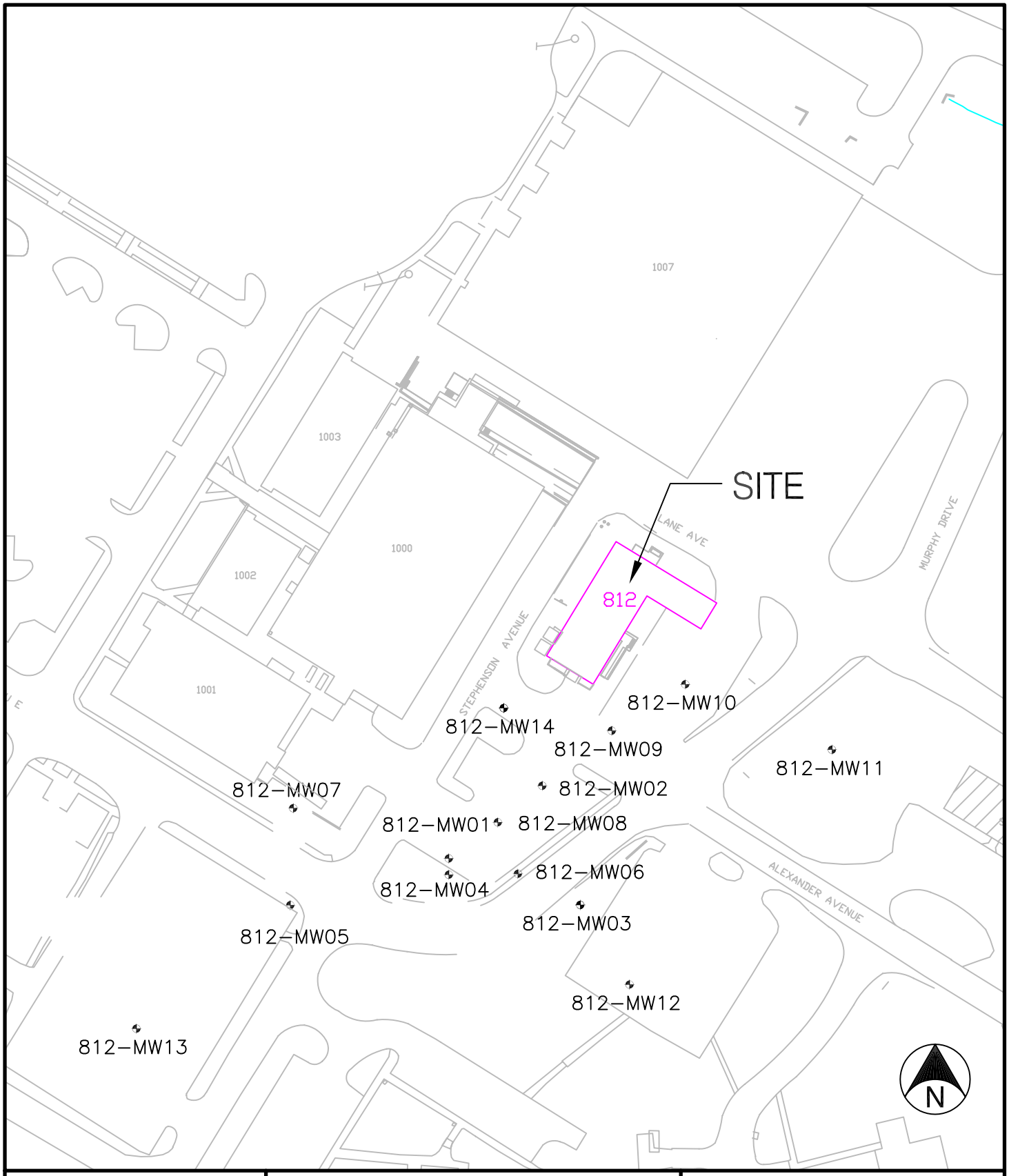
PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 8-1
Site Location Map
Site 812
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



Versar INC.
ARCHITECTURE • ENGINEERING • CONSTRUCTION
201 GIBRALTAR ROAD, SUITE 100, HORSHAM, PA 19044
TEL: 215.957.0955 FAX: 215.957.0497

FIGURE 8–2
SITE MAP

SITE 812
FORT MONMOUTH, NEW JERSEY

CLIENT NO.: 110571.0571.308	
DRAWING REF. NO.: 202	
SCALE 1:100	DATE: 17–APR–03
REVISION 0	SKETCH NO. B-2

N

812–MW14
812–MW10
812–MW09
812–MW11
812–MW02
812–MW08
812–MW07
812–MW01
812–MW04
812–MW06
812–MW05
812–MW03
812–MW12
812–MW13

MH
HYD
CB
CB.

GROUNDWATER FLOW DIRECTION

80 0 80
scale feet

LEGEND

VOC	NJDEP GWQC
1,1,1–TRICHLOROETHANE (1,1,1–TCA)	30 ug/L

812–MW04 ⊗ MONITORING WELL LOCATION

ESTIMATED/MODELED MAXIMUM EXTENT OF 1,1,1–TCA PLUME

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 8–3
PREDICTED 1,1,1–TRICHLOROETHANE PLUME
SITE 812
FORT MONMOUTH, NEW JERSEY

DRAWN BY:	DATE DRAWN: 10 OCT 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIG 8-3
	FILE No.: FIG 8-3
	SCALE: 1" = 60'
	SHEET OF REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957–0955

N

812–MW14
812–MW10
812–MW09
812–MW11
812–MW02
812–MW07
812–MW08
812–MW01
M812–MW04
812–MW06
812–MW05
812–MW03
812–MW12
812–MW13

MH
HYD
CB.
CB
GROUNDWATER FLOW DIRECTION

LEGEND

VOC	NJDEP GWQC
BENZENE	1 (ug/L)

812–MW04 MONITORING WELL LOCATION

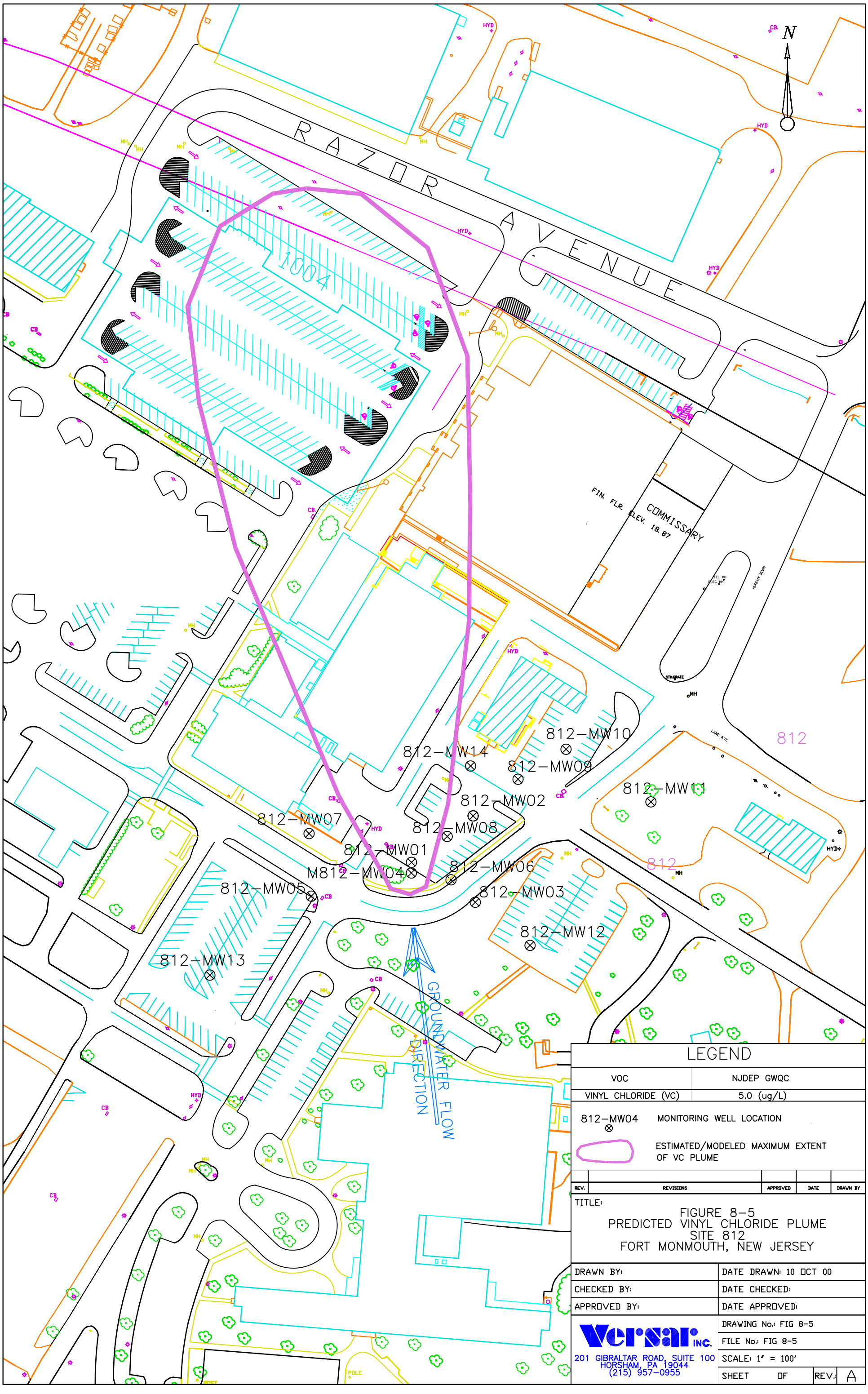
ESTIMATED/MODELED MAXIMUM EXTENT OF BENZENE PLUME

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

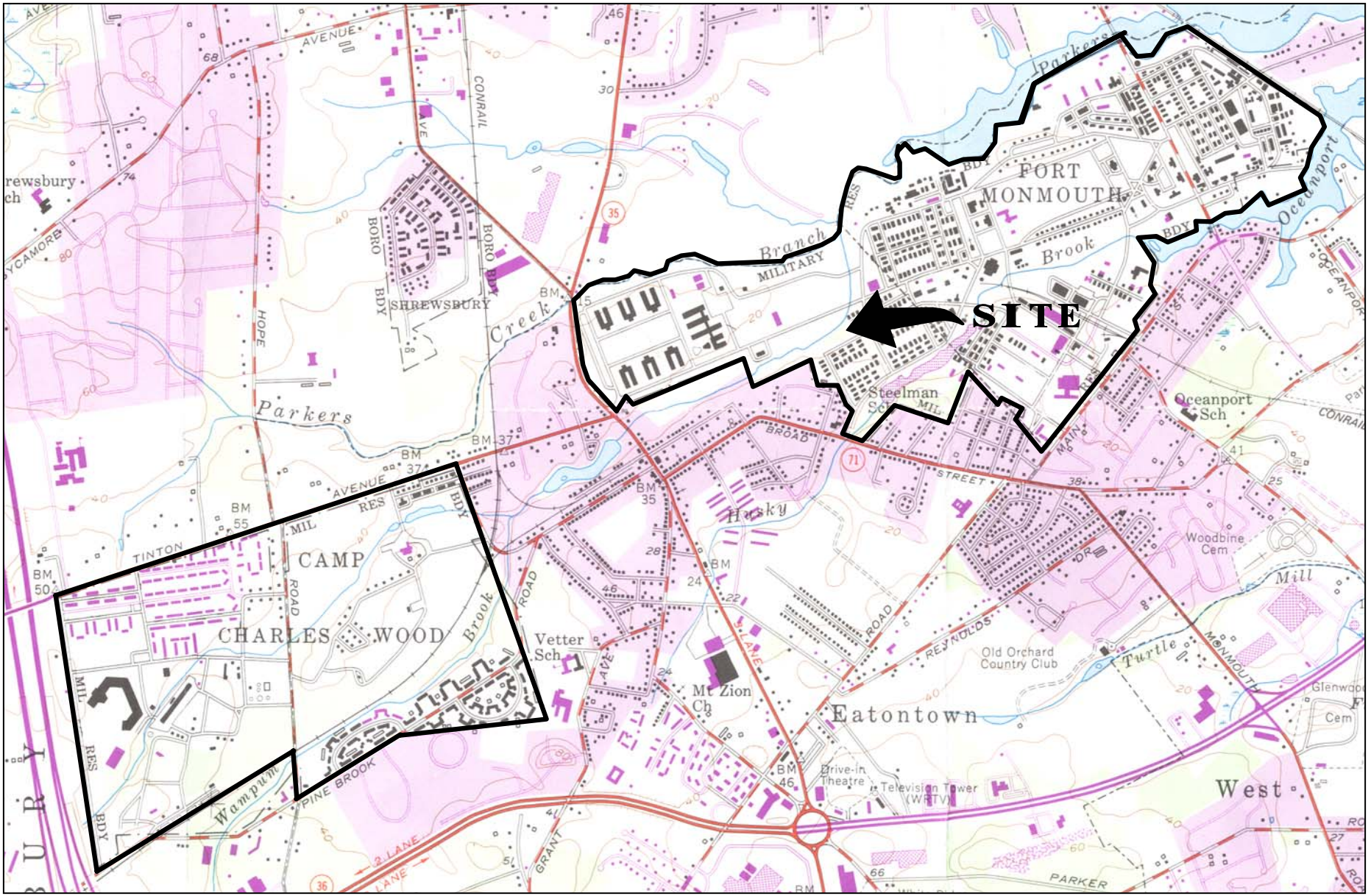
TITLE:
FIGURE 8–4
PREDICTED BENZENE PLUME
SITE 812
FORT MONMOUTH, NEW JERSEY

DRAWN BY:	DATE DRAWN: 10 OCT 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIG 8-4
	FILE No.: FIG 8-4
	SCALE: 1" = 60'
	SHEET OF REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957–0955



Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



NEW JERSEY

QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

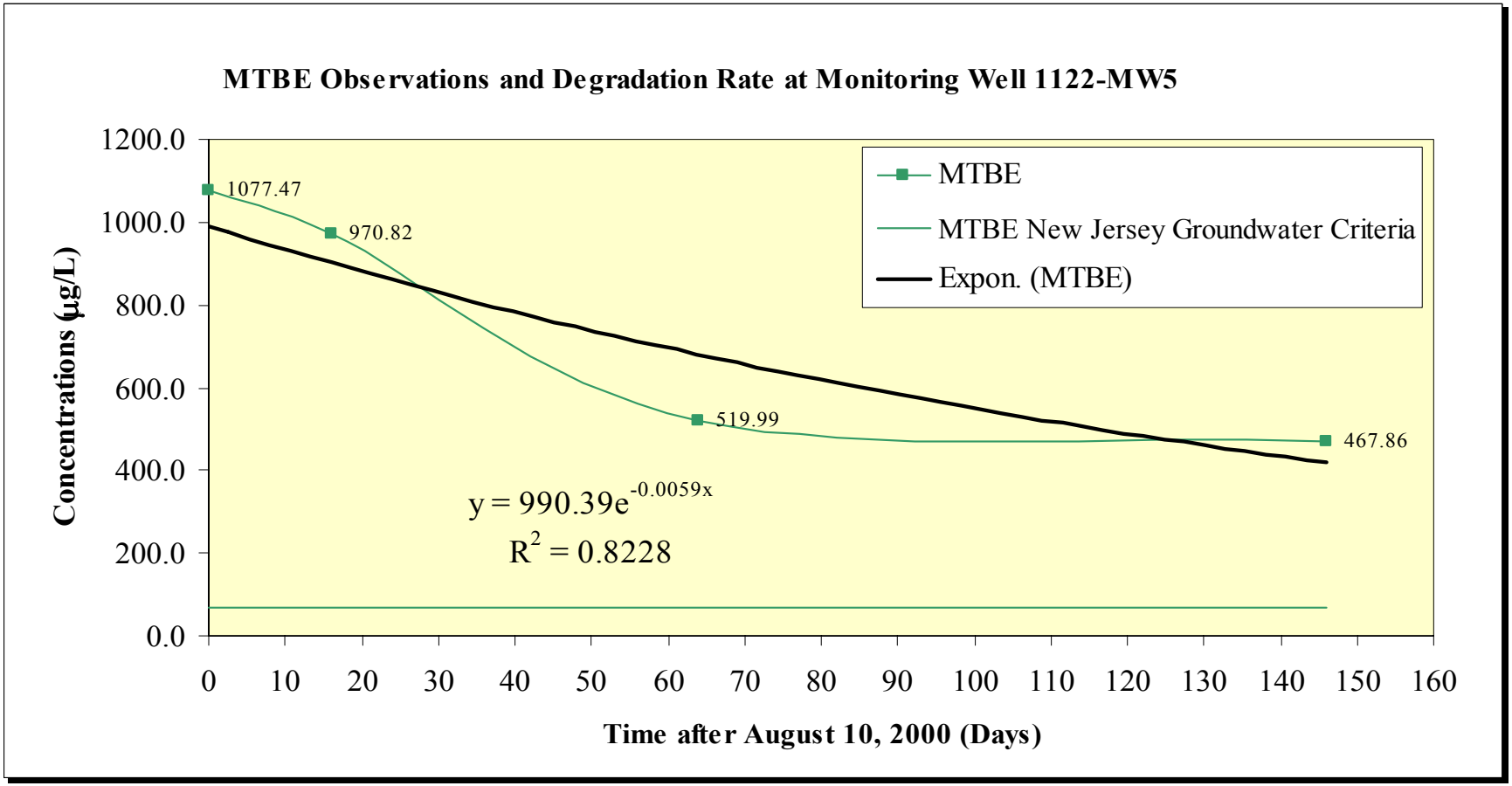
Mapped, edited and published by the Geological Survey

Figure 9-1
Site Location Map
Site 1122
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



Vet-Sall INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

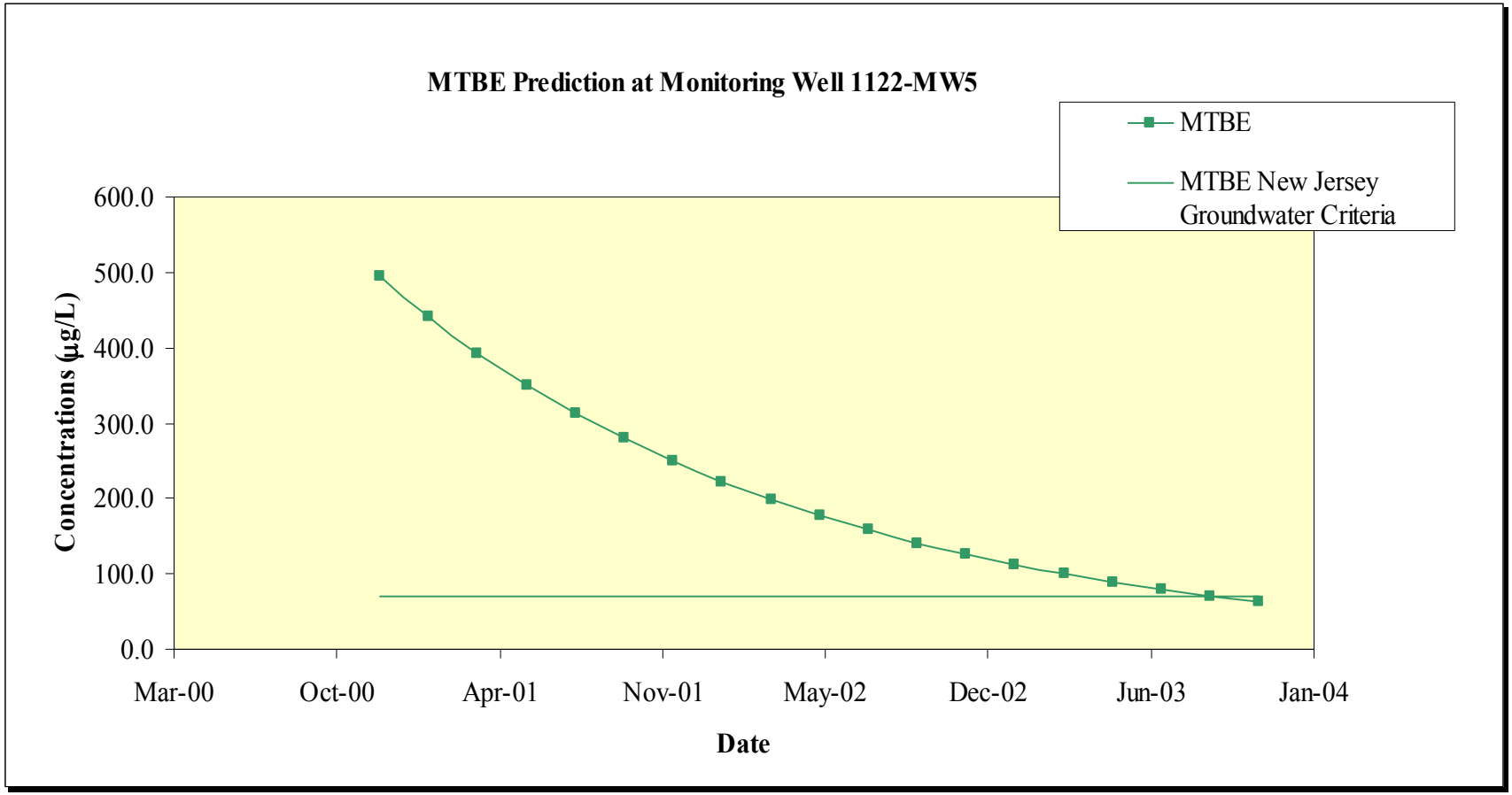


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Observed MTBE concentrations at well 1122-MW5 are shown starting on August 10, 2000.
3) The calculated half-life for MTBE is 117 days based on the rate constant (k) of 0.0059 obtained through the logarithmic regression shown above.
4) The published half-life for MTBE of 365 days (Howard, 1991) was used in order to make a more conservative prediction for MTBE concentrations at well 1122-MW5.

FIGURE 9-3a

MTBE Observations and Degradation at Well 1122-MW5
Site 1122
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

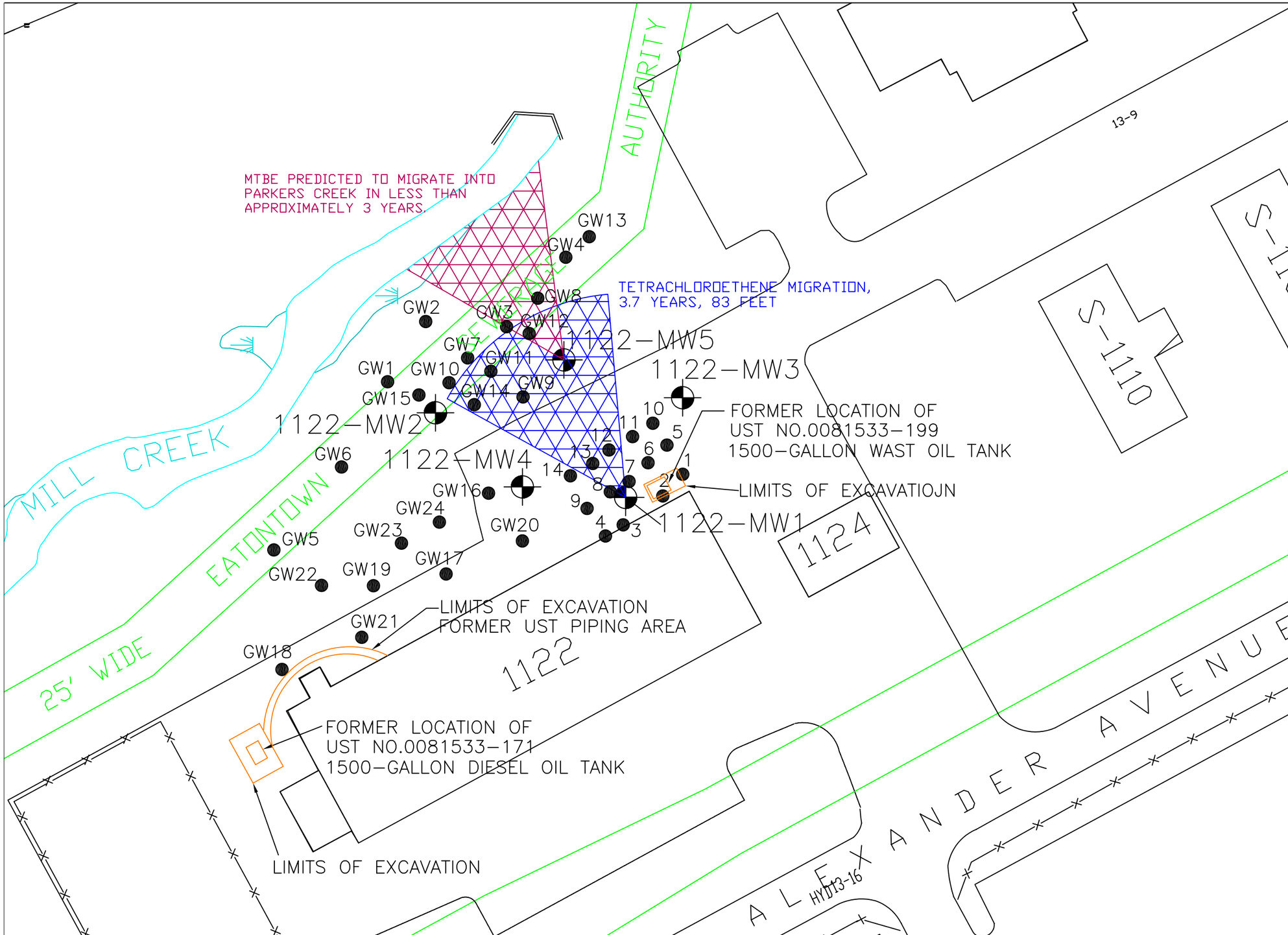


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Initial MTBE concentration at well 1122-MW5 was considered to be 493.93 ug/L on November 23, 2000 (average of analytical results for 10/13/00 and 01/03/01).
3) The published half-life of 365 days from Howard (1991) was used to predict future concentrations of MTBE.
4) Estimated time for NJDEP compliance is 3.0 years.

FIGURE 9-3b

MTBE Prediction
Well 1122-MW5
Site 1122
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



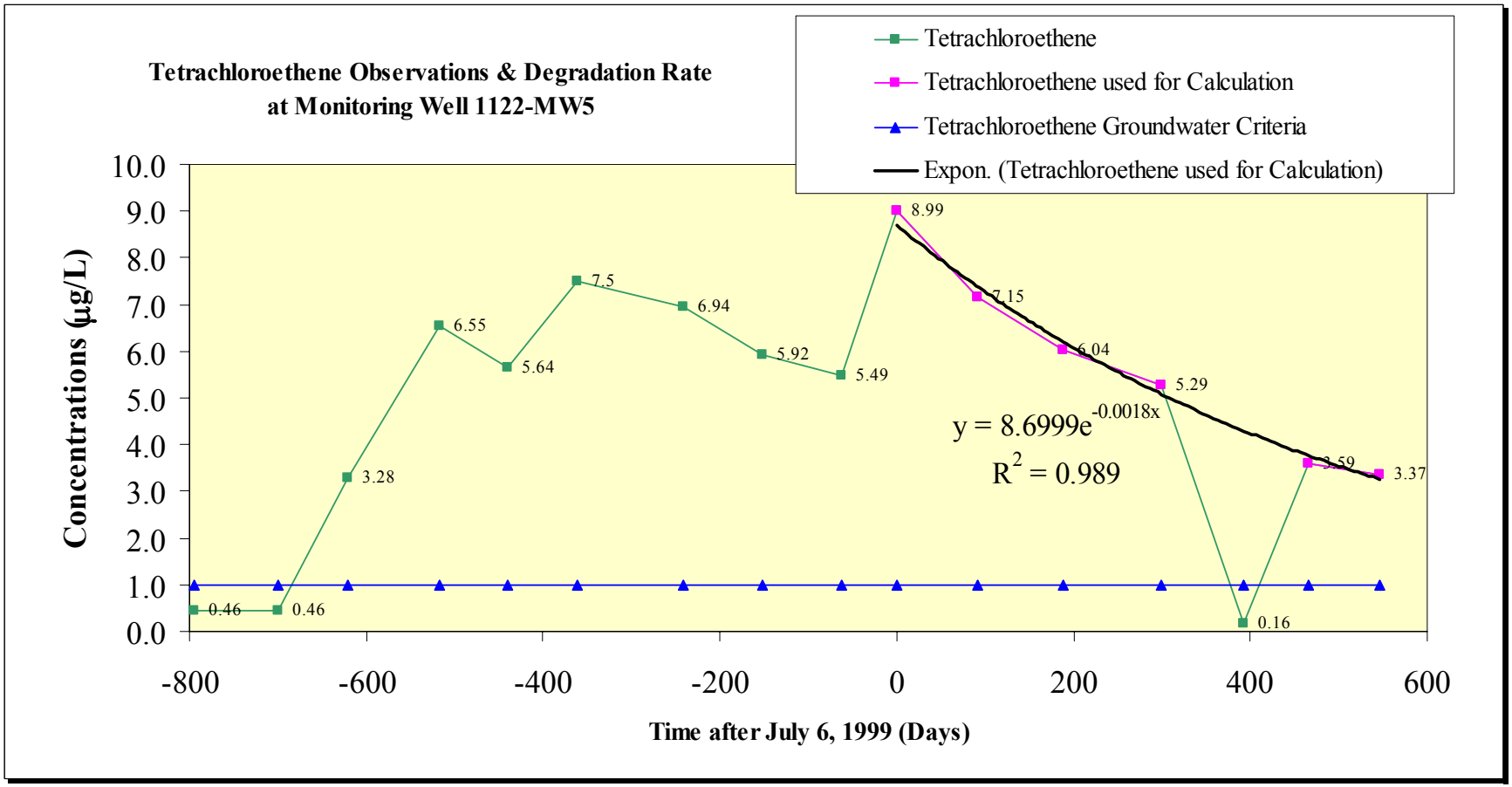
NOTES:

- BUILDING
- ROAD/CURB
- FENCE
- MONITORING WELL
- TREES/VEGETATION
- STORM SEWER
- SANITARY SEWER
- 12 / 4.13 GROUND ELEV./INVERT ELEV. (FEET ABOVE MEAN SEA LEVEL)
- VALVE
- C.B. CATCH BASIN
- GAS
- WATER
- TETRACHLOROETHENE MIGRATION IN GROUNDWATER
- MTBE MIGTATION IN GROUNDWATER
- GEOPROBE LOCATION

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 9-4
MIGRATION POTENTIAL OF COCs IN GROUNDWATER
SITE 1122
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 11 DEC 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
Versar INC. 201 GIBRALTAR ROAD, SUITE 100 HORSHAM, PA 19044 (215) 957-0955	DRAWING No.: FIGURE 9-4
	FILE No.: 283 FIGURE 9-4
	SCALE: 1" = 40'
	SHEET 1 OF 1 REV.: A



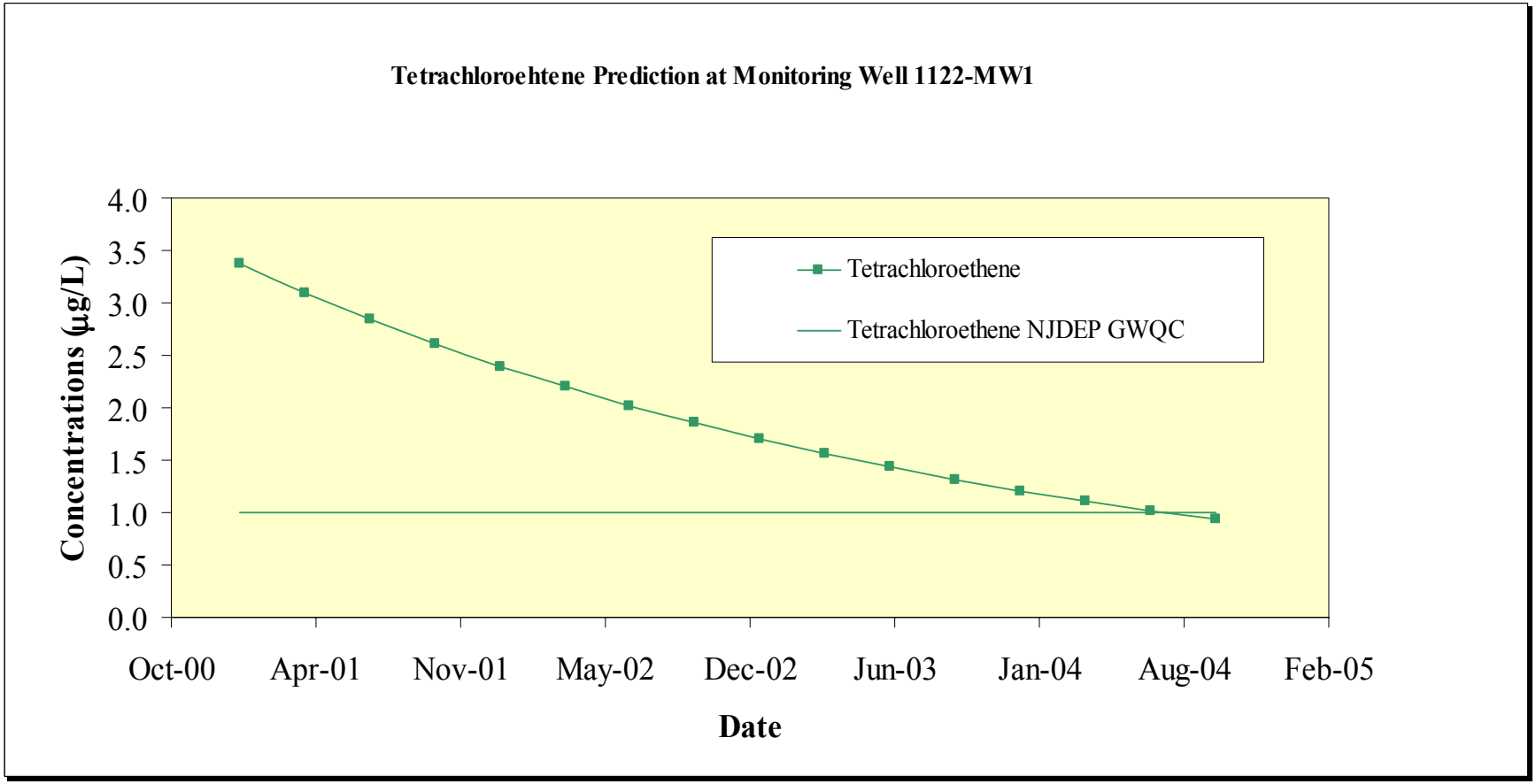
Notes:

1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Observed tetrachloroethene concentrations at well 1122-MW1 are shown starting on May 2, 1997.
3) Non-detections are replaced by ½ the respective laboratory method detection limits (MDLs).
4) The calculated half-life for tetrachloroethene is 385 days based on observations at well 1122-MW1 starting on July 6, 1999, and a rate constant (k) of 0.0018 obtained through the logarithmic regression shown above. The non-detection of PCB at well 1122-MW1 on August 1, 2000 was omitted from this calculation.
5) The site-specific half-life for tetrachloroethene of 730 days (Howard, 1991) was used in order to make a more conservative prediction for tetrachloroethene concentrations at well 1122-MW5.

FIGURE 9-5a

Tetrachloroethene Observations & Degradation at Well 1122-MW1
Site 1122
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955

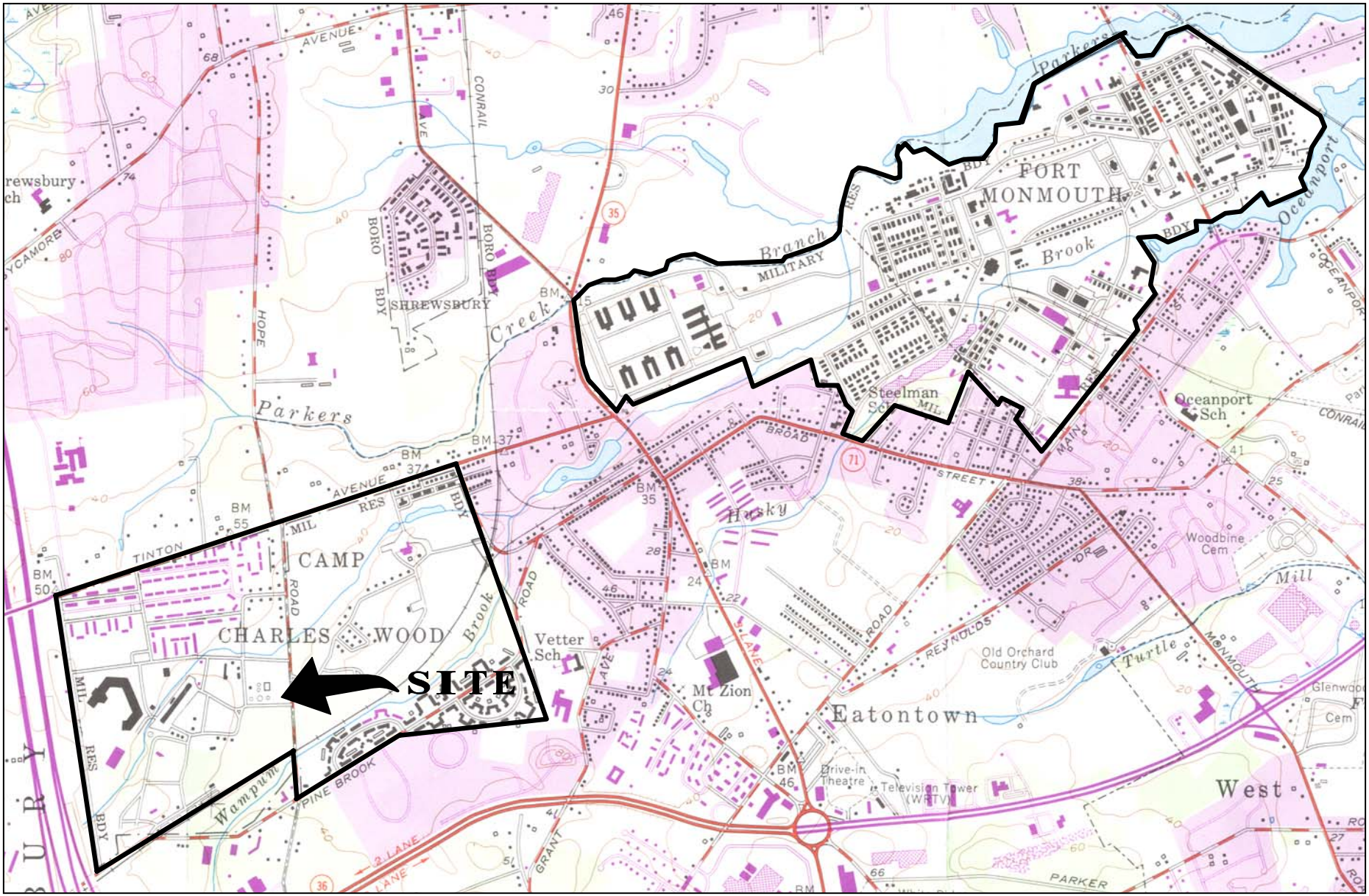


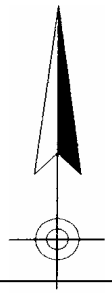
Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Initial tetrachloroethene concentration at well 1122-MW1 was considered to be 3.37 ug/L on January 3, 2001.
3) The published half-life of 730 days from Howard (1991) was used to predict future concentrations of tetrachloroethene.
4) Estimated time for NJDEP compliance is 3.7 years.

FIGURE 9-5b

Tetrachloroethene Prediction
Well 1122-MW1
Site 1122
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955







QUADRANGLE LOCATION

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

Mapped, edited and published by the Geological Survey

Figure 10-1
Site Location Map
Site 2567
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

N

YOUTH ACTIVITIES CENTER

2566

2567

2567–MW4

2567–MW2

2567–MW1

2567–MW3

LABORATORY ROAD

MH

2567–MW7

2567–MW6

2567–MW5

VERY DENSE TREES

TRIBUTARY/DRAINAGE TO WAMPUM BROOK

HOPE ROAD

VERY DENSE TREES

TEE

GREE

15

VERY DENSE TREE

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	— x —	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

= MONITORING WELL LOCATION

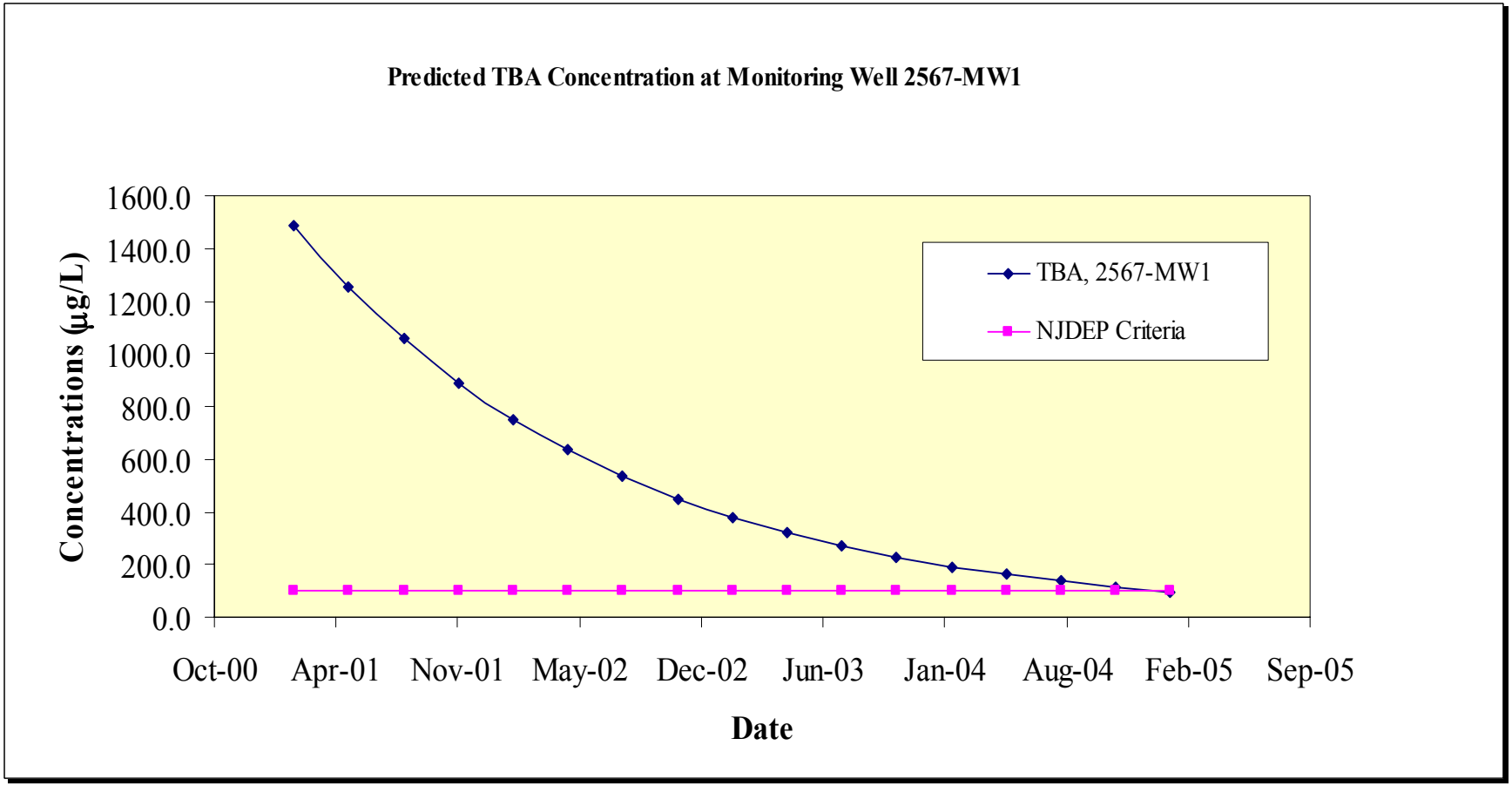
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 10–2
SITE MAP
SITE 2567
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JM	DATE DRAWN: 02 JUL 01
CHECKED BY:	DATE CHECKED: 02 JUL 01
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 10–2
	FILE No.: FIGURE 10–2
	SCALE: 1" = 60'
	SHEET 1 OF 1 REV.: A

Versar, Inc.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957–0955

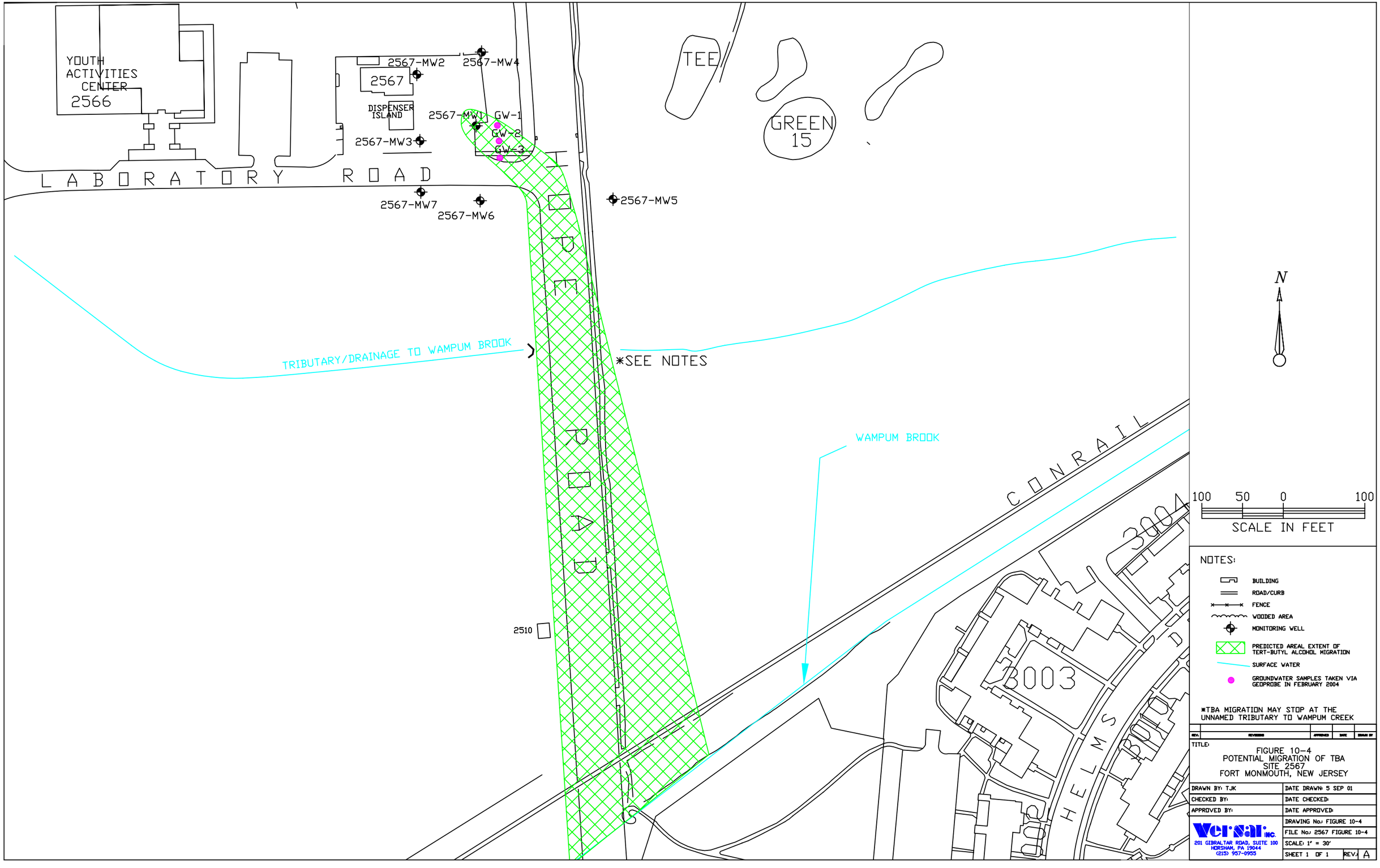


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion
2) Initial TBA concentration at well 2567-MW1 was considered to be 1488.05 ug/L on February 9, 2001.
3) Estimated time for NJDEP compliance is 3.9 years.

FIGURE 10-3

Predicted TBA Concentration at Well 2567-MW1 Site 2567 Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Rd., Suite 100
Horsham, PA 19044
(215) 957-0955



NOTES:

- BUILDING
- ROAD/CURB
- FENCE
- WOODED AREA
- MONITORING WELL
- PREDICTED AREAL EXTENT OF TERT-BUTYL ALCOHOL MIGRATION
- SURFACE WATER
- GROUNDWATER SAMPLES TAKEN VIA GEOPROBE IN FEBRUARY 2004

*TBA MIGRATION MAY STOP AT THE UNNAMED TRIBUTARY TO WAMPUM CREEK

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 10-4
POTENTIAL MIGRATION OF TBA
SITE 2567
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 5 SEP 01
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 10-4
	FILE No.: 2567 FIGURE 10-4
	SCALE: 1" = 30'
	SHEET 1 OF 1 REV.: A

VerSar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

APPENDICES

Appendix A

CEA Fact Sheet: M-12 Landfill Site

APPENDIX A

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Landfill M-12 (FTMM-12)

4. Street address: Murphy Dr., Main Post

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 110

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

The M-12 Landfill site was a former historic fill site located on the central portion of the Main Post south of Husky Brook and west of Murphy Drive. The M-12 Landfill site consists of two areas, a northwest area and a southwest area. The approximate size of the northeast area is 60,100 ft^2 (1.4 acres). The approximate size of the southwest area is 29,200 ft^2 (0.7 acre). The Roy F. Weston Site Investigation report (1995) showed that the M-12 Landfill site was suspected to contain domestic and industrial wastes and was used for the disposal of old automobile wastes. The period of operation of the M-12 Landfill site is unknown.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 110

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Arsenic	52.9	8.0	0.017
Lead	82.9	10.0	5.0

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figures 3-3a, 3-3b and 3-4a

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

M-12 Landfill: Arsenic (Figure 3-3a)

Northing	Easting	Latitude	Longitude
539450.00	621065.00	40° 18' 48.63"	74° 02' 15.36"
539450.00	621290.00	40° 18' 48.62"	74° 02' 12.46"
539605.00	621290.00	40° 18' 50.15"	74° 02' 12.45"
539605.00	621200.00	40° 18' 50.15"	74° 02' 13.61"
539528.00	621065.00	40° 18' 49.40"	74° 02' 15.36"

M-12 Landfill: Arsenic (Figure 3-3b)

Northing	Easting	Latitude	Longitude
538987.01	619847.12	40° 18' 44.11"	74° 02' 31.11"
538987.01	620013.46	40° 18' 44.11"	74° 02' 28.97"
539129.52	620013.46	40° 18' 45.51"	74° 02' 28.96"
539129.52	619973.08	40° 18' 45.52"	74° 02' 29.48"
539049.52	619847.12	40° 18' 44.73"	74° 02' 31.11"

M-12 Landfill: Lead (Figure 3-4a)

Northing	Easting	Latitude	Longitude
539071.11	620048.57	40° 18' 44.94"	74° 02' 28.51"
539071.11	620172.86	40° 18' 44.93"	74° 02' 26.91"
539160.00	620172.86	40° 18' 45.81"	74° 02' 26.90"
539160.00	620048.57	40° 18' 45.81"	74° 02' 28.51"

6. Estimated size of the proposed ground water classification exception area:

2.1 acres

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): 4,500 years

   b. Expiration date (as calendar date): the year 6504

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix B

CEA Fact Sheet: M-18 Landfill Site

APPENDIX B

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Landfill M-18 (FTMM-18); includes Bldgs. 290/296 (FTMM-55/54)

4. Street address: Sherrill Ave., Main Post

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 110

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

The M-18 Landfill site consists of a historic fill site and Buildings 290 and 296, which had UST closures performed at each facility. The M-18 Landfill site is located in the northern portion of the Main Post, between Parkers Creek to the north and Sherrill Avenue to the south. The approximate area of the M-18 Landfill site is 177,300 ft^2 (4.1 acres). The landfill area at the M-18 Landfill site was used after 1919 as an Army Signal School Training Area. Diesel and gasoline generators, situated approximately 150 meters from Parkers Creek, were used to support field exercises. It was suspected that numerous fuel spills that occurred in the area of the generator had impacted the area. A riot control agent was also used in this area for troop protective mask training. During Weston's site inspection in 1993, there was a suspected debris disposal area used for building rubble in the area north of Building 289.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 110

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Benzene	29.18	1.0	0.15
Arsenic	221	8.0	0.017
Cadmium	630.7	4.0	10.0
Chromium	1,344	100	160
Lead	836	10.0	5.0

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

See Figures 4-4, 4-5a, 4-6a, 4-7a and 4-8a

Vertical: As stated in B.3., above.

See Figure 2-4

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

M-18 Landfill: Benzene (Figure 4-4)

Northing	Easting	Latitude	Longitude
540418.62	618306.88	40° 18' 58.34"	74° 02' 50.91"
540510.47	618459.45	40° 18' 59.24"	74° 02' 48.93"
540715.89	618340.52	40° 19' 01.28"	74° 02' 50.45"
540701.91	618289.21	40° 19' 01.14"	74° 02' 51.12"
540650.86	618252.96	40° 19' 00.64"	74° 02' 51.59"
540587.79	618234.85	40° 19' 00.02"	74° 02' 51.82"
540454.75	618278.13	40° 18' 58.70"	74° 02' 51.28"

M-18 Landfill: Arsenic (Figure 4-5a)

Northing	Easting	Latitude	Longitude
540078.67	618345.45	40° 18' 54.98"	74° 02' 50.43"
540078.67	618724.68	40° 18' 54.96"	74° 02' 45.54"
540724.44	618724.68	40° 19' 01.34"	74° 02' 45.49"
540724.44	618345.45	40° 19' 01.36"	74° 02' 50.39"

M-18 Landfill: Cadmium (Figure 4-6a)

Northing	Easting	Latitude	Longitude
540063.75	618359.44	40° 18' 54.83"	74° 02' 50.25"
540063.75	618691.67	40° 18' 54.81"	74° 02' 45.96"
540370.00	618691.67	40° 18' 57.84"	74° 02' 45.94"
540370.00	618359.44	40° 18' 57.86"	74° 02' 50.23"

M-18 Landfill: Chromium (Figure 4-7a)

Northing	Easting	Latitude	Longitude
539986.53	618328.00	40° 18' 54.07"	74° 02' 50.66"
539986.53	618642.67	40° 18' 54.05"	74° 02' 46.60"
540367.57	618642.67	40° 18' 57.82"	74° 02' 46.58"
540367.57	618328.00	40° 18' 57.84"	74° 02' 50.64"

M-18 Landfill: Lead (Figure 4-8a)

Northing	Easting	Latitude	Longitude
540063.66	618337.31	40° 18' 54.83"	74° 02' 50.54"
540063.66	618647.76	40° 18' 54.82"	74° 02' 46.53"
540376.67	618647.76	40° 18' 57.91"	74° 02' 46.51"
540376.67	618337.31	40° 18' 57.92"	74° 02' 50.52"

6. Estimated size of the proposed ground water classification exception area:

4.1 acres

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): greater than 1,000 years

   b. Expiration date (as calendar date): sometime after 3004

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix C

CEA Fact Sheet: Site 80/166

APPENDIX C

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Bldg. 80 (FTMM-56)

4. Street address: Riverside Ave., Main Post (East)

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 105

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 80/166 is located in the eastern part of the Main Post Area of Fort Monmouth, north of Riverside Avenue and south of Building 166. Site 80/166 is located approximately 500 feet northwest of Oceanport Creek.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 105

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
a-Chlordane	1.625	0.5	0.0043
g-Chlordane	2.719	0.5	0.0043
Arsenic	71.6	8.0	0.017
Lead	84.1	10.0	5.0

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 5-2

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

Site 80/166: g-Chlordane (Figure 5-3a)

Northing	Easting	Latitude	Longitude
540895.51	623434.56	40° 19' 02.79"	74° 01' 44.67"
540970.92	623507.03	40° 19' 03.53"	74° 01' 43.73"
540895.51	623579.95	40° 19' 02.78"	74° 01' 42.80"
540825.16	623507.03	40° 19' 02.09"	74° 01' 43.74"

Site 80/166: Arsenic (Figure 5-4a)

Northing	Easting	Latitude	Longitude
540994.80	623452.11	40° 19' 03.77"	74° 01' 44.44"
540994.80	623775.18	40° 19' 03.75"	74° 01' 40.27"
540698.21	623775.18	40° 19' 00.82"	74° 01' 40.29"
540698.21	623452.11	40° 19' 00.84"	74° 01' 44.46"

Site 80/166: Lead (Figure 5-5a)

Northing	Easting	Latitude	Longitude
540916.47	623545.80	40° 19' 02.99"	74° 01' 43.24"
540916.47	623723.49	40° 19' 02.98"	74° 01' 40.94"
540709.70	623723.49	40° 19' 00.94"	74° 01' 40.96"
540709.70	623545.80	40° 19' 00.95"	74° 01' 43.25"

6. Estimated size of the proposed ground water classification exception area:

3.29 acres

7. Projected duration and expiration date of the proposed classification exception area:

a. Duration (in years and or days): greater than 1,000 years

b. Expiration date (as calendar date): sometime after the year 3004

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix D

CEA Fact Sheet: Site 108

APPENDIX D

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Site 108 (FTMM-57)

4. Street address: Riverside Ave., Main Post (East)

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 105

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 108 is located in the eastern part of the Main Post Area of Fort Monmouth, east of Riverside Avenue in the vicinity of buildings 63, 484 and 488. Site 108 is located approximately 400 feet northwest of Oceanport Creek and approximately 180 feet west of the New Jersey Transit Railroad.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 105

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Arsenic	63.2	8.0	0.017

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 6-2

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

	Northing	Easting	Latitude	Longitude
Site 108: Arsenic (Figure 6-3a)	541785.55	623656.87	40° 19' 11.57"	74° 01' 41.74"
	541785.55	623887.43	40° 19' 11.56"	74° 01' 38.77"
	541598.45	623887.43	40° 19' 09.71"	74° 01' 38.78"
	541598.45	623656.87	40° 19' 09.72"	74° 01' 41.76"

6. Estimated size of the proposed ground water classification exception area:

1.0 acres

7. Projected duration and expiration date of the proposed classification exception area:

a. Duration (in years and or days): greater than 1,000 years

b. Expiration date (as calendar date): sometime after the year 3004

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix E

CEA Fact Sheet: Site 283

APPENDIX E

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Bldg. 283 (FTMM-61)

4. Street address: Sherrill Ave., Main Post

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 110

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 283 is located in the north part of the Main Post Area of Fort Monmouth, on the north side of Sherrill Avenue. Site 283 is located approximately 200 feet south of Parkers Creek.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 110

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Benzene	1,009.73	1.0	0.15
Ethylbenzene	1,160.45	700	3,030
Total Xylenes	5,960.7	1,000	NA
Naphthalene	223.45	100	NA
Lead	33.1	10.0	5.0

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 7-2

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

Site 283: Benzene (Figure 7-3a)

Northing	Easting	Latitude	Longitude
540252.78	618803.53	40° 18' 56.68"	74° 02' 44.51"
540252.78	619082.35	40° 18' 56.66"	74° 02' 40.91"
540508.33	619082.35	40° 18' 59.19"	74° 02' 40.89"
540508.33	618803.53	40° 18' 59.20"	74° 02' 44.49"

Site 283: Lead (Figure 7-4a)

Northing	Easting	Latitude	Longitude
540205.56	618528.00	40° 18' 56.22"	74° 02' 48.07"
540205.56	619361.76	40° 18' 56.18"	74° 02' 37.30"
540641.18	619361.76	40° 19' 00.49"	74° 02' 37.27"
540641.18	618528.00	40° 19' 00.53"	74° 02' 48.04"

6. Estimated size of the proposed ground water classification exception area:

10.0 acres

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): 210 years

   b. Expiration date (as calendar date): 2214

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix F

Groundwater Modeling Information and BIOCHLOR spreadsheets for Site 812

APPENDIX F

Determination of the Duration and Arial Extent of the CEAs

A. Introduction

Versar used the NJDEP's analytical solution option (1998) to estimate the duration and downgradient extent of the proposed CEAs for Site 812 (the Site). The model describes the one-dimensional transport of decaying solute species under natural attenuation conditions.

B. Components of the Model

The degradation of chlorinated solvents (i.e., PCE and TCE) results in the production of some less chlorinated daughter products (i.e., PCE ⟩ TCE ⟩ DCE ⟩ VC) that are also subject to GWQCs. In order to accurately represent the fate and transport of the chlorinated VOCs detected in the monitoring wells at the site, the governing model transport equation for each chlorinated solvent was linked with the governing equations for the appropriate parent and daughter species. In this manner, the degradation of one parent species results in the production of its associated daughter product. The fate and transport of each parent and daughter species, as controlled by the natural attenuation processes in ground water flow was modeled for each well source.

In determining the extent and duration of the CEA for the Site, the NJDEP's analytical solution option (1998) was modified to account for the decay and production of parent/daughter constituents. The mass conversion of parent species (e.g., PCE) to daughter species (e.g., TCE) was calculated for each constituent as a function of the appropriate constituent half-life over the simulation time step. Mass of decaying parent species is converted to mass of daughter product by accounting for differing molecular weights of constituents.

In the model, the source is assumed to be located at the well of interest. Initial concentrations of the chlorinated solvents at the source are assumed to be equal to the concentrations measured during the most recent round of ground water sampling at the site (1998). Since the model assumes a uniform flow - isotropic and homogeneous, and a known flow direction, the CEA area is semi-circular in plan view.

Species migrate away from the source at a rate that is primarily governed by advection. The model used is conservative since it does not account for species attenuation by hydrodynamic dispersion and adsorption, but only by biodegradation. In the model, biodegradation is represented by a first-order decay process in accordance with the biodegradation half-life of each species. The key assumptions used in the model are as follows:

- X The aquifer is homogeneous and isotropic.
- X The ground water velocity is uniform and constant.
- X The biodegradation rate of the chlorinated solvents is proportional to concentration and may be represented by a first-order biodegradation rate expression.
- X To be conservative, chlorinated solvent losses through molecular diffusion, hydrodynamic dispersion and volatilization are neglected.

C. Input Parameters

The model relies on site-specific data for parameter input values. The model input data are described below.

1. First Order Decay Constants

The first order decay constants describe the rate at which compounds are biodegraded in the aquifer. They are determined in laboratory and field experiments, and are specific to each compound. Decay constants are in units of 1/time. The decay constants are related to the half-lives as described in the following equation.

$$\text{Decay constant} = ((\ln 0.5)/\text{half-life}) = (0.693/\text{half-life})$$

The model requires first order decay constants. The decay constants were derived from literature (Howard, 1991).

2. Uniform Ground Water Seepage Velocity

The uniform ground water seepage velocity is calculated from Darcy=s law as:

$$V_s = K * i/n_e$$

where:

V_s = seepage velocity;
K = hydraulic conductivity;
i = hydraulic gradient; and
n_e = effective porosity.

The hydraulic conductivity has units of length/time, and the hydraulic gradient and effective porosity are dimensionless, so the seepage velocity has units of length/time.

Versar determined the hydraulic conductivity at the Site by conducting single-well aquifer tests (slug tests and bail tests) in May 2000 (see Appendix D of Site 812 Remedial Investigation Report & Remedial Action Workplan). Versar used the arithmetic mean of these values for modeling.

The hydraulic gradient was determined for the aquifer based on the measured ground water elevations (see Table 4).

An effective porosity of 0.25 was used in the model for the shallow aquifer, based on values provided by the USGS (1982) for this formation.

3. Retardation Factor

The retardation factor is a dimensionless parameter that describes the effect of chemical adsorption on the aquifer material. This process slows the migration of dissolved chemicals in ground water. The retardation factor is calculated as:

$$R_d = 1 + (K_{oc} * f_{oc} * \rho_b/n_e)$$

where:
R_d = retardation factor;
K_{oc} = soil sorption coefficient;
f_{oc} = fraction of organic carbon;
ρ_b = bulk density of formation; and
n_e = effective porosity.

Versar obtained literature values for these parameters. The soil sorption coefficient is compound-specific and is expressed in units of milliliters of solute per gram of aquifer material (USEPA 1996b). The fraction of organic carbon of 0.001 was used in the model as recommended by the USEPA (1996a) for the sites at which no specific data are available. The bulk density values were obtained from a range of values for similar geologic materials (USEPA 1985). The effective porosity was selected as described above.

D. Modeling Results

Tables A-1, A-2 and A-3 present detailed CEA calculations for each well of concern at the site (i.e., MW-04, MW-05, and MW-07). Graphical depictions of the model output for each contaminant from each source well are provided in Figures A-1 through A-3. These results and their relationship to the proposed CEAs are discussed in the text of the report.

E. References

Howard, P.H., R.S. Boethling, W.F. Jarvis, W.M. Meylan, and E.M. Michalenko. 1991. *Handbook of Environmental Degradation Rates.* Chelsea, Michigan: Lewis Publishers.

United States Department of the Interior Geological Survey. 1982. *Physical Properties of Rocks*. Reston, Virginia. Open-File Report 82-166.

United States Environmental Protection Agency. 1985. *Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water - Part II.* (Revised 1985). EPA/600/6-85/002b.

United States Environmental Protection Agency (USEPA). 1996a. *BIOSCREEN: Natural Attenuation Decision Support System. User=s Manual*. Version 1.3. Office of Research and Development. Washington, D.C. EPA/600/R-96/087.

United States Environmental Protection Agency (USEPA). 1996b. *Soil Screening Guidance: Technical Background Document*. Office of Solid Waste and Emergency Response. Washington, D.C. EPA/540/R-95/128.

Figure A-1
1,1,1-trichloroethane Concentrations at Wells 812-MW05 and 812-MW07
Site 812
Fort Monmouth, New Jersey

CEA Duration

Input

Parameters / Constituents		1,1,1-trichloroethane
Δt	days	6.5
k	$days^{-1}$	0.00251
$T_{1/2}$	days	276
5/26/00 Average Concentration for MW-05 & MW-07	µg/L	41.84
6/9/00 Average Concentration for MW-05 & MW-07		43.71
Initial Concentration, C		42.78
AVERAGE OF 5/26/00 & 6/9/00 DATA		

Calculation and Results

Time (days)	Date	Predicted Concentrations, C (µg/L)
0	June 2, 2000	42.78
7	June 8, 2000	42.08
13	June 15, 2000	41.40
20	June 21, 2000	**40.73**
26	June 28, 2000	40.08
33	July 4, 2000	39.43
39	July 11, 2000	38.79
46	July 17, 2000	38.16
52	July 24, 2000	37.55
59	July 30, 2000	36.94
65	August 6, 2000	36.34
72	August 12, 2000	35.76
78	August 19, 2000	35.18
85	August 25, 2000	34.61
91	September 1, 2000	34.05
98	September 7, 2000	33.50
104	September 14, 2000	32.96
111	September 20, 2000	32.42
117	September 27, 2000	31.90
124	October 3, 2000	31.39
130	October 10, 2000	30.88
137	October 16, 2000	30.38
143	October 23, 2000	29.89

CEA will extend until approximately:

143	**October 23, 2000**	**29.89**
NJDEP GWQC	**µg/L**	**30**

Notes:

NJDEP GWQC = New Jersey Department of Environmental Protection Ground Water Quality Criterion

Parent Constituent Predicted Concentration: $C_p(t) = C_p(t-1) * e^{-k\Delta t}$

Daughter Constituent Predicted Concentration: $C_d(t) = C_d(t-1) * e^{-k\Delta t} + (Cp(t-1)-Cp(t))*Md/Mp$

Time to reach NJDEP GWQC $= T_{NJDEP\ GWQC}$

Reaction Rate Constant = $k = -\ln(0.5)/t_{1/2}$

Length of CEA

Input Data

Hydraulic Conductivity(3) (K)	**cm/s**	**1.60E-03**
Hydraulic Gradient(4) (i):	**ft/ft**	**0.01923**
Effective Porosity(5) (n_e):	**---**	**0.25**
Bulk Density of Formation(5) (ρ_b)	**kg/L**	**1.6**
n-Octanol/Carbon Partition(6) (K_{oc}):	**L/kg**	**426**
Fraction of Organic Carbon(7) (f_{oc})	**---**	**0.001**

Calculation and Results

Seepage Velocity (ft/day)	vs = K*i/ne =	0.35
Retardation Factor	Rd = 1 + (Koc * foc* rb / ne) =	3.73
Pollutant Transport Rate (ft/day)	vpt = vs/Rd =	0.094
or (ft/year)		34.17
T_{NJGWQC} (days)	**Determined above**	**143**
T_{NJGWQC} (years)		**0.4**
Length of CEA (ft)	**vpt * TGWQS =**	**13**

Notes:

(1) Initial concentration (Co) is the average concentration of the last two sampling events: 5/26/00 & 6/9/00

(2) Half-Life data reference: Geometric mean of the minimum and maximum half-life published by Howard, 1991

(3) Hydraulic conductivity, K = 1.6 cm/sec - Average K for Shresbury Hydrogeologic Unit (Slug Test on May 19, 2000)

(4) Hydraulic gradient (i) derived from ground water elevation contours generated by Vasar for the May 30, 2000 measurements.

(5) Effective porosity, n = 0.25; Bulk Density, Rhob = 1.6 (characteristic value for sands at the Site)

(6) K_{oc} data reference: Biochlore or Bioscreen

(7) f_{oc} = 0.001 (default value - conservative).

Figure A-2
Benzene Concentrations at Well 812-MW04
Site 812
Fort Monmouth, New Jersey

CEA Duration

Input

Parameters / Constituents		Benzene
Δt	days	13
k	$days^{-1}$	0.00817
$T_{1/2}$	days	85
5/26/00 Concentration	µg/L	8.84
6/9/00 Concentration	µg/L	9.99
Initial Concentration, C	µg/L	9.42
AVERAGE OF 5/26/00 & 6/9/00 DATA	µg/L	

Calculation and Results

Time (days)	Date	Predicted Concentrations, C (µg/L)
0	June 2, 2000	9.42
13	June 15, 2000	8.47
26	June 28, 2000	7.61
39	July 11, 2000	**6.85**
52	July 24, 2000	6.16
65	August 6, 2000	5.54
78	August 19, 2000	4.98
91	September 1, 2000	4.48
104	September 14, 2000	4.03
117	September 27, 2000	3.62
130	October 10, 2000	3.26
143	October 23, 2000	2.93
156	November 5, 2000	2.63
169	November 18, 2000	2.37
182	December 1, 2000	2.13
195	December 14, 2000	1.91
208	December 27, 2000	1.72
221	January 9, 2001	1.55
234	January 22, 2001	1.39
247	February 4, 2001	1.25
260	February 17, 2001	1.13
273	March 2, 2001	1.01
286	March 15, 2001	0.91

CEA will extend until approximately:

286	**March 15, 2001**	**0.91**
NJDEP GWQC	**µg/L**	**1**

Notes:

NJDEP GWQC = New Jersey Department of Environmental Protection Ground Water Quality Criterion

Parent Constituent Predicted Concentration: $C_p(t) = C_p(t\text{-}1) * e^{-k\Delta t}$

Daughter Constituent Predicted Concentration: $C_d(t) = C_d(t\text{-}1) * e^{-k\Delta t} + (Cp(t\text{-}1)\text{-}Cp(t))*Md/Mp$

Time to reach NJDEP GWQC $= T_{NJDEP\ GWQC}$

Reaction Rate Constant = $k = -\ln(0.5)/t_{1/2}$

Length of CEA

Input Data

Hydraulic Conductivity[3] (K)	**cm/s**	**1.60E-03**
Hydraulic Gradient[4] (i):	**ft/ft**	**0.01923**
Effective Porosity[5] (n_e):	**---**	**0.25**
Bulk Density of Formation[5] (ρ_b)	**kg/L**	**1.6**
n-Octanol/Carbon Partition[6] (K_{oc}):	**L/kg**	**426**
Fraction of Organic Carbon[7] (f_{oc})	**---**	**0.001**

Calculation and Results

Seepage Velocity (ft/day)	vs = K*i/ne =	0.35
Retardation Factor	Rd = 1 + (Koc * foc* rb / ne) =	3.73
Pollutant Transport Rate (ft/day)	vpt = vs/Rd =	0.094
or (ft/year)		34.17
T_{NJGWQC} (days)	**Determined above**	**286**
T_{NJGWQC} (years)		**1**
Length of CEA (ft)	**vpt * TGWQS =**	**27**

Notes:

(1) Initial concentration (Co) is the average concentration of the last two sampling events: 5/26/00 & 6/9/00

(2) Half-Life data reference: Geometric mean of the minimum and maximum half-life published by Howard, 1991

(3) Hydraulic conductivity, K = 1.6 cm/sec - Average K for Shresbury Hydrogeologic Unit (Slug Test on May 19, 2000)

(4) Hydraulic gradient (i) derived from ground water elevation contours generated by Vasar for the May 30, 2000 measurements.

(5) Effective porosity, n = 0.25; Bulk Density, Rhob = 1.6 (characteristic value for sands at the Site)

(6) K_{oc} data reference: Biochlore or Bioscreen

(7) f_{oc} = 0.001 (default value - conservative).

Figure A-3
Tetrachloroethene and Daughter Product Concentrations at Well 812-MW04
Site 812
Fort Monmouth, New Jersey

CEA Duration

Input

Parameters / Constituents		PCE	TCE	1,2-DCE	VC
Molecular Weight, M	g/mol	165.8	131.4	96.9	62.5
Δt	days	257			
k	$days^{-1}$	0.00135	0.00095	0.00174	0.00174
$T_{1/2}$	days	513	726	399	399
5/26/00 Concentration	µg/L	2.35	5.25	11,013.56	126.45
6/9/00 Concentration	µg/L	2.64	4.70	10,886.24	147.57
Initial Concentration, C	µg/L	2.50	4.98	10,949.90	137.01
AVERAGE OF 5/26/00 & 6/9/00 DATA	µg/L				

Calculation and Results

Time (days)	Date	Predicted Concentrations, C (µg/L)			
0	June 2, 2000	2.50	4.98	10949.90	137.01
257	February 14, 2001	1.76	4.47	7011.41	2628.54
514	October 29, 2001	1.25	3.91	4489.74	3309.84
771	July 13, 2002	**0.88**	3.35	2875.16	3160.91
1,028	March 27, 2003	0.62	2.83	1841.34	2690.91
1,285	December 9, 2003	0.44	2.36	1179.36	2150.10
1,542	August 22, 2004	0.31	1.94	755.46	1650.25
1,799	May 6, 2005	0.22	1.59	483.99	1231.86
2,056	January 18, 2006	0.15	1.30	310.13	901.00
2,313	October 2, 2006	0.11	1.05	198.77	648.82
2,570	June 16, 2007	0.08	0.85	127.43	461.53
2,827	February 28, 2008	0.05	0.68	81.72	325.06
3,084	November 11, 2008	0.04	**0.55**	52.43	227.08
3,341	July 26, 2009	0.03	0.44	33.66	157.55
3,598	April 9, 2010	0.02	0.35	21.62	108.68
3,855	December 22, 2010	0.01	0.28	13.90	74.60
4,112	September 5, 2011	0.01	0.22	**8.94**	50.99
4,369	May 19, 2012	0.01	0.17	5.76	34.72
4,626	January 31, 2013	0.00	0.14	3.72	23.56
4,883	October 15, 2013	0.00	0.11	2.40	15.95
5,140	June 29, 2014	0.00	0.09	1.55	10.77
5,397	March 13, 2015	0.00	0.07	1.01	7.26
5,654	November 25, 2015	0.00	0.05	0.66	**4.88**
CEA will extend until approximately:					
5,654	**November 25, 2015**	**0.00**	**0.05**	**0.66**	**4.88**
NJDEP GWQC	**µg/L**	**1**	**1**	**10**	**5**

Notes:

NJDEP GWQC = New Jersey Department of Environmental Protection Ground Water Quality Criterion

Parent Constituent Predicted Concentration: $C_p(t) = C_p(t-1) * e^{-k\Delta t}$

Daughter Constituent Predicted Concentration: $C_d(t) = C_d(t-1) * e^{-k\Delta t} + (Cp(t-1)-Cp(t))*Md/Mp$

Time to reach NJDEP GWQC $= T_{NJDEP\ GWQC}$

Reaction Rate Constant $= k = -\ln(0.5)/t_{1/2}$

Length of CEA

Input Data

Hydraulic Conductivity[3] (K)	cm/s	1.60E-03			
Hydraulic Gradient[4] (i):	ft/ft	0.01923			
Effective Porosity[5] (n_e):	---	0.25			
Bulk Density of Formation[5] (ρ_b)	kg/L	1.6			
n-Octanol/Carbon Partition[6] (K_{oc}):	L/kg	426	130	125	30
Fraction of Organic Carbon[7] (f_{oc})	---	0.001			

Calculation and Results

Seepage Velocity (ft/day)	vs = K*i/ne =	0.35			
Retardation Factor	Rd = 1 + (Koc * foc* rb / ne) =	3.73	1.83	1.80	1.19
Pollutant Transport Rate (ft/day)	vpt = vs/Rd =	0.094	0.190	0.194	0.293
or (ft/year)		34.17	69.51	70.74	106.83
T_{NJGWQC} (days)	Determined above	771	3,084	4,112	5,654
T_{NJGWQC} (years)		2	8	11	15
Length of CEA (ft)	vpt * TGWQS =	72	587	797	1,655

Notes:

(1) Initial concentration (Co) is the average concentration of the last two sampling events: 5/26/00 & 6/9/00

(2) Half-Life data reference: Geometric mean of the minimum and maximum half-life published by Howard, 1991

(3) Hydraulic conductivity, K = 1.6 cm/sec - Average K for Shresbury Hydrogeologic Unit (Slug Test on May 19, 2000)

(4) Hydraulic gradient (i) derived from ground water elevation contours generated by Vasar for the May 30, 2000 measurements.

(5) Effective porosity, n = 0.25; Bulk Density, Rhob = 1.6 (characteristic value for sands at the Site)

(6) K_{oc} data reference: Biochlore or Bioscreen

(7) f_{oc} = 0.001 (default value - conservative).

Appendix G

CEA Fact Sheet: Site 812

APPENDIX G

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Site 812 (FTMM-64)

4. Street address: Murphy Dr., Main Post

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Oceanport

   b. Block and Lots: Block 1; Lot 110

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 812 is located in the south-central portion of the Main Post near the Main Street entrance to Fort Monmouth. Site 812 is bordered by Murphy Drive to the east and south and to the northwest by an access road, Building 1000 (the Post Exchange or

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

PX), and Building 1001 (the Four Seasons Store). "Building" 812, the Army Community Service Center and associated parking areas, currently occupies the area defined as Site 812, which encompasses approximately 2.75 acres. Specific historical information is not available regarding previous operations and conditions at Site 812. Reportedly, Site 812 is the former location of a gasoline station with underground fuel storage.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Oceanport

b. Block and Lots: Block 1; Lot 110

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Benzene	9.99	1.0	0.15
Cis-1,2-dichloroethene	10,436.18	70	NA
1,1-dichloroethene	8.11	2.0	4.81
Tetrachloroethene	2.64	1.0	0.388
Trans-1,2-dichloroethene	615.87	100	592
Trichloroethene	5.25	1.0	1.09
1,1,1-trichloroethane	43.71	30	127
Vinyl Chloride	147.57	5.0	0.083

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 8-2

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

Site 812:1,1,1-trichloroethane (Figure 8-3)

Northing	Easting	Latitude	Longitude
537989.54	620469.19	40° 18' 34.23"	74° 02' 23.15"
537989.54	620530.69	40° 18' 34.22"	74° 02' 22.36"
537884.54	620530.69	40° 18' 33.18"	74° 02' 22.37"
537774.54	620469.19	40° 18' 32.10"	74° 02' 23.17"

Site 812: Benzene (Figure 8-4)

Northing	Easting	Latitude	Longitude
620590.62	537946.56	40° 32' 13.41"	74° 20' 06.47"
620646.83	537948.20	40° 32' 13.97"	74° 20' 06.45"
620629.75	537891.38	40° 32' 13.80"	74° 20' 07.19"
620611.55	537890.65	40° 32' 13.62"	74° 20' 07.20"

Site 812: Vinyl Chloride (Figure 8-5)

Northing	Easting	Latitude	Longitude
537884.56	620521.02	40° 18' 33.19"	74° 02' 22.49"
538581.94	620299.40	40° 18' 40.09"	74° 02' 25.31"
538716.14	620436.71	40° 18' 41.41"	74° 02' 23.52"
538716.14	620547.01	40° 18' 41.40"	74° 02' 22.10"
538612.27	620722.12	40° 18' 40.37"	74° 02' 19.85"
537885.89	620710.28	40° 18' 33.19"	74° 02' 20.05"

6. Estimated size of the proposed ground water classification exception area:

2.75 acres

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): 11 years

   b. Expiration date (as calendar date): 2015

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix H

CEA Fact Sheet: Site 1122

APPENDIX H

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Bldg. 1122 (FTMM-59)

4. Street address: Semaphore Ave., Main Post

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Eatontown

   b. Block and Lots: Block 1; Lot 3

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 1122 is approximately 1.5 acres and is located in the southwestern part of the Main Post Area of Fort Monmouth, north of Alexander Avenue and just south of Mill Creek.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Eatontown

b. Block and Lots: Block 1; Lot 3

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Methyl tert-butyl ether	1,077.47	70	NA
Tetrachloroethene	8.99	1.0	0.388

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 9-2

Vertical: As stated in B.3., above.

See Figure 2-4

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

Site 1122: MTBE (Figure 9-4)

Northing	Easting	Latitude	Longitude
538394.02	617423.28	40° 18' 38.38"	74° 03' 02.45"
538474.36	617412.98	40° 18' 39.17"	74° 03' 02.57"
538461.05	617400.98	40° 18' 39.04"	74° 03' 02.73"
538430.69	617359.32	40° 18' 38.74"	74° 03' 03.27"

Site 1122: Tetrachloroethene (Figure 9-4)

Northing	Easting	Latitude	Longitude
538337.44	617448.39	40° 18' 37.82"	74° 03' 02.13"
538420.50	617441.15	40° 18' 38.64"	74° 03' 02.21"
538409.74	617406.98	40° 18' 38.53"	74° 03' 02.66"
538377.99	617375.77	40° 18' 38.22"	74° 03' 03.06"

6. Estimated size of the proposed ground water classification exception area:

0.26 acres

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): 3.7 years

   b. Expiration date (as calendar date): 2008

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

Appendix I

CEA Fact Sheet: Site 2567

APPENDIX I

Ground Water Classification Exception Area Fact Sheet

A. SITE INFORMATION

1. Program's Site Identification Number: N/A

2. Program Interest Number (Preferred ID): N/A

3. Program Interest Name: Bldg. 2567 (FTMM-58)

4. Street address: Laboratory Rd., Charles Woods

5. City: Ft. Monmouth

6. County: Monmouth

7. Block and Lots of the site (duplicate if the site is located in more than one municipality):

   a. Name of the municipality in which the site is located: Tinton Falls

   b. Block and Lots: Block 1; Lot 101

   c. Year of tax map: Federal (exempt)

8. United States Geological Survey Quadrangle map, indicating the location of the site, presented as Exhibit A.

9. Site Contact:

   a. Name of contact person: Joseph Fallon – Lead Environmental Specialist

   b. Company name: US Army Garrison, Directorate of Public Works

   c. Mailing address: Att: SELFM-PW-EV, Bldg. 173, Ft. Monmouth, NJ 07703

   d. Phone number: (732) 532-6223

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

B. PROPOSED CLASSIFICATION EXCEPTION AREA INFORMATION

1. Narrative description of proposed classification exception area:

Site 2567 is located in the Charles Wood Area of Fort Monmouth at the northwest corner of the intersection between Laboratory Road and Hope Road. Site 2567 includes Building 2567, two gasoline dispenser islands located within the paved area south of the building and dense wooded areas located to the south and east of the site.

2. Location of proposed classification exception area (duplicate if the site is located in more than one municipality):

a. Name of the municipality in which the site is located: Tinton Falls

b. Block and Lots: Block 1; Lot 101

c. Year of tax map: Federal (exempt)

3. Affected aquifer(s):

Aquifer Name	Vertical Depth	Ground Water Classification
Navesink-Hornerstown Confining Unit	125 ft	Class III-A

4. Contaminant concentrations:

Contaminant	Concentration[1]	GWQS[2]	SWQS[3]
Tert-butyl alcohol	1,488.05	100	NA

5. Proposed classification exception area boundaries:

Horizontal: Scaled map indicating projected areal extent of proposed classification exception area, as well as location of site, presented as Exhibit B.

See Figure 10-2

Vertical: As stated in B.3., above.

See Figure 2-4

Locational coordinates of boundary of proposed classification exception area as New Jersey State Plane Coordinates. A minimum of four coordinates shall be submitted, in a format compatible with Department's geographic information system:

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

	Northing	Easting	Latitude	Longitude
Site 2567: TBA (Figure 10-4)	532102.87	609646.66	40° 17' 36.58"	74° 04' 43.22"
	532222.48	609808.01	40° 17' 37.76"	74° 04' 41.13"
	532911.67	609632.75	40° 17' 44.58"	74° 04' 43.35"
	532975.97	609531.82	40° 17' 45.22"	74° 04' 44.65"
	532893.75	609579.47	40° 17' 44.40"	74° 04' 44.04"

6. Estimated size of the proposed ground water classification exception area:

5.5 acres

7. Projected duration and expiration date of the proposed classification exception area:

   a. Duration (in years and or days): 3.9 years

   b. Expiration date (as calendar date): 2007

Footnotes

1 Maximum concentration detected at the time Classification Exception Area information was collected for submittal to the Department.

2 New Jersey Ground Water Quality Standards, N.J.A.C. 7:9-6.

3 New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B.

This is an unofficial copy of the rule. The official rule adoption is scheduled for publication in the New Jersey Register on February 3, 2003. Should there be any discrepancies between this text and the official version of the adoption, the official version will govern. For more information, see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

4607

New Jersey State Department of Environmental Protection
Bureau of Water Systems and Well Permitting
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
E201010533

WELL PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

Certifying Driller: BARRIE WOODINGTON, MASTER LICENSE # 0001614

Permit Issued to: TABASCO DRILLING CORP

Company Address: BOX 1676 MOUNT LAUREL, NJ 08054

PROPERTY OWNER

Name: JOSEPH FALLON

Organization: United States Army

Address: 173 Riverside Avenue

City: Fort Monmouth State: New Jersey Zip Code: 07703

PROPOSED WELL LOCATION

Facility Name: US Army Facility

Address: Gosselin Avenue

County: Monmouth Municipality: Oceanport Boro Lot: N/A Block: N/A

Easting (X): 621305 Northing (Y): 539447
Coordinate System: NJ State Plane (NAD83) - USFEET

Local ID: M12MW13

SITE CHARACTERISTICS

PROPOSED CONSTRUCTION

WELL USE: MONITORING

Diameter (in.): 4

Depth (ft.): 25

Pump Capacity (gpm): 0

Drilling Method: Hollow Stem Augers

Attachments:

Other Use(s):

Regulatory Program Requiring Wells/Borings:

Case ID Number:

Deviation Requested: N

SPECIFIC CONDITIONS/REQUIREMENTS

Approval Date: September 14, 2010
Expiration Date: September 14, 2011

Approved by the authority of:
Bob Martin
Commissioner

John Fields, Acting Bureau Chief
Bureau of Water Systems and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Systems and Well Permitting
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
E201010533

MONITORING WELL RECORD

PROPERTY OWNER: JOSEPH FALLON

Company/Organization: United States Army

Address: 173 Riverside Avenue Fort Monmouth, New Jersey 07703

WELL LOCATION: US Army Facility

Address: Gosselin Ave.

County: Monmouth Municipality: Oceanport Boro Lot: N/A Block: N/A

Easting (X): _____ Northing (Y): _____
Coordinate System: NJ State Plane (NAD83) - USFEET

DATE WELL STARTED: 9/24/10
DATE WELL COMPLETED: 9/24/10

WELL USE: MONITORING

Other Use(s): _____

Local ID: M12MW-13

WELL CONSTRUCTION

Total Depth Drilled (ft.): 20 Finished Well Depth (ft.): 20 Well Surface: Above Grade

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt/Rating/Screen # Used (lbs/ch no.)
Borehole	0	20	10		
Casing	0	5	4	PVC	sch 40
Screen	5	20	4	PVC	.010

	Depth to Top (ft.)	Depth to Bottom (ft.)	Outer Diameter (in.)	Inner Diameter (in)	Material		
					Bentonite (lbs.)	Neat Cement (lbs.)	Water (gal.)
Grout	0	3	10	4		80	8
Gravel Pack	3	20	10	4		#1 & #00	

Grouting Method: Gravity method

Drilling Method: Hollow Stem Augers

ADDITIONAL INFORMATION

Protective Casing: Yes
Static Water Level: 8 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 1 hrs.
Method of Development: submersible pump
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Diedrich D-120
Health and Safety Plan Submitted? Yes

ATTACHMENTS:

GEOLOGIC LOG

0 - 20: Lt green, green GM - Silty gravels, gravel-sand-silt mixtures fine sand & clay or silt

ADDITIONAL INFORMATION:

Driller of Record: William A. Shinn, Jr., MASTER LICENSE # 0001587

Company: TABASCO DRILLING CORP

MONITORING WELL CERTIFICATION FORM B - LOCATION CERTIFICATION

Name of Owner: U. S. Army, Directorate of Public Works

Name of Facility: Fort Monmouth

Location: _____

Case Number(s): _____ (UST #, ISRA #, Incident #, or EPA #)

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
(This number must be permanently affixed to the well casing.) E201010533

Owners Well Number (As shown on application or plans): M12MW13

Geographic Coordinate NAD 83 (to nearest 1/10 of second):

Longitude: West 74° 02' 12.1" Latitude: 40° 18' 48.2"

New Jersey State Plane Coordinates NAD 83 to nearest 10 feet:

North 539,410 East 621,320

Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 10.58'

Source of elevation datum (benchmark, number/description and elevation/datum. If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation.)
NAVD 88 – North American Vertical Datum – 1988; as derived from Bench Mark # CW -201; Elevation 38.74' @ the southwest corner of a culvert headwall at the northwest corner of Intersection of Guam Lane and Corregidor Road (approximately 3.9' above ground).

Significant observations and notes: _____

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE — DATE: November 23, 2010

Michael C. Nolan — Lic. # 24 GS 03448800
PROFESSIONAL LAND SURVEYOR'S NAME AND LICENSE NUMBER
(Please print or type) Certificate of Authorization No. 24GA28159000

Chester, Ploussas, Lisowsky Partnership, LLC
100 Matawan Road, Matawan, New Jersey 07747 732-566-0297
PROFESSIONAL LAND SURVEYOR'S ADDRESS AND PHONE NUMBER

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Directorate of Public Works

September 17, 2010

Robert M. Confer, Chief
New Jersey Department of Environmental Protection
Bureau of Landfill & Hazardous Waste Permitting
401 E. State Street - P.O. Box 414
Trenton, New Jersey 08625-0414

Subject: Notification for Installation of Monitoring Wells and Soil Borings
Fort Monmouth – Main Post, New Jersey

Dear Mr. Confer:

In accordance with proviso number 13 of the Sanitary Disruption Permit issued by the Bureau of Landfill & Hazardous Waste Permitting to US Army Garrison, Fort Monmouth, on September 16, 2003, we hereby provide notice that starting on or about September 21, 2010, ten (10) groundwater monitoring wells will be installed at six (6) of the sanitary landfills located on the Main Post of Fort Monmouth. The soil boring program is anticipated to begin on or about October 1, 2010. The initial start dates are weather dependent. Figures indicating the locations of the monitoring wells and soil boring locations are included with the transmittal.

The proposed groundwater monitoring wells will be used to assist the US Army Garrison Fort Monmouth, Directorate of Public Works (DPW) evaluate groundwater quality conditions at Fort Monmouth – Main Post.

Upon completion of the installation of the monitoring wells and the soil boring program, a post-disturbance activity summary report will be submitted pursuant to proviso number 4 of the landfill disruption permit.

Thank you in advance for your assistance in the above reference matter.

Sincerely,

Joseph M. Fallon, CHMM
Chief, Environmental Division

c: Larry Quinn, NJDEP
file: enclosure

Hentschel, Peter CTR US USA

From: Appleby, Charles M Mr CIV USA AMC
Sent: Tuesday, September 21, 2010 5:08 PM
To: Hentschel, Peter CTR US USA
Cc: Syvarth, Howard M CTR US USA
Subject: RE: NJDEP verbal reply

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Red Category

Pete
Please copy this email and place it and the landfill disruption document in the monitoring well files for the applicable locations.

Chuck Appleby
Environmental Protection Specialist
IMNE-MON-PWE
173 Riverside Avenue
Fort Monmouth, NJ 07703
Ph. (732) 532-2692 FAX (732) 532-6263
Cell (732) 575-7028
Charles.Appleby@us.army.mil
ONLY PRINT WHEN YOU NEED TO AND RECYCLE

-----Original Message-----
From: Syvarth, Howard M CTR US USA
Sent: Tuesday, September 21, 2010 2:55 PM
To: Fallon, Joseph M Mr CIV USA IMCOM; Green, Wanda S CIV USA IMCOM; Appleby, Charles M Mr CIV USA AMC
Cc: Montgomery, John H CTR US USA; Hentschel, Peter CTR US USA; Youhas, Robert CTR US USA
Subject: NJDEP verbal reply

I was officially notified by Brian Pettit, NJDEP of their receipt of our 72-hour verbal notification to disrupt the landfill caps for the installation of the monitoring wells.

Guenther, Douglas C MONMOUTH USAG

From: Greg Zalaskus [Greg.Zalaskus@dep.state.nj.us]
Sent: Tuesday, November 16, 2004 1:36 PM
To: Douglas.Guenther@mail1.monmouth.army.mil
Cc: Ken Petrone
Subject: Re: GROUNDWATER ANALYSES REDUCTION (Part II)

Doug: The Department has completed a review of your November 16, 04 letter request, sent via e-mail, to reduce the groundwater sampling analysis at an additional five sites located at Main Most and Charles Woods as listed in the November 16, 04 letter. The Department hereby
approves your request as submitted. If you have any questions please
contact me.

Sincerely, greg

Gregory Zalaskus, Case Manager
NJDEP/DRMR/BCM
Greg.Zalaskus@dep.state.nj.us
609-984-2065 (direct)
609-633-1439 (fax)
609-633-1455 (main)

>>> "Guenther, Douglas C MONMOUTH USAG"
<Douglas.Guenther@mail1.monmouth.army.mil> 11/16/04 11:36AM >>> Greg,

Thank you for your prompt response to my letter dated November 10, 2004 regarding groundwater sample analyses reduction at seven sites on Ft. Monmouth. After further review of Ft. Monmouth's groundwater sampling program, it was determined an additional five sites need revisions to the constituents currently being analyzed to maintain a compliant and cost effective program. Attached is correspondence discussing analyses reduction at these five restoration sites as well as the site reports that will be submitted in the near future. Quarterly groundwater sampling at these sites will continue as indicated pending NJDEP receipt and review of said reports. A hard copy of this letter is on the way. Any questions please let me know.

Sincerely,

Douglas C. Guenther

Environmental Protection Specialist

U.S. Army, Directorate of Public Works

Attn: SELFM-PW-EV, Bldg. 173

Fort Monmouth, NJ 07703

Phone: 732-532-0986; Fax: 732-532-6263; DSN: 992-0986

E-mail: Douglas.Guenther@Mail1.Monmouth.Army.mil

Guenther, Douglas C MONMOUTH USAG

From: Guenther, Douglas C MONMOUTH USAG
Sent: Tuesday, November 16, 2004 11:37 AM
To: 'Greg Zalaskus'
Cc: John Prendergast; Fallon, Joseph M MONMOUTH USAG
Subject: GROUNDWATER ANALYSES REDUCTION (Part II)

Greg,

Thank you for your prompt response to my letter dated November 10, 2004 regarding groundwater sample analyses reduction at seven sites on Ft. Monmouth. After further review of Ft. Monmouth's groundwater sampling program, it was determined an additional five sites need revisions to the constituents currently being analyzed to maintain a compliant and cost effective program. Attached is correspondence discussing analyses reduction at these five restoration sites as well as the site reports that will be submitted in the near future. Quarterly groundwater sampling at these sites will continue as indicated pending NJDEP receipt and review of said reports. A hard copy of this letter is on the way. Any questions please let me know.

Sincerely,

DOUGLAS C. GUENTHER
Environmental Protection Specialist
U.S. Army, Directorate of Public Works
Attn: SELFM-PW-EV, Bldg. 173
Fort Monmouth, NJ 07703
Phone: 732-532-0986; Fax: 732-532-6263; DSN: 992-0986
E-mail: Douglas.Guenther@Mail1.Monmouth.Army.mil

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101

REPLY TO
ATTENTION OF

Directorate of Public Works

November 16, 2004

ATTN: Mr. Greg Zalaskus
State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street, 5th Fl., West Wing
PO Box 028
Trenton, New Jersey 08625-0028

RE: **REDUCTION OF GROUNDWATER SAMPLING ANALYSES (Part II) – MAIN POST&CHARLES WOODS**
Restoration Sites throughout Fort Monmouth, New Jersey

Dear Mr. Zalaskus:

As discussed during our telephone conversation on November 9, 2004 and in my recent correspondence dated November 10, 2004, this letter summarizes groundwater sampling revisions at an additional five active restoration sites on Fort Monmouth property. The Directorate of Public Works (DPW) and TECOM-Vinnell Services (TVS) personnel currently conduct quarterly groundwater monitoring at each of these sites.

The DPW will submit Remedial Investigation Reports (RIRs), prepared by VERSAR, Inc., requesting no further action (NFA) at three sites including Landfill M-4 (FTMM-04), Landfill M-14 (FTMM-14), and Site CW-6 (FTMM-28). One RIR/Remedial Action Work Plan (RAWP) for Site 1122 (FTMM-59) recommending natural attenuation and one RIR/RAWP for Site 283 (FTMM-61) recommending Oxygen Release Compound (ORC) injection and natural attenuation are also pending submittal.

As indicated in my previous correspondence, initial groundwater sampling at each site consisted of a comprehensive analytical program including volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); pesticides/polychlorinated biphenyls (PCBs); and TAL metals. Analytical results were then examined to establish potential contaminants of concern (COCs). Each site report presents the identified potential COCs based on the comparison of groundwater analytical results to the higher of the Practical Quantitation Limits (PQLs) and the NJDEP Groundwater Quality Criteria (GWQC) for Class II-A aquifers (NJAC 7:9-6, Table 1). Further evaluation of the potential COCs was then performed to assess contaminant occurrence/magnitude, transport (modeling), and risk to receptors, the environment and human health to determine if remedial action was warranted.

Based on report conclusions, Fort Monmouth DPW proposes the following revisions to the current groundwater sampling program at these sites to maintain a compliant and cost effective program. As discussed, proposed changes will be implemented immediately unless otherwise directed by the NJDEP.

The following table summarizes the revised sampling program at these sites:

No Further Action Requests - Submittal Pending

Site	Was Analyzed:	Revised Analysis:	Potential Contaminants of Concern
Landfill M-4 (FTMM-04)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Non-Native Metals
Landfill M-14 (FTMM-14)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and TAL Metals.	Tert-butyl-alcohol and Non-Native Metals
Site CW-6 (FTMM-28)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Lead
Natural Attenuation Request - Submittal Pending			
Site 1122 (FTMM-59)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs.	Methyl tert-butyl ether and Tetrachloroethene
ORC Injection/Natural Attenuation Request - Submittal Pending			
Site 283 (FTMM-61)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and TAL Metals.	Benzene, ethylbenzene, total xylenes and Lead

Groundwater sampling and monitoring will continue at these sites as indicated above, in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq. and *Fort Monmouth Standard Sampling Operating Procedure* (1997), pending NJDEP receipt and review of the discussed site documents.

If you should have any questions or comments, please contact me at (732) 532-0986.

Sincerely,

Douglas C. Guenther
Environmental Protection Specialist
Directorate of Public Works

cc: John Prendergast - NJDEP
File

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
Mail Code 401-05F
P.O. Box 420
Trenton, New Jersey 08625-0420
Telephone: 609-633-1455

BOB MARTIN
Commissioner

February 5, 2015

Wanda Green
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Approval

Re: *November 26, 2014 Response to Comments –on the Final Baseline Ground Water Sampling Report (August 2013)*
Fort Monmouth
Monmouth County
PI # G000000032
Activity Number: RPC000001

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed a review of the referenced Response to Comments dated November 26, 2014, submitted in response to the Department's comment letter dated July 3, 2014 regarding the Final Baseline Ground Water Sampling Report.

The *Response to Comments* agrees with or acknowledges the Department's comments for areas FTMM-03, FTMM-04, FTMM-05, FTMM-08, FTMM-12, FTMM-14, FTMM-22, FTMM-25, FTMM-53, FTMM-54, FTMM-55, FTMM-56, FTMM-57, FTMM-58, FTMM-59, FTMM-61, FTMM-64, and FTMM-66.

FTMM-18
The Department had indicated low-flow sampling must also be performed if Passive Diffusion Bag Sampling (PDBS) is conducted, for comparison purposes. The *Response to Comments* submittal contends as low-flow sampling has been historically conducted at this area, PDBS sampling only is appropriate. Based upon this reasoning, the Department agrees the performance via PDBS only is acceptable for the ensuing round of ground water sampling. The PDBS results are to be compared to the previous low-flow sampling results and presented in the forthcoming sampling report.

FTMM-68
The Department had expressed concern regarding the use of PDBS for long-term monitoring. FTMM-68 has not been fully characterized, and the use of PDBS for longer term monitoring is acceptable only for well characterized sites, as per the DEP's Field Sampling Procedures

Manual. As per information provided in the *Response to Comments* submittal, a Remedial Investigation to fully characterize the area is to be conducted in the near future using low-flow sampling methodology, and request approval for the use of PDBS to characterize contaminant concentrations in the interim. This is acceptable based on the stipulation that a full remedial investigation is to be performed. The November '14 *Response to Comments* (Section V), however, indicated the Remedial Investigation Workplan for FTMM-68 was awaiting DEP approval. Although some clarification was requested, the proposed remedial activities, soil and ground water, were approved for the FTMM-68 area via letter dated *January 8, 2014*, which addressed the RI/FS Workplan for FTMM-22, FTMM-53, FTMM-59 & FTMM-68.

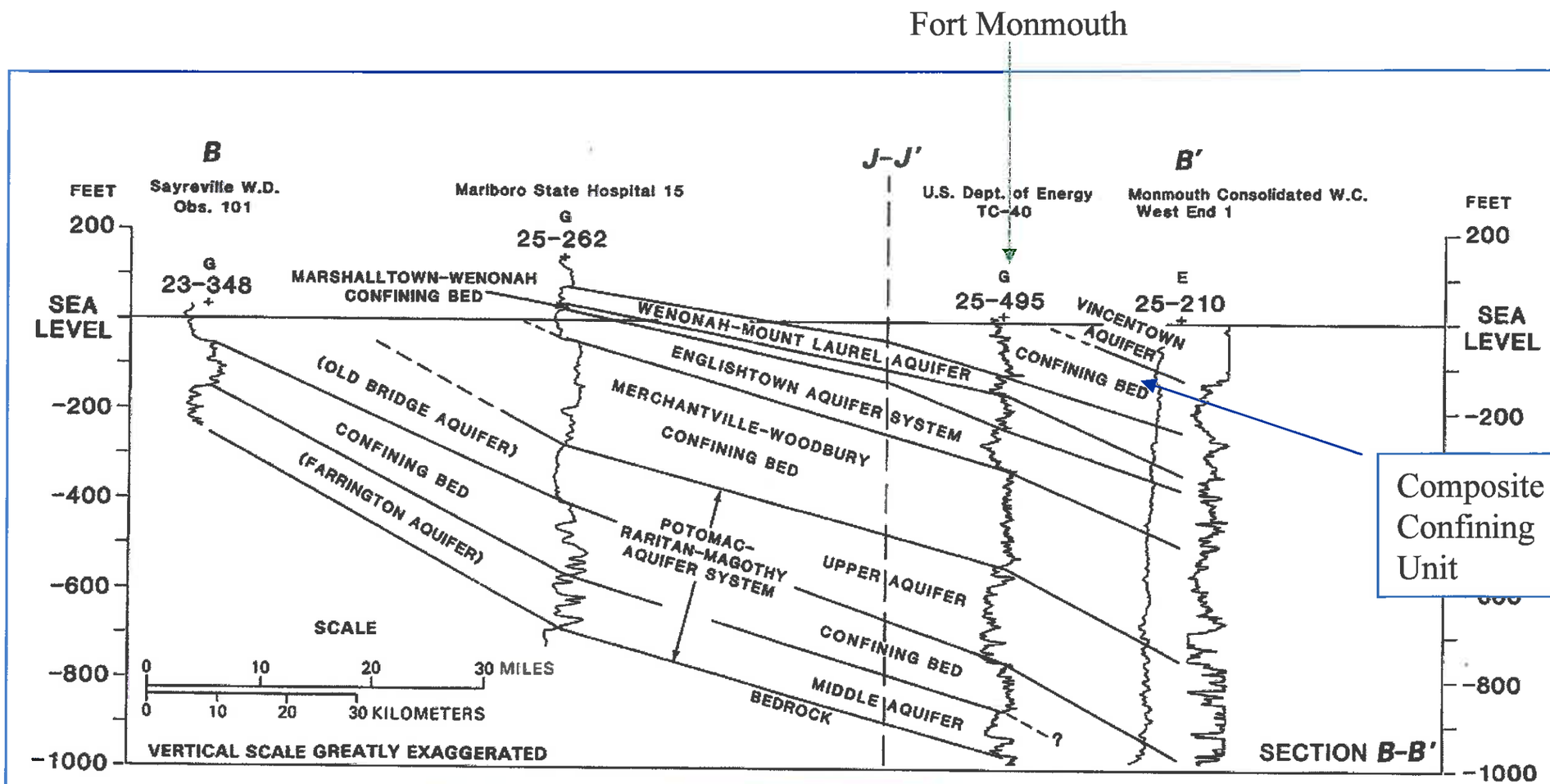
If you have any questions, please contact me at (609)984-6606, or via email at Linda.Range@dep.nj.gov.

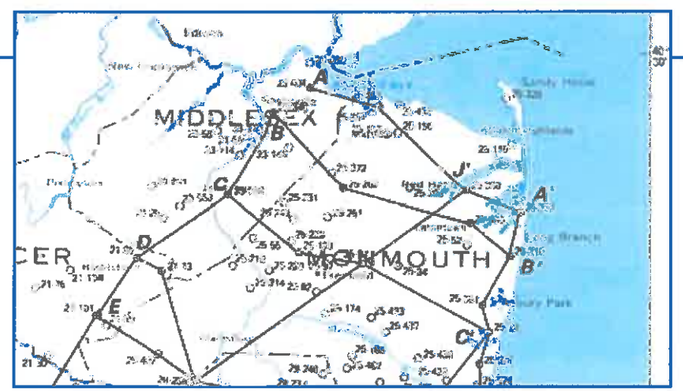
Sincerely,

Linda Range

Linda Range
Bureau of Case Management

cc: Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Frank Barricelli, RAB





Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 6-1

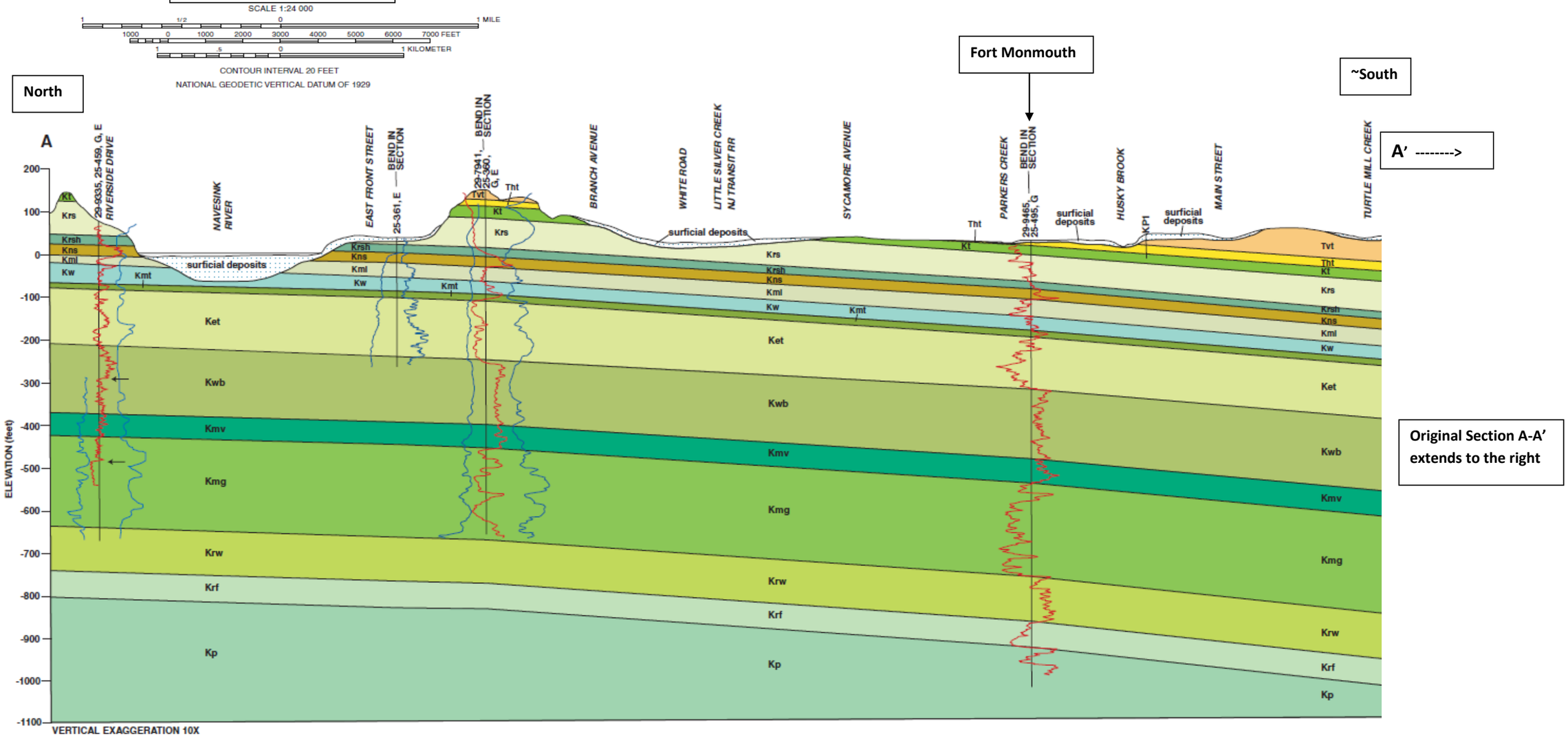
Regional Geologic Cross-Section
Site 1122 – Main Post
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

BEDROCK GEOLOGY OF THE LONG BRANCH QUADRANGLE MONMOUTH COUNTY, NEW JERSEY

by
Scott D. Stanford and Peter J. Sugarman
2010

Excerpt of Cross-Section A-A'



Original Section A-A' extends to the right

Description of Geologic Units Shown on Cross-Section A-A'

Tvt VINCENTOWN FORMATION—Glauconitic (5-20%) silty medium-to-coarse quartz sand, some fine-to-medium sand, some very coarse sand to very fine pebbles; yellow, reddish-yellow, olive-yellow, olive-brown; unstratified to weakly horizontally stratified. Coarse sands are locally iron-cemented into beds and masses as much as 10 feet thick. Lowermost 10-20 feet of the formation is silty fine-to-medium sand, with more glauconite than upsection. Total thickness of formation is 180 feet. Late Paleocene in age, based on foraminifera (Olsson and Wise, 1987; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991). Unconformably overlies the Hornerstown Formation.

Tht HORNERSTOWN FORMATION—Glauconite (>50%) clay and silty clay; olive, dark green, black where unweathered, olive-brown with brown to reddish-brown mottles where weathered; unstratified. Glauconite occurs primarily in soft grains of fine-to-medium sand size. Thickness is 25 to 30 feet. Early Paleocene in age, based on foraminifera (Olsson and others, 1997; Landman and others, 2004; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991; Miller and others, 2006). Unconformably overlies the Tinton Formation.

Kt TINTON FORMATION—Glauconitic (5-30%) silty medium-to-coarse and fine-to-medium quartz sand; reddish-brown, reddish-yellow, yellowish-brown where weathered, grayish-brown, brown, olive-brown where unweathered; unstratified to weakly horizontally stratified. Commonly iron-cemented into beds and masses as much as 15 feet thick. Uppermost 4-6 feet, just below contact with Hornerstown Formation, is a brown to olive-gray glauconitic clayey-silty fine sand to fine-sandy silt-clay ("New Egypt Formation" of Landman and others, 2004). Total thickness of Tinton is 30 to 40 feet. Late Cretaceous (late Maestrichtian) in age based on foraminifera, nannofossils, and ammonites (Landman and others, 2004) and strontium-isotope ratios (Sugarman and others, 1995). Overlies the Shrewsbury Member of the Red Bank Formation. Contact with Shrewsbury is not exposed in the Long Branch quadrangle. It is gradational over several feet in the Sandy Hook quadrangle, north of the Long Branch quadrangle (Minard, 1969), but may be unconformable in the Marlboro quadrangle, west of the Long Branch quadrangle (Sugarman and Owens, 1996).

Krs RED BANK FORMATION, SHREWSBURY MEMBER—Fine-to-medium quartz sand, minor medium-to-coarse sand, slightly silty, glauconitic (<5%), and micaceous; reddish-yellow, yellow where weathered, light gray and gray where unweathered; unstratified to weakly horizontally bedded; locally iron-cemented. As much as 100 feet thick. Late Cretaceous (late Maestrichtian) in age based on fossils in the underlying Sandy Hook Member; the Shrewsbury Member is unfossiliferous. Grades downward within 2-3 feet to the Red Bank Formation, Sandy Hook Member. On geophysical well logs, transition to Sandy Hook Member is marked by increased gamma-ray intensity and decreased resistance.

Krsh RED BANK FORMATION, SANDY HOOK MEMBER—Fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); brown to yellowish-brown where weathered, dark gray, olive-gray where unweathered; unstratified. Calcareous brachiopod, pelecypod, and gastropod fossils are common. As much as 20 feet thick. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils (Sugarman and Owens, 1996), foraminifera (Olsson, 1964; Olsson and Wise, 1987; Owens and others, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Grades downward within 2-3 feet into the Navesink Formation. On geophysical well logs, transition to Navesink is marked by increased gamma-ray intensity and slightly decreased resistance.

Kns NAVESINK FORMATION—Glauconitic (20-50%) clayey-silty fine-to-medium quartz sand to fine-sandy clayey silt; dark gray, gray, grayish-brown, olive-gray where unweathered, brown to yellowish-brown where weathered; unstratified. Glauconite occurs chiefly in soft grains of fine-to-medium sand size. Calcareous brachiopod, pelecypod, and gastropod fossils are common. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils and foraminifera (Olsson, 1964; Miller and others, 2006), macrofossils (Sohl, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Mount Laurel Formation. Contact with Mount Laurel is commonly marked by a sharp peak in gamma-ray intensity on geophysical well logs, with reduced intensity in the Mount Laurel.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kml MOUNT LAUREL FORMATION—Glauconitic (3-15%) fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; yellowish-brown where weathered, olive-gray to olive-brown where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. As much as 50 feet thick in the southern part of the quadrangle; thins to 20 feet to the north. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age, based on calcareous nannofossils and strontium-isotope ratios (Sugarman and others, 1991; Miller and others, 2006). Grades downward into the Wenonah Formation. On geophysical well logs, transition to Wenonah is generally marked by slightly decreased resistance and increased gamma-ray intensity.

Kw WENONAH FORMATION—Silty fine-to-very-fine quartz sand to fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); yellow, very pale brown where weathered, gray to pale-olive where unweathered; unstratified. As much as 40 feet thick. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age based on pollen (Wolfe, 1976) and ammonites (Kennedy and Cobban, 1994). Grades downward into the Marshalltown Formation. On geophysical well logs, transition to Marshalltown is marked by increased gamma-ray intensity.

Kmt MARSHALLTOWN FORMATION—Glauconitic (20-50%), slightly micaceous, silty-clayey fine-to-medium quartz sand, to fine-sandy clayey silt; olive-gray to olive-brown; unstratified. Thickness is 15 to 20 feet. In subsurface only. Late Cretaceous (middle Campanian) in age based on calcareous nannofossils, foraminifera, mollusks, and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Englishtown Formation. On geophysical well logs, contact with Englishtown is marked by decreased gamma-ray intensity and slightly increased resistance.

Ket ENGLISHTOWN FORMATION—Fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; micaceous and lignitic, with a trace (<1%) of glauconite; white and light gray where weathered, dark gray where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. In subsurface only. As much as 140 feet thick in the eastern part of the quadrangle, thins to 110 feet thick in the west. In the Asbury Park quadrangle to the south of the Long Branch quadrangle, and farther southwest in northern Ocean County, the Englishtown is divided into an upper and lower member based on the presence of a clay-silt facies in the middle of the formation that is distinctive on gamma-ray logs (Nichols, 1977; Sugarman and Owens, 1994; Miller and others, 2006). This facies is not well marked on gamma-ray logs in the Long Branch quadrangle (wells 29-9335, 29-7941, 29-9465, 29-6173, 29-23948, and 29-48307) and so the members are not mapped here. Late Cretaceous (middle to late Campanian) in age, based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), calcareous nannofossils, and strontium-isotope ratios (Miller and others, 2006). Grades downward into the Woodbury Formation. On geophysical well logs, transition to Woodbury is marked by increased gamma-ray intensity and decreased resistance.

Kwb WOODBURY FORMATION—Clay, silty clay, with minor thin beds of very fine quartz sand, slightly micaceous and lignitic; dark gray and black where unweathered, yellowish-brown to brown where weathered; unstratified. In subsurface only. As much as 240 feet thick in the eastern part of the quadrangle, thins to 160 feet thick in the central and western parts of the quadrangle. Late Cretaceous (early to middle Campanian) based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), and calcareous nannofossils (Miller and others, 2006). Grades downward into the Merchantville Formation. On geophysical well logs, transition to the Merchantville is marked by slightly increased gamma-ray intensity.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kmv MERCHANTVILLE FORMATION—Glauconitic (20-50%) clayey silt to sandy clayey silt, slightly micaceous; olive, dark gray, black where unweathered, olive-brown to yellowish-brown where weathered; unstratified. Thickness is 40 to 60 feet. In subsurface only. Late Cretaceous (early Campanian to Santonian) in age based on ammonites (Owens and others, 1977) and calcareous nannofossils (Miller and others, 2006). The Cheesequake Formation, a glauconitic clayey silt underlying the Merchantville, is mapped in outcrop in northern Monmouth and eastern Middlesex counties (Sugarman and Owens, 1996; Sugarman and others, 2005; Stanford and Sugarman, 2008) and in the subsurface both west and south of the Long Branch quadrangle (Sugarman and Owens, 1994, 1996). Because it is lithically similar to the Merchantville and cannot be easily distinguished from it on geophysical logs, it is not mapped separately here. If present, it is included here within the Merchantville, or uppermost Magothy Formation.

Kmg MAGOTHY FORMATION—Fine-to-medium quartz sand, some very-fine-to-fine sand and minor medium-to-coarse sand, micaceous, lignitic, and pyrite-bearing in places, with thin interbeds of silt and clay; white to yellow where weathered, light gray to gray where unweathered. Sand is cross-bedded to laminated. As much as 220 feet thick. In subsurface only. Late Cretaceous (Turonian-Santonian) in age, based on pollen (Christopher, 1979, 1982; Miller and others, 2006). Unconformably overlies the Raritan Formation, Woodbridge Clay member. On geophysical well logs, contact with the Woodbridge is marked by increased gamma-ray intensity.

In its outcrop area in eastern Middlesex County the Magothy is divided into 5 members. From bottom to top they include: South Amboy Fire Clay, Old Bridge Sand, Amboy Stoneware Clay, Morgan beds, and Cliffwood beds (Sugarman and others, 2005). The Old Bridge is a thick sand, the other members are interbedded clay-silt and fine sand. These members may extend downdip in the subsurface (Miller and others, 2006). Geophysical well logs in the Long Branch quadrangle (wells 29-21612, 29-23948, 29-21510, 29-9335, 29-7941, 29-9465, and 29-6173) show generally higher gamma-ray intensity and lower resistivity in the uppermost 50 feet of the formation, and again in the lowermost 30-40 feet, than in the middle 100-120 feet. The upper fine-grained beds may correspond to the Amboy Stoneware Clay and Morgan and Cliffwood beds, and the lower fine-grained beds may correspond to the South Amboy Fire Clay. The middle sand may correspond to the Old Bridge Sand.

Krw RARITAN FORMATION, WOODBRIDGE CLAY MEMBER—Clay and silt, micaceous, lignitic, and pyrite-bearing; gray and black where unweathered, white to brown where weathered; with minor thin interbeds and laminas of white, yellow, and light gray very-fine-to-fine quartz sand. As much as 110 feet thick. In subsurface only, penetrated by wells 29-9465 and 29-1921. The driller's log for well 29-2366 in Eatontown reports "weathered bedrock", with no further information, beneath the Magothy Formation, at a depth of 875-891 feet. This depth is anomalously shallow for the basement surface, suggesting that the material may be weathered clay of either the Woodbridge or South Amboy Fire Clay member of the Magothy. The Woodbridge is Late Cretaceous (late Cenomanian) in age based on pollen (Christopher, 1979) and ammonites (Cobban and Kennedy, 1990). Grades downward into the Raritan Formation, Farrington Sand member. Transition to the Farrington is marked by decreased gamma-ray intensity on geophysical well logs.

Krf RARITAN FORMATION, FARRINGTON SAND MEMBER—Fine-to-coarse quartz sand, some coarse-to-very-coarse sand, minor beds of clay and silt; white and yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded. As much as 60 feet thick. In subsurface only, penetrated in well 29-9465. Late Cretaceous (Cenomanian) in age based on pollen (Christopher, 1979). Unconformably overlies the Potomac Formation. Contact with Potomac is marked by increased gamma-ray intensity on geophysical well logs.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kp POTOMAC FORMATION—Fine-to-medium quartz sand, some coarse-to-very-coarse sand, with beds of clay and silt; white, red, yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded, clays are in beds as much as 8 feet thick. More than 90 feet thick, full thickness not penetrated in the Long Branch quadrangle. In subsurface only, partially penetrated in well 29-9465. Late Cretaceous (Albian-Cenomanian) based on pollen (Sugarman and Owens, 1996; Miller and others, 2006), which indicates that the Potomac in this area corresponds to the Potomac Formation, unit 3, of Doyle and Robbins (1977).

BEDROCK GEOLOGY OF THE LONG BRANCH QUADRANGLE MONMOUTH COUNTY, NEW JERSEY

by
Scott D. Stanford and Peter J. Sugarman
2010

Excerpt of Cross-Section A-A'

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

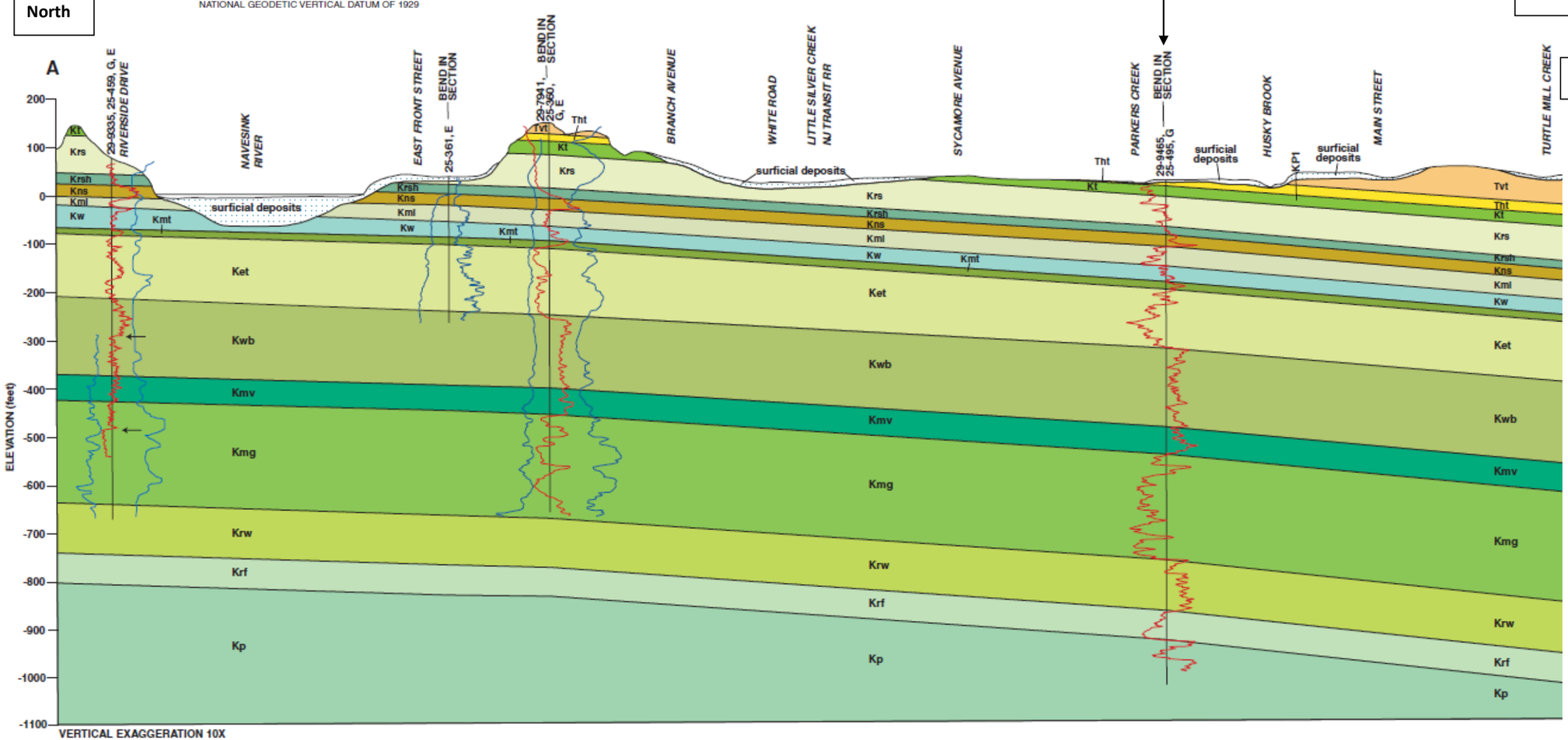
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

North

Fort Monmouth

~South

A' -------->



Original Section A-A' extends to the right

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B1

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.01	1	SAND, fine/ medium - dark brown some clay	1033	0.04-PPM
12					
18	3420.02	2	SAND, medium/coarse - lt.tan with gravel	1033	1.0-PPM
24			CINDERS		
30			Alt. Sand Dark Green tan with clay layers and some organic natural material		
36					
42					

10-07-1999 X:\M&TECH5\M12\M12-B01.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B2

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.03	1	Fine Sand Cinders and Tan/Brown	1110	0.06-PPM
12			CLAYEY SAND, Fine- brown/Tan Cinders		
18	3420.04	2		1110	0.06-PPM
24					
30			Black Clay & Cinders		
36			CLAY black With Glass Fragments		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B02.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B3

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.05	1	SAND, medium/fine - Orange/ Tan/ Dark Brown With Cinders and Gravel	1130	1.0-PPM
12			SAND, fine - with Cinders		
18	3420.06	2		1130	8.0-PPM
24			SAND, fine - With Dark Green Fine Sands		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B03.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B4

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.07	1	SAND, medium - tan/brown	1156	3.0-PPM
12		2	CLAY brown with fine sands		
18	3420.08		CLAY black with organic materials	1156	1.0-PPM
			CLAY black with very fine green/gray sand		
24			Cinder Material		
			CLAY black with gray fine sand		
30			CLAY black with Cinders		
36					
42					

10-07-1999 X:\WTECH5\M12\M12-B04.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B5

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.09	1	SAND, fine - tan/ orange/ yellow with cinder fragments	1300	1.8-PPM
12			SAND, fine - With Cinders and Coal Fragments		
18	3420.10	2		1300	1.0-PPM
24			CLAY black with organic material and fine sand		
30			CLAY black with organic material and fine sand		
36					
42			CLAY with medium sand		
48					

10-27-1999 X:\MTECH5\M12\M12-B05.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B6

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			CLAYEY SILT, dark brown with organic materials		
6	3420.11	1		1325	0.08-PPM
12					
18	3420.12	2		1325	0.40-PPM
			SAND, fine - brown yellow orange		
24					
			SAND, fine - green/ orange with Clay		
30					
36			SAND, fine - Black/ green with Clay		
42			WOOD Board Material		
48					

10-07-1999 X:\MTECH5\M12\M12-B06.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B7

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.13	1	LOAMY Silt with fine sand brown and organic material	1355	2.0-PPM
12					
18	3420.14	2		1355	1.0-PPM
24			CLAYEY SILT, fine - brown and fine sand		
30			SILTY SAND, fine - black/brown with fine sand green		
			WOOD Debris		
36			Mixed Sands with Fill Material: Cinders, Plastic and Glass		
42					
48			SAND, fine - green, oily, oil odors 70 ppm OVA		
54					

10-08-1999 X:\MTECH5\M12\M12-B07.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B8

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-19-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.15	1	SAND, medium/fine	1445	0.0-PPM
12					
18	3420.16	2		1445	0.0-PPM
24			SAND, fine/ medium brown/orange with black angular fragments		
30			CLAYEY SAND, fine - with black wafer material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B08.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B9

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-19-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3420.17	1	SAND, medium/fine - brown	1517	0.0-PPM
12			SAND, medium/fine - fragments		
18	3420.18	2		1517	0.0-PPM
24			SAND, fine		
30			CLAYEY SILT, black with some fine sand		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B09.BOR

000051

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B10

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.02	1	SAND, fine - brown/tan	1058	0.0-PPM
12					
18	3424.03	2	CLAYEY SILT, black with Cinders	1058	0.0-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B10.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B11

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6			SAND, fine/ medium brown orange/yellow with some gravel		
	3424.04	1		1135	0.0-PPM
12					
18	3424.05	2		1135	0.0-PPM
24					
30					
			Cinder Material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B11.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B12

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.06	1	SAND, fine - brown	1150	0.08-PPM
12					
18	3424.07	2		1150	0.06-PPM
24			SANDY CLAY, brown/green		
30			CLAYEY SILT, green		
36			CINDERS		
42					

10-07-1999 X:\MTECH5\M12\M12-B12.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B13

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3424.08	1	SAND, brown orange/green	1213	0.0-PPM
12					
18	3424.09	2	CINDERS and Sand	1213	0.0-PPM
24			SILTY CLAY, fine - sand with organic material		
30					
36					
42					

10-27-1999 X:\WTECH5\W12\M12-B13.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B14

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, orange-brown		
6	3424.10	1		1256	0.0-PPM
12					
18	3424.11	2		1256	0.0-PPM
24			SAND, brown		
			SAND, green-yellow with some clay		
30			SANDY SILT, green orange		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B14.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B16

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.14	1		1423	0.0-PPM
12					
18	3424.15	2		1423	0.0-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B16.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B17

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6			Sands Cinders		
	3424.16	1		1443	0.0-PPM
12					
18	3424.17	2		1443	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B17.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B18

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-20-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.18	1		1500	0.0-PPM
12					
18	3424.19	2		1500	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B18.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B19

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-20-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			Sands Cinders		
6	3424.20	1		1520	0.0-PPM
12					
18	3424.21	2		1520	0.0-PPM
24					
30			Clay with organic material		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B19.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B20

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
6	3425.02	1	SAND, fine - brown/tan	0937	0.0-PPM
12					
18	3425.03	2		0937	0.0-PPM
24			Cinders SAND, fine - black		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B20.BOR

000062

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B21

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, green, brown, orange with fill material		
6					
	3425.04	1		1005	0.0-PPM
			CLAYEY SAND, black/brown with small angular gravel		
12					
18	3425.05	2	CLAYEY SILT, orange	1005	0.0-PPM
			SAND, fine - black/green		
24					
30					
36					
42					

10-08-1999 X:\MTECH5\M12\M12-B21.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B22

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, fine - black with some fill material		
6	3425.06	1		1025	0.0-PPM
12			SAND, fine - green		
			SAND, fine - tan/orange		
18	3425.07	2	CLAYEY SILT, fine - olive green	1025	0.0-PPM
24			SAND, fine/ medium black ang. gravels		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B22.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B23

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-23-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, fine - orange		
6	3425.08	1		1111	0.0-PPM
12					
18	3425.09	2		1111	0.8-PPM
24			CLAYEY SILT, fine - orange/green		
30			CLAY with some SAND, fine		
36			SAND, fine - orange		
			SAND, fine - green		
42					
48			SAND, fine - orange		
54					

10-27-1999 X:\MTECH5\M12\M12-B23.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B24

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			TURF		
			SAND, medium - brown		
6	3425.10	1		1130	0.00-PPM
12					
18	3425.11	2		1130	0.04-PPM
			SAND, medium/fine - gray		
24					
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B24.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B25

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SAND, medium/fine - olive tan		
6	3425.12	1		1150	0.08-PPM
12					
18	3425.13	2		1150	0.06-PPM
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B25.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B26

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium - black/brown		
6	3425.14	1		1155	0.04-PPM
			SAND, medium - orange/yellow		
12					
18	3425.15	2	CLAYEY SAND, fine - orange/green	1155	0.04-PPM
24			SANDY CLAY, orange/green		
30			SAND, medium - green		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B26.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B27

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine - green/orange		
6	3425.16	1		1410	0.00-PPM
12					
18	3425.17	2		1410	0.04-PPM
24			SAND, fine - green/orange with some CINDERS		
			CINDERS		
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B27.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B28

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY CLAY, olive orange		
6	3425.18	1		1430	0.08-PPM
12					
18	3425.19	2		1430	0.06-PPM
			WOOD DEBRIS		
			SAND, fine - with some CINDERS		
24					
			ASPHALT Material		
30					
			CLAYEY SAND, fine - looam black		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B28.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B29

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3425.20	1	SANDY CLAY, well sorted green/orange	1502	0.00-PPM
12					
18	3425.21	2		1502	0.00-PPM
24			CLAYEY SAND, fine - green/orange with some CINDERS		
			CINDERS		
30			SAND, fine - orange		
			CLAYEY SILT, black		
36					
42					
			fill material wood , brick and glass		
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B29.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B30

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-23-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - with some fill material throughout		
6	3425.22	1		1527	0.00-PPM
12					
18	3425.23	2		1527	0.06-PPM
24			SANDY CLAY, fine - brown/green		
			CLAYEY SAND, medium - black		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B30.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B31

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY SILT, fine - brown with fill material brick & coal		
6	3428.02	1		0900	0.00-PPM
12			SANDY SILT, fine - olive green		
18	3428.03	2		0900	0.06-PPM
			SAND, fine - fill material brick, coal, asphalt, cinder		
24					
			SAND, medium - olive green, tan, orange		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B31.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B32

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SANDY CLAY, brown		
6	3428.04	1		0925	0.00-PPM
			SANDY CLAY, brown with asphalt fill		
12					
			CLAYEY SAND, fine - olive green		
18	3428.05	2		0925	0.00-PPM
			CINDERS and SAND, fine - black		
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B32.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B33

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			CLAYEY SAND, medium - with brick & gravel fill		
6	3428.06	1		1000	0.00-PPM
12			CLAYEY SAND, & SILT with some gravels		
18	3428.07	2		1000	0.00-PPM
24			CLAYEY SAND, medium - orange tan w/ 50% gravels		
			CINDERS		
30					
36					

10-08-1999 X:\MTECH5\M12\M12-B33.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B34

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6	3428.08	1		1025	0.00-PPM
12			ASPHALT material mixed with sand M/F		
18	3428.09	2	CLAYEY SAND, fine - Silt olive green/orange/yellow	1025	0.00-PPM
24					
30					
36			CINDERS		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B34.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B35

(Page 1 of 1)

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown with scant fragments of brick and coal bits <2%		
6	3428.10	1		1109	0.00-PPM
12					
18	3428.11	2	SAND, orange/yellow-olive green-fine with <1% fragments of coal	1109	0.00-PPM
24					
			SAND, medium/fine - & some tracing of glass fragments		
30					
36					
42					
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B35.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B36

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - brown/orange		
6			SAND, medium - brown/olive green		
	3428.12	1		1150	0.00-PPM
12					
	3428.13	2		1150	0.04-PPM
18					
24					
30			SAND, medium/coarse - olive green		
36					

10-07-1999 X:\MTECH5\M12\M12-B36.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B37

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
			Turf		
			CINDERS & mixed Sands		
6					
	3428.14	1		1300	0.08-PPM
12					
			SAND, fine		
18	3428.15	2		1300	0.00-PPM
24					
			SAND, medium/fine - tan/olive green		
30					
36					
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B37.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B38

(Page 1 of 1)

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - with some CINDERS		
6			CINDERS with SAND, medium/fine - brown/black		
	3428.16	1		1319	0.00-PPM
12					
		2			
18	3428.17		SAND, medium/fine - light brown	1319	0.00-PPM
24					
			SAND, fine - light brown		
30			SAND, medium - orange		
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B38.BOR

000080

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B39

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-24-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium - dark brown		
6			CINDERS black		
			SAND, fine - with brick colored material		
	3428.18	1	SAND, medium/coarse - tan with small gravels<5%	1345	0.00-PPM
12					
			SAND, medium/fine - gray/brown		
18	3428.19	2		1345	0.00-PPM
			SAND, fine - black Stained		
24					
			SAND, medium/fine - light brown		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B39.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B40

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3428.20	1	SAND, fine - with some CINDERS	1420	0.00-PPM
12					
		2	SAND, fine/ medium with coal & wood debris		
18	3428.21			1420	0.00-PPM
24					
			CINDERS & Sands		
30					
36					
			Wood Material (Pilings?)		
42					
			SAND, very fine - orange/olive green		
48					
54					

10-07-1999 X:\MTECH5\M12\M12-B40.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B41

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3428.22	1	SAND, fine/ medium dark brown	1459	0.00-PPM
12		2	SAND, medium/fine - orange/brown with trace green		
18	3428.23			1459	0.00-PPM
24					
30			SAND, medium/fine - orange/olive green with trace green		
36			CINDERS		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B41.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B42

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.02	1	SAND, medium/fine - gray/brown with small coal fragments	0913	0.00-PPM
12					
18	3432.03	2		0913	0.00-PPM
24			SAND, medium/fine - dark brown with large coal fragments		
30			CINDERS		
36			CLAY with organic material		
42					

10-07-1999 X:\MTECH5\M12\M12-B42.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B43

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SAND, fine - with very small brick fragments dark brown		
	3432.04	1	SAND, fine - orange/olive green with cinder fragments	0942	0.00-PPM
12			Coal and Cinder Fragments		
18	3432.05	2	SAND, fine - orange/olive green	0942	0.00-PPM
24			SAND, fine - dark brown/olive green with iron staining		
30					
36					

10-07-1999 X:\MTECH5\M12\M12-B43.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B44

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6					
	3432.06	1		1013	0.04-PPM
			SANDY SILT, fine - olive green/orange		
12					
		2			
18	3432.07			1013	0.02-PPM
24					
			SANDY SILT, fine/ medium - orange/olive green		
			SAND, CINDERS fine - black		
30					
36					
			SAND, fine - dark olive green		
42					
48					
54					

10-27-1999 X:\MTECH5\M12\M12-B44.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B45

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6	3432.08	1		1125	0.00-PPM
12			CINDERS with mixed sands		
18	3432.09	2		1125	0.08-PPM
			SAND, medium/fine - orange/yellow		
24					
30			SAND, medium/fine - tan/orange		
36			SAND, medium/coarse - tan		
42					
48					
54					

10-27-1999 X:\MTECH5\M12\M12-B45.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B46

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.10	1	SAND, CINDERS	1147	0.02-PPM
12			SAND, medium/fine - tan		
18	3432.11	2		1147	0.00-PPM
24					
30			SAND, medium/coarse - tan		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B46.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B47

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.12	1	SAND, fine - dark brown with mixed cinders	1205	0.02-PPM
12			CINDERS with mixed sands black		
18	3432.13	2	SAND, fine - orange/tan	1205	0.00-PPM
24			SAND, fine - olive green		
			Wood material		
30			CLAYEY SAND, tan/olive green		
36			WOOD		
42					

10-27-1999 X:\MTECH5\M12\M12-B47.BOR

000089

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B48

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 3-25-98	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	3432.14	1	SAND, fine/ medium - dark brown	1306	0.00-PPM
12			SAND, fine - orange/yellow		
18	3432.15	2	SAND, fine - dark gray with coal fragments	1306	0.00-PPM
24			SAND, fine - gray with orange mottling		
30			SAND, fine - gray/tan/orange		
36					

10-07-1999 X:\MTECH5\M12\M12-B48.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B49

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, medium/fine - dark brown		
6			SAND, fine/ medium - tan/brown/orange with brick frag.		
	3432.16	1		1330	0.00-PPM
12					
18	3432.17	2		1330	0.04-PPM
24					
			SAND, fine - orange with cinder and coal material		
30			SAND, fine/ medium - orange/brown with brick & cinder fragments <1%		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B49.BOR

000091

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B50

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine/ medium - tan/ dark brown		
6	3432.18	1		1420	0.00-PPM
12			CINDERS with mixed sands		
18	3432.19	2	CLAYEY SAND, fine - loam light gray/green	1420	0.00-PPM
24			CLAYEY SAND, fine - olive green/orange		
			SAND, fine - light gray/orange		
30			SANDY SILT, light gray/olive green		
			SILTY SAND, fine - dark brown with some mottling iron stain medium sand		
36			SAND, coarse - with small gravel and tar paper material		
42					
48					

10-07-1999 X:\MTECH5\M12\M12-B50.BOR

000092

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B51

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 3-25-98
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine - with some gravel		
6	3432.20	1		1446	0.00-PPM
12					
18	3432.21	2		1446	0.00-PPM
			SAND, fine - with some <1% coal fragments		
24					
30					
36					
42					

10-07-1999 X:\MTECH5\M12\M12-B51.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B52

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.02	1	SILTY SAND, fine - olive green / tan / orange	1055	0.00-PPM
12					
18	4748.03	2		1055	0.00-PPM
24			SAND, med. / fine - tan w/ some Chip, coal & Cement bits		
30			SAND, med. / fine - tan		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B52.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B53

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.04	1	SILTY SAND, fine - brown	1130	0.00-PPM
12		2	SILTY SAND, fine - olive green / brown		
18	4748.05		SAND, fine - orange / some silt	1130	62.0 PPM
24			CINDERS		
30			SAND, fine / med. - gray / black- lt. olive green		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B53.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B54

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SILT -fine sand/brown		
	4748.06	1		1155	0.00-PPM
6					
12					
			fine sand/ cinder material		
18					
			SILT -brown / gray / some fine / med. SAND,		
24	4748.07	2		1155	400 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B54.BOR

000096

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B55

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.08	1	SILTY CLAY and fine sand-brown	1305	100 PPM
12					
18					
24	4748.09	2	SANDY CLAY and fine sand dk. olive green (Possible Native Soils)	1305	25 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B55.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B56

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.10	1	SILTY CLAY and fine sand-brown	1330	0.0 PPM
12					
18			SANDY CLAY and fine sand dk. olive green		
24	4748.11	2	(Possible Native Soils)	1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B56.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B57

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.12	1	SILT - fine sand,olive green / tan / orange	1350	0.0 PPM
12					
18					
24	4748.13	2	SAND, med. / fine - tan with small chips, COAL and cement bits	1350	0.0 PPM
30			SAND, med. / fine - tan		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B57.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B58

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.14	1	SILT - fine sand,olive green / tan / orange	1415	0.0 PPM
12					
18					
24	4748.15	2	SAND, med. / fine - tan with small chips, COAL and cement bits	1415	0.0 PPM
30			SAND, med. / fine - tan (Asphalt Pieces @ 6")		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B58.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B59

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.16	1	SILT fine sand. -olive green / brown	1430	0.0 PPM
12			Mixed SAND, coarse / fine with COAL,CINDERS and small sub-round gravel-orange / olive green / dk. gray		
18					
24	4748.17	2	SILT/ fine sand-lt. olive green / yellow	1430	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B59.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B60

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4748.18	1	Mixed SAND and gravels	1500	0.0 PPM
12					
18					
24	4748.19	2	CINDERS and COAL	1500	0.0 PPM
30			SILTY CLAY, cinders/ coal material olive green / black (wet)		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B60.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B61

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-26-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine / med. - orange		
6	4748.20	1		1510	0.0 PPM
12					
18					
24	4748.21	2		1510	0.0 PPM
30			SAND, fine - orange / lt. olive green		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B61.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B63

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.02	1	SAND, fine with some silt - brown	1000	0.0 PPM
12			SAND, fine with some silt - gray / brown		
18					
24	4754.03	2		1000	40.0 PPM
30			woody materials		
36			crushed gravels		
42					

10-22-1999 X:\MTECH5\M12\M12-B63.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B64

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.04	1	SILT/ fine - sand - olive green/ tan / orange	1017	0.0 PPM
12					
18					
24	4754.05	2	SILT med. / fine - tan w/ small chips, coal, and cement bits	1017	0.0 PPM
30			SAND, med. / fine - tan (Possible Native Material)		
36					
42					

10-22-1999 X:\WTECH5\M12\M12-B64.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B65

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.06	1	SILT/ clay loam w/ fine sand olive green / orange / yellow	1030	0.0 PPM
12					
18					
24	4754.07	2		1030	20.0 PPM
30			SAND, fine / med. - orange (Possible Native Material)		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B65.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B66

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.08	1	SILT fine sand - w/ some Clay loam - olive green / yellow/ orange	1050	9.0 PPM
12					
18					
24	4754.09	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B66.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B67

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.10	1	SAND, coarse / fine - lt. olive green / tan / brown w/ some CINDER material @ 8-10"	1105	0.0 PPM
12					
18					
24	4754.11	2		1105	0.0 PPM
30			CINDERS		
36			Clay and SAND, fine / med. - lt. olive green gray / dk. gray		
42					

10-27-1999 X:\MTECH5\M12\M12-B67.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B68

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA			
0			Turf					
6	4754.12	1	SAND, fine - w/ some SILT and small sub. angular & round small quartz grains-olive green / orange	1118	0.0 PPM			
12								
18								
24	4754.13	2	CINDERS ,COAL and fine - SAND, black	1118	20.0 PPM			
30			CLAYEY SILT, dk. gray w/ some coal and cinder material					
36								
42								

10-27-1999 X:\MTECH5\M12\M12-B68.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B69

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.14	1	SAND, med. / fine - orange	1145	0.0 PPM
12					
18					
24	4754.15	2		1145	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B69.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B70

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4754.16	1	SILT, fine - SAND, brown	1335	0.0 PPM
6					
			SILT, fine - SAND, olive green / orange / tan		
12					
18					
24	4754.17	2		1335	0.0 PPM
30					
			SILT, fine - SAND, brown (Possible Native Soil)		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B70.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B71

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4754.18	1	SILT, fine - SAND, olive green / orange	1349	0.0 PPM
12					
18			SILT, fine - SAND, brown (Possible Native Soil)		
24					
30	4754.19	2		1349	0.0 PPM
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B71.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B72

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-27-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SILT, fine - SAND, olive green / orange		
	4754.20	1		1410	0.0 PPM
12					
18					
24	4754.21	2		1410	0.0 PPM
30			SILT, fine - SAND, brown		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B72.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B73

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-27-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4754.22	1	Turf	1430	0.0 PPM
6			SILT, fine - tan / yellow w/ some cinder material		
12					
18			SAND, fine / med. - gray		
			SAND, med. / fine - tan/ olive green/ brown		
24	4754.23	2		1430	0.0 PPM
30			Clay lt. green/ gray w/ gray / black SILT		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B73.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B74

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.02	1	SAND, fine w/ some SILT - olive green / brown	0910	0.0 PPM
12					
18			CINDERS		
24	4760.03	2		9010	0.0 PPM
			CLAYEY SILT, fine / SAND,olive green		
30			woody material		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B74.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B75

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.04	1	SILT, fine SAND,olive green / orange	0930	0.0 PPM
12					
18					
24	4760.05	2		0930	0.0 PPM
			CINDERS		
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B75.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B76

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.06	1	SAND, fine w/ some SILT, olive green and brown	1019	0.0 PPM
12			Clay , SILT and fine SAND, dk. gray and black w/ some leaf material @ 28"		
24	4760.07	2		1019	0.0 PPM
30			SAND, med. / fine - gray		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B76.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B77

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.08	1	SAND, fine / med. - w/ some SILT/ brown (Possible Native Soil)	1040	0.0 PPM
12					
18					
24	4760.09	2		1040	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B77.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B78

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.10	1	SILT- fine SAND,olive green / orange	1055	10.0 PPM
12					
18			SAND, fine / med. - olive green / orange		
24	4760.11	2		1055	0.0 PPM
			SAND, and organic material (leaves)		
30			SAND, med. / coarse - lt. gray w/ small round sub ang. granules		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B78.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B79

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, fine / med. - orange / olive green		
6	4760.12	1		1115	0.0 PPM
			CINDERS		
12			CLAYEY SILT, and fine SAND, olive green / orange		
18			SAND, fine / med. - gray w/ some wood and rag material		
24	4760.13	2		1115	20.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B79.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B80

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.14	1	SAND, SILT fine - olive green / orange	1130	0.0 PPM
12					
18			CINDERS		
24	4760.15	2		1130	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B80.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B81

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.16	1	SAND, fine - brown	1149	0.0 PPM
12					
18			SILT -fine - SAND, olive green		
24	4760.17	2		1149	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B81.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B82

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.18	1	SAND, fine / med. - brown	1305	0.0 PPM
12					
18			SILT , Clay and fine sand- black		
24	4760.19	2	Clay , olive green / dk. olive green w/ some organic material	1305	40.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B82.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B83

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.20	1	SILT , fine SAND, olive green / brown	1340	0.0 PPM
12					
18			Clay - SILT(olive green)w/ cinders -		
24	4760.21	2		1340	0.0 PPM
30			CLAYEY SAND, med. / fine - dk. olive green		
36			CLAYEY SILT, fine SAND, - olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B83.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B84

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.22	1	SILT , fine SAND, olive green / brown	1405	0.0 PPM
12					
18			Clay - SILT(olive green)w/ cinders -		
24	4760.23	2		1405	0.0 PPM
30			CLAYEY SAND, med. / fine - dk. olive green		
36			CLAYEY SILT, fine SAND, - olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B84.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B85

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.24	1	SILT, fine sand - brown	1423	0.0 PPM
12					
18			Clay , SILT , fine sand(olive green) and cinders -		
24	4760.25	2		1423	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B85.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B86

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.26	1	CLAYEY SILT, and fine sand/ olive green	1430	0.0 PPM
12					
18					
24	4760.27	2		1430	0.0 PPM
			cinders -		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B86.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B87

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-30-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.28	1	SAND, fine -dk. olive green	1458	0.0 PPM
12					
18					
24	4760.29	2		1458	40.0 PPM
30			cinders		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B87.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B88

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-30-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4760.30	1	SILT, fine SAND, -brown	1514	0.0 PPM
12			SAND, fine / med. - olive green		
18					
24	4760.31	2		1514	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B88.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B89

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SILT, fine SAND, -brown		
6	4762.02	1		0950	0.0 PPM
12			SILT, fine SAND, w/ some Clay / olive green		
			CINDERS		
18					
24	4762.03	2		0950	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B89.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B90

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA			
0			Turf					
6			SAND, fine / med. - tan / orange w/ some small round granules					
	4762.04	1		1020	20.0 PPM			
12								
18								
24	4762.05	2		1020	0.0 PPM			
30								
36								
42								

10-22-1999 X:\MTECH5\M12\M12-B90.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B91

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SILT, fine SAND, - brown		
6	4762.06	1	CINDERS	1033	0.0 PPM
12					
			SAND, fine - olive green / orange		
18					
24	4762.07	2		1033	0.0 PPM
			SAND, fine / very fine - lt. gray/ dk. gray		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B91.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B92

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.08	1	SILT, fine SAND, - olive green / orange / tan	1055	400 PPM
12					
18					
24	4762.09	2	CINDERS	1055	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B92.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B93

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
			SAND, SILT, fine - olive green / orange / tan		
	4762.10	1		1110	20.0 PPM
6					
12					
18					
			SILT - Clay / fine SAND, olive green / orange		
24	4762.11	2		1110	20.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B93.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B94

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.12	1	SILT, fine SAND - olive green / orange	1125	0.0 PPM
12					
18					
24	4762.13	2	CINDERS	1125	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B94.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B95

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.14	1	SAND, fine / med. - w/ some SILT / brown / lt. brown	1145	0.0 PPM
12					
18			SILT, Clay, fine SAND - olive green		
24	4762.15	2		1145	0.0 PPM
30			CINDERS		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B95.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B96

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.16	1	SILTY CLAY, fine / med. - SAND, brown / tan	1305	0.0 PPM
12					
18			SANDY CLAY, SILT / black / gray (orange Clay)		
24	4762.17	2		1305	100-PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B96.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B97

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.18	1	SAND, SILT -fine / orange / brown	1340	0.0 PPM
12					
18					
24	4762.19	2	SAND, med. / fine - orange	1340	0.0 PPM
30			SILT and SAND, med. / fine - brown		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B97.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B98

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.20	1	SAND, fine / very fine - w/ some SILT / tan / brown / lt. olive green	1400	0.0 PPM
18			SAND, med. / fine - w/ some SILT/ dk. olive green		
24	4762.21	2		1400	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B98.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B99

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.22	1	SILT- fine SAND, tan	1420	0.0 PPM
12					
18			CINDERS		
24	4762.23	2	SILT, Clay - black	1420	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH-5\M12\M12-B99.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B100

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SILT- fine SAND,brown		
	4762.24	1	CINDERS	1435	0.0 PPM
12			CLAYEY SILT, fine SAND, - olive green		
18					
24	4762.25	2		1435	0.0 PPM
			CINDERS		
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B100.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B101

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 8-31-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.26	1	SILT- fine SAND,olive green / orange	1445	0.0 PPM
12					
18					
24	4762.27	2		1445	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B101.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B102

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 8-31-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4762.28	1	SILT- fine SAND, brown	1455	0.0 PPM
12			SILT- fine SAND; - olive green		
18					
24	4762.29	2		1455	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B102.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B103

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.02	1	SILT- fine SAND, brown/ olive green	0940	0.0 PPM
12			CINDERS		
18					
24	4774.03	2	Organic silt-dk. brown	0940	1.0 PPM
30			SAND, fine / med. - olive green / brown		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B103.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B104

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.04	1	SAND, coarse / fine - orange / brown w/ some small round granules	0955	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4774.05	2	SAND, fine / med. - brown / dk. brown	0955	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B104.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B105

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4774.06	1	SAND, fine / med. - brown w/ some small round granules	1015	0.0 PPM
12			cinders and SAND,		
18			SILT, fine SAND, - dk. olive green		
24	4774.07	2	SAND, fine / med. - lt. olive green	1015	0.0 PPM
30			SAND, fine / med. - dk. brown		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B105.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B106

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4774.08	1	SILT, fine SAND - brown	1035	0.0 PPM
6					
12					
			CINDERS		
18					
			SILTY CLAY, fine SAND- black / brown		
24	4774.09	2		1035	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B106.BOR

000147

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B107

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.10	1	SILT, fine SAND, - olive green	1050	0.0 PPM
12					
18					
24	4774.11	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B107.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B108

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.12	1	SANDY SILT, fine - brown / tan	1110	0.0 PPM
12			SILT, fine SAND, - olive green		
18					
24	4774.13	2		1110	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B108.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B109

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4774.14	1	SANDY SILT, fine - brown / tan	1130	0.0 PPM
12			SILT, fine SAND, - olive green		
18					
24	4774.15	2		1130	0.0 PPM
30			CINDERS		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B109.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B110

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			asphalt and gravel		
6					
12	4774.16	1	SANDY SILT, fine - brown w/ some asphalt and gravel bits	1315	0.0 PPM
18					
24	4774.17	2		1315	0.0 PPM
30			SILT ,fine SAND, - tan / lt. olive green		
36			SAND, med. / fine - dk. olive green / brown		
42					

10-22-1999 X:\MTECH5\M12\M12-B110.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B111

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			gravel		
			SANDY SILT, med. / fine - brown / olive green		
6	4774.18	1		1330	0.0 PPM
12					
18					
			CINDERS , asphalt		
24	4774.19	2		1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B111.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B112

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-7-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SANDY SILT, brown		
	4774.20	1	Clay and SILT / black	1400	0.0 PPM
12					
18					
			Clay and SILT w/ some SAND, gray / black		
24	4774.21	2		1400	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B112.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B113

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-7-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6			SANDY SILT, fine - brown		
	4774.22	1	SILT , fine SAND, - olive green	1420	0.0 PPM
12					
18					
24	4774.23	2		1420	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B113.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B114

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Turf		
6	4777.02	1	SILT ,fine SAND, - olive green / tan	0905	0.0 PPM
12					
18			SILTY CLAY, fine SAND, - olive green		
24	4777.03	2		0905	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B114.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B115

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SAND, gravel, asphalt material		
6	4777.04	1	SANDY SILT, med. / fine - w/ some small round granules	0920	0.0 PPM
12					
18					
24	4777.05	2		0920	40.0 PPM
30					
			Mixed SAND, and CINDERS		
36			SAND, med. / fine - lt. olive green		
42					

10-27-1999 X:\MTECH5\M12\M12-B115.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B116

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.06	1	Mixed SAND, and QP gravels w/ small angular and round granules - brown / tan	0935	0.0 PPM
18			SILT, fine SAND, - olive green		
24	4777.07	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	0935	0.0 PPM
42					

10-27-1999 X:\MTECH5\M12\M12-B116.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B117

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Mixed SAND,		
6	4777.08	1		0950	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4777.09	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	0950	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B117.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B118

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			Mixed SAND		
6	4777.10	1		1010	0.0 PPM
12					
18			SILT, fine SAND, - olive green		
24	4777.11	2	SILTY CLAY, fine SAND, olive green w/ some small round quartz granules	1010	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B118.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B119

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.12	1	SILT, fine SAND, - olive green w/ some small round granules and asphalt debris	1115	0.0 PPM
6					
12					
18					
24	4777.13	2		1115	15.0 PPM
30			SANDY SILT, fine - dk. brown / olive green w/ some asphalt debris		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B119.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B120

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.14	1	SANDY SILT, tan / brown w/ asphalt and granular debris	1145	0.0 PPM
6					
12					
18			asphalt and Mixed sands - black / brown		
24	4777.15	2		1145	0.0 PPM
30			SAND, coarse / fine - w/ some SILT and cement Debris-olive green / tan		
36					
			SILT w/ some Clay / dk. gray w/ Wood material @ 46"		
42					

10-27-1999 X:\MTECH5\M12\M12-B120.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B121

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.16	1	SANDY SILT,fine - brown w/ small round granules and asphalt material	1330	0.0 PPM
6					
12			SILT , fine SAND, - olive green / orange		
18					
24	4777.17	2		1330	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B121.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B122

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.18	1	SANDY SILT,fine - brown w/ small round granules and asphalt material	1350	0.0 PPM
6					
12					
			SILT , fine SAND, - olive green / orange		
18					
24	4777.19	2		1350	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B122.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B123

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.20	1	SAND, med. / coarse - w/ some asphalt and small round granules/ brown	1410	0.0 PPM
12			SILT , fine SAND, - olive green		
24	4777.21	2	CINDERS and coal material	1410	0.0 PPM
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B123.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B124

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-8-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.22	1	SAND, med. / coarse - w/ some asphalt and small round granules/ brown	1425	0.0 PPM
6					
12			SILT , fine SAND, - olive green		
18					
24	4777.23	2	CINDERS and coal material	1425	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B124.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B125

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4777.24	1	SILT, Clay, fine sand - olive green	1435	0.0 PPM
6					
12					
18					
24	4777.25	2		1435	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B125.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B126

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-8-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, Clay, fine sand - olive green		
	4777.26	1		1448	0.0 PPM
6					
12					
18					
24	4777.27	2		1448	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B126.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B127

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.02	1	SANDY SILT, fine / med. - dk. gray	0930	0.0 PPM
12			SILT, fine SAND, - olive green		
18			SILT, fine SAND, - olive green w/ coal debris		
24	4790.03	2		0930	0.0 PPM
30			brick		
			cinders / brick material		
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B127.BOR

000168

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B128

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.04	1	SILT, fine SAND, - olive green w/ some asphalt debris	0950	0.0 PPM
6					
12					
18			CINDERS		
24	4790.05	2	CLAYEY SILT, fine SAND, - black / dk. olive green	0950	0.0 PPM
30					
36			CINDERS		
42					

10-22-1999 X:\MTECH5\M12\M12-B128.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B129

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-15-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.06	1	SILT, fine SAND, - olive green	1015	0.0 PPM
6					
12					
18			SANDY SILT, fine - olive green / orange		
24	4790.07	2		1015	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B129.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B130

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.08	1	SILT, fine SAND, - olive green	1030	0.0 PPM
6					
12					
18			SANDY SILT, fine - olive green / orange		
24	4790.09	2		1030	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B130.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B131

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.10	1	SILTY CLAY, fine SAND, - dk. brown	1050	0.0 PPM
6					
12			asphalt		
18			SILTY SAND, fine / med. - w/ some Clay and small round granules, brown / orange / tan(also coal fragments)		
24	4790.11	2		1050	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B131.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B132

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, fine sand - olive green w/ some coal debris		
	4790.12	1		1115	0.0 PPM
6					
12					
18					
24	4790.13	2		1115	0.0 PPM
30			cinders		
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B132.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B133

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.14	1	SILT, fine sand - brown / lt. olive green / orange	1135	0.0 PPM
6					
12					
18					
24	4790.15	2		1135	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B133.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B134

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.16	1	SILT, fine sand - brown / lt. olive green / orange	1148	0.0 PPM
6					
12					
18					
24	4790.17	2		1148	0.0 PPM
30					
36					
42					

10-27-1999 X:\MITECH5\M12\M12-B134.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B135

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.18	1	SILT, fine sand - brown / lt. olive green / orange	1300	0.0 PPM
6					
12					
18					
24	4790.19	2		1300	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B135.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B136

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.20	1	SAND, fine w/ some SILT / olive green	1325	0.0 PPM
6					
12			CINDERS		
18					
24	4790.21	2		1325	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B136.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B137

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4790.22	1	SILT ,fine SAND, - olive green	1350	0.0 PPM
6					
12					
18					
			SANDY SILT, dk. olive green		
24	4790.23	2		1350	0.0 PPM
			SILT, fine SAND, - olive green / brown		
30					
36			SANDY SILT, fine - olive green / orange (Very Little Asphalt @ 4" & Very Little Coal Debris @ 22-26")		
42					

10-27-1999 X:\MTECH5\M12\M12-B137.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B138

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.24	1	SILT , fine SAND, - olive green	1410	0.0 PPM
6					
12					
18					
24	4790.25	2		1410	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B138.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B139

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-15-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4790.26	1	SILT , fine SAND, - olive green/ orange / brown w/ some glass	1425	0.0 PPM
6					
12					
18					
24	4790.27	2		1425	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B139.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B140

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.02	1	SILT , fine SAND, - olive green	0900	0.0 PPM
6					
12					
18					
24	4793.03	2	CINDERS	0900	0.0 PPM
30					
36					
42					

10-22-1999 X:\MTECH5\M12\M12-B140.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B141

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.04	1	SILT , fine SAND, - olive green	0920	0.0 PPM
6					
12					
18					
24	4793.05	2	SAND, fine / med. - olive green w/ some SILT	0920	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B141.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B142

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED	: 9-20-99	OPERATOR	: MARK LAURA
HOLE DIAMETER	: 2"	CONTRACTOR	: TVS-PWS-007
DRILLING METHOD	: GEOPROBE	NJDEP LIC.#	: J1486
SAMPLING METHOD	: 2" MACROCORE		
H2O SAMPLER	:		

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.06	1	SILT , SAND, fine / med. - olive green	0935	0.0 PPM
6					
12					
18					
24	4793.07	2		0935	0.0 PPM
30					
36			CINDERS		
42					

10-27-1999 X:\MTECH5\M12\M12-B142.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B143

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.08	1	SILT, fine SAND, - olive green / orange (Hand Augered To 2')	0948	0.0 PPM
6					
12					
18					
24	4793.09	2		0948	0.0 PPM
30					
36					
42					

10-27-1999 X:\WTECH5\M12\M12-B143.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B144

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0					
	4793.10	1	SILT, fine SAND, - olive green / tan	1000	0.0 PPM
6					
12			CINDERS		
18					
24	4793.11	2		1000	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B144.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B145

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA			
0	4793.12	1	SILT, fine SAND, - olive green /orange / brown	1012	0.0 PPM			
6								
12								
18								
24	4793.13	2		1012	0.0 PPM			
30								
36								
42								

10-27-1999 X:\WTECH5\M12\M12-B145.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B146

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0	4793.14	1	SILT, fine SAND, - olive green / brown (Hand Augered)	1025	0.0 PPM
6					
12					
18					
24	4793.15	2		1025	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B146.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B147

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, fine SAND, - olive green / brown		
			(Hand Augered)		
	4793.16	1		1040	0.0 PPM
6					
12					
18					
24	4793.17	2		1040	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B147.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING M12-B148

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV

JOSEPH FALLON
M12 LANDFILL INVESTIGATION

DATE COMPLETED : 9-20-99
HOLE DIAMETER : 2"
DRILLING METHOD : GEOPROBE
SAMPLING METHOD : 2" MACROCORE
H2O SAMPLER :

OPERATOR : MARK LAURA
CONTRACTOR : TVS-PWS-007
NJDEP LIC.# : J1486

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME	OVA
0			SILT, fine SAND, - olive green / brown		
			(Hand Augered)		
	4793.18	1		1055	0.0 PPM
6					
12					
18					
24	4793.19	2		1055	0.0 PPM
30					
36					
42					

10-27-1999 X:\MTECH5\M12\M12-B148.BOR

000189

TABLE 2
Landfill Delineation Project
Cover Material Summary
M-12 LANDFILL

Boring #	Clean Cover (inches BGS)	Notes
1	26	Turf and mixed sands. Cinders start at 26" .
2	6	Turf and mixed sands. Cinders start at 6" .
3	6	Turf and mixed sands. Cinders start at 6" .
4	24	Turf,clay, organic material and mixed sands. Cinders start at 24" .
5	6	Turf and mixed sands. Cinders start at 6" .
6	40	Turf,clay, organic material and mixed sands. Wood board material starts at 40" .
7	34	Turf,clay, silt, organic material and mixed sands. Wood debris starts at 34" .
8	30	Turf and mixed sands. Black wafer material starts at 30" .
9	36	Turf,clay, organic material and mixed sands.
10	17	Turf,clay, silt, and mixed sands. Cinders start at 17" .
11	34	Turf and mixed sands. Cinders start at 34" .
12	33	Turf,clay, silt, and mixed sands. Cinders start at 33" .
13	18	Turf and mixed sands. Cinders start at 18" .
14	36	Turf,clay, silt, and mixed sands.
15	2	Turf and mixed sands. Cinders start at 2" .
16	2	Turf and mixed sands. Cinders start at 2" .
17	6	Turf and mixed sands. Cinders start at 6" .
18	3	Turf and mixed sands. Cinders start at 3" .
19	3	Turf and mixed sands. Cinders start at 3" .
20	20	Turf and mixed sands. Cinders start at 20" .
21	3	Turf and mixed sands. Fill material starts at 3" .
22	3	Turf and mixed sands. Fill material starts at 3" .
23	48	Turf, sand, clayey silt to 48".
24	33	Turf and sand to 33".
25	36	Sand to 36".
26	36	Turf and sand to 36".
27	28	Turfa nd sand to 28". Cinders at 28-36".
28	22	Turf and sand to 19. Wood debris at 19-22. Sand mixed with cinders at 22-27". Asphalt at 27-31".
29	19	Turf and sandy clay to 19". Cinders at 19-30". Sand and silt at 30-45". Wood, brick and glass at 45-48".
30	33	Turf, sand and clayey sand to 33".
31	30	Turf, sandy silt, sand to 30".
32	21	Turf, sandy clay, sand to 21". Cinders and sand 21-36".
33	27	Turf 0-3". Clayey sand with brick and gravel 3-12". Clayey sand and silt to 27". Cinders at 27-33".
34	14	Turf, sand to 14". Asphalt at 14-18". Clayey sand to 36". Cinders at 36-42".
35	3	Turf 0-3". Sand mixed with <2% brick and coal at 3-28". Sand with glass fragments at 28-48".
36	34	Turf with sand to 33".
37	3	Turf 0-3". Cinders mixed with sand at 3-15". Sand to 42".
38	3	Turf 0-3". Cinders at 3-18". Sand to 36".
39	5	Turf and sand 0-5". Cndsers at 5-8". Sand and gravel to 33".
40	6	Turf to 6". Sand with cinders, coal and wood debris at 6-43". Sand at 43-48".
41	36	Turf 0-6". Sand to 36". Cinders at 36-45".
42	6	Turf to 6". Sand wmixed with coal fragments to 26". Cinders at 26-33". Clay at 33-36".
43	9	Turf and sand mixed with brick to 9". Coal and cinders at 9-18". Sand to 35".
44	28	Turf and sand, sandy silt to 28". Cinders at 28-36". Sand at 36-48".
45	13	Turfa nd sand to 13". Cinders mixed with sand at 13-19". Sand to 48".
46	6	Turfa nd sand to 6". Sand with cinders 6-13". Sand to 36".
47	11	Turf and sand to 11". Cinders at 11-13". Sand to 26". Wood at 26-27". Calyey sand 27-36". Wood at 36-40".
48	13	Turf and sand to 13". Sand mixed with coal fragments at 13-19". Sand to 35".
49	26	Turf and sand to7". Sand with brick fragments 7-26". Sand with cinders and coal at 26-36".
50	12	Turf and sand to 12". Cinders with sand at 12-18". Clayey sands, silt, sand to 39". Sand with tar paper at 39-42"
51	20	Turf with sand to 20". Sand with coal fragments at 20-36".
52	20	Turf and silty sand to 20". Sand with chip, coal and cement at 20-28". Sand at 28-36".
53	22	Turf, sand to 22". Cinders at 22-28". Sand at 28-36".
54	14	Turfa nd silt to 14". Sand with cinders at 14-21". Silt and sand 21-36".
55	30	Turf, silty clay and sand to 30".
56	30	Turf, silty clay and sand to 30".
57	20	Turf and silt to 20". Sand with coal at 20-28". Sand at 28-36".
58	20	Turf and silt to 20". Sand with coal at 20-28". Sand at 28-36".
59	7	Turf and sand to 7". Sand mixed with coal, cinders and gravel at 7-20". Silt at 20-32".
60	20	Turf, sand and gravel to 20". Cinders and coal at 20-27". Silty clay, cinders and coal at 27-34".

TABLE 2
Landfill Delineation Project
Cover Material Summary
M-12 LANDFILL

61	36	Turf and sand to 36".
62	NA	NO BORING #62.
63	36	Turf and sand to 34". Woody materials at 27-33". Gravel at 33-36".
64	20	Turf, silt and sand to 20. Silt with small chips, coal and cement bits at 20-28". Sand at 28-36".
65	40	Turf, silt and sand to 40".
66	36	Turf, silt and sand to 36".
67	8	Turf with sand to 8". Cinders at 8-10". Cinders at 27". Clay and sand 27-40".
68	21	Turf with sand to 21". Cinders and coal at 21-26". Clayey silt with cinders and coal at 26-34".
69	36	Turf and sand to 36".
70	40	Silt and sand to 40"
71	40	Turf, silt and sand to 40".
72	38	Turf, silt and sand to 38".
73	6	Turf to 6". Silt with cindrs at 6-18". Sand and silt to 36".
74	16	Turf and sand to 16". Cinders at 16-27". Clayey sand 27-29". Woody material 29-36".
75	25	Turf, silt and sand to 25". Cinders at at-34".
76	36	Turf, sand and leaves to 36".
77	34	Turf and sand to 34".
78	34	Turf and sand to 34". Woody materials at 27-33". Gravel at 33-36".
79	8	Turf and sand to 8". Cinders at 8-12". Clayey silt and sand to 32".
80	20	Turf and sand to 20". Cinders at 20-30".
81	28	Turf and sand to 20". Cinders at 28-36".
82	26	Turf, sand, silt and clay to 26". Cinders at 26-34".
83	40	Turf, silt, clay, sand to 40".
84	40	Turf, silt with sand, clayey sand and silt to 40".
85	36	Turf, silt and clay silt to 36".
86	26	Turf and clayey silt to 26". Cinders at 26-36".
87	30	Turf and clayey silt to 26". Cinders at 30-36".
88	26	Turf, silt, and sand to 26". Cinders at 26-36".
89	14	Turf, silt, fine sand to 14". Cinders at 14-30".
90	36	Turf and sand with gravel to 36".
91	7	Turf with silt and sand to 7". Cinders at 7-16". Sand 16-36".
92	22	Turf, silt and sand to 22". Cinders at 22-38".
93	38	Turf, sand and silt to 38".
94	22	Turf, silt and sand to 22". Cinders at 22-36".
95	27	Turf, sand and silt to 27". Cinders at 27-36".
96	36	Turf, silty clay, sandy clay to 36".
97	36	Turf, sand and silt to 36".
98	36	Turf and sand to 36".
99	18	Turfa nd silt to 18". Cinders at 18-21". Silt at 21-36".
100	9	Turf and silt to 9". Cinders at 9-12". Clayey silt at 12-26". Cinders at 26-36".
101	30	Turf, silt and sand to 30". Cinders at 30".
102	26	Turf, silt and sand to 26". Cinders at 26-36".
103	12	Turf and silty sand to 12". Cinders at 12-22". Organic material and sand to 36".
104	39	Turf, sand and silt to 39".
105	12	Sand to 12". Cinders with sand at 12-15". Sand to 38".
106	16	Sand to 16". Cinders at 16-22". Silty clay and sand to 36".
107	38	Turfa and ailt with fine sand to 38".
108	30	Turf and sandy silt to 30". Cinders at 30-36".
109	30	Turf, sandy silt and sand to 30". Cinders at 30-36".
110	0	Asphalt and gravel 0-9". Sandy silt with asphalt and gravel at 9-28". Sand to 39".
111	22	Gravel 0-3". Sandy silt 3-22". Cinders and asphalt at 22-38".
112	36	Turf, sandy silt and clay with sand to 36"
113	36	Turf, sandy silt and sand to 36".
114	39	Turf, silt, silty clay and sand to 39".
115	33	Sand, gravel, sandy silt to 33". Sand mixed with cinders at 33-36". Sand at 37-40".
116	40	Sand, gravel and quartz granulaes to 40".
117	40	Sand, gravel and quartz granulaes to 40".
118	40	Sand, silt and clay with quartz granulaes to 40".
119	40	Silt, sand and sandy silt to 40".
120	20	Sandy silt to 20". Asphalt mixed with sand at 20-30". Sand at 20-40". Silt and clay with woody material at 46".
121	36	Sandy silt to 36".
122	0	Sandy silt with asphalt material to 15". Silt, sand to 36".
123	24	Sand and silt to 24". Cinders and coal at 24-36".

TABLE 2
Landfill Delineation Project
Cover Material Summary
M-12 LANDFILL

124	0	Sandy silt with asphalt material to 12". Silt, sand to 24". Cinders and coal at 24-36".
125	36	Silt, clay and sand to 36".
126	36	Silt, clay and sand to 36".
127	20	Sandy silt and sand to 20". Silt, sand with coal debris at 20-28". Brick and cinders at 30-34".
128	18	Silt and sand to 18". Cinders at 18-23". Clayey silt and sand to 34". Cinders at 34-36".
129	36	Silt and sand to 36".
130	36	Silt and sand to 36".
131	12	Silty clay and sand to 12". Asphalt at 12-17". Silty sand with coal fragments at 17-30".
132	30	Silt and sand to 30". Cinders at 30-40".
133	40	Silt and sand to 40".
134	40	Silt and sand to 40".
135	40	Silt and sand to 40".
136	14	Sand with silt to 14". Cinders at 14-32".
137	40	Silt and sand to 40". Minor amounts of asphalt and coal debris reported.
138	40	Silt and sand to 40".
139	0	Silt and sand with glass mixed at 0-6". Description incomplete.
140	22	Silt and sand at to 22". Cinders at 22-36".
141	40	Silt and sand to 40".
142	36	Silt and sand to 36". Cinders at 36-40".
143	24	Silt and sand to 24".
144	13	Silt and sand to 13". Cinders at 13-36".
145	36	Silt and sand to 36". Cinders at 36-40".
146	24	Silt and sand to 24".
147	36	Silt and sand to 36".
148	36	Silt and sand to 36".
T-10	6	Ash and coal.
T-11	12	Brick, asphalt, rusting metal and bottle at 12".
T-11A	18	Ash and blue powder at 18".
T-11B	6	Coal, ash and iron at 6".
T-11C	18	Coal and slag.
T-11D	12	Coal and ash.
T-13	12	Ash and coal.
T-13A	24	Slag, coal and brick.
T-13B	36	Ash and coal.
T-14	36	Ash and coal.
T-14A	36	Ash and coal.
T-14B	36	Ash and coal.
T-16	6	Asphalt at 6". Ash and coal at 18".
T-17	6	Asphalt at 6". Ash and coal at 18".
T-21	24	Ash and coal.
AVERAGE	**24.3**	NA

NOTES:

1. Information Sources:

a. Remedial Investigation Report for Near-Surface Soils, Landfill M-12, Appendix E, October 15, 2003

b. Landfill Delineation Project Logs, H. Hornung, 12/08 ("T" locations).

2. BGS means Below Ground Surface.

3. "T" identifies trenches dug at perimeter of landfill.

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **1**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Orange sand 0-3' BGS, 3'-3.5' BGS tan clay, 3.5'-8' BGS tan, silty sand with some gravel.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539676.54** X COORDINATE (EASTING):**621448.41**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539664.64** X COORDINATE (EASTING):**621447.67**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **1 & 2 10:12**

NOTES**: Calibrated MultiRae with Multigas and fresh air. No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **2**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-8' BGS tan, silty sand with some gravel.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539568.26** X COORDINATE (EASTING):**621443.37**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539556.72** X COORDINATE (EASTING):**621440.72**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **3 & 4 10:55**

NOTES**: No staining, odors or MultiRae readings above BG. Excavation began to cave in at 6' BGS.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **3**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan and orange sand 0-5' BGS. Ground water began entering excavation at 2.5' BGS, at 5' excavation began to cave in, could not excavate to 8'.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539460.57** X COORDINATE (EASTING):**621436.72**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539449.23** X COORDINATE (EASTING):**621435.95**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **5 & 6 11:25**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **4**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan and orange sand 0-5' BGS. GW encountered at 3' BGS, excavation caved in at 5' BGS, was not able to excavate to 8' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539363.56** X COORDINATE (EASTING):**621427.66**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539353.55** X COORDINATE (EASTING):**621424.37**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **7 & 8 13:30**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **5**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-6" BGS some parking lot milling present, 6'-8' BGS tan and orange sand.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539300.07** X COORDINATE (EASTING):**621398.79**
END OF EXCAVATION
Y COORDINATE (NORTHING):**539303.14** X COORDINATE (EASTING):**621388.79**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **9 & 10 14:00**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **6**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-4' BGS tan and orange sand, 4'-8' BGS gray, silty sand.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539337.12** X COORDINATE (EASTING):**621307.08**
END OF EXCAVATION
Y COORDINATE (NORTHING):**539340.1** X COORDINATE (EASTING):**621295.62**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **11 & 12 14:30**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Ed Crawley**
DATE: **12/15/08**
LANDFILL: **M 12** EXCAVATION ID: **7**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-7' BGS gray sand with little gravel, 7'-8' BGS black, organic material.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539388.54** X COORDINATE (EASTING):**621202.55**
END OF EXCAVATION
Y COORDINATE (NORTHING):**539391.43** X COORDINATE (EASTING):**621191.97**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13 & 14 15:01**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **8**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan sand 0-6' BGS, GW encountered at 3' BGS, excavation caved in at 6' BGS, could not dig to 8' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539446.13** X COORDINATE (EASTING):**621060.99**
END OF EXCAVATION
Y COORDINATE (NORTHING):**539439.50** X COORDINATE (EASTING):**621052.28**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13:22 13:23**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **9**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan and orange sand 0-6' BGS, GW encountered at 4' BGS, excavation caved in at 6' BGS, could not dig to 8' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539388.33** X COORDINATE (EASTING):**621019.28**
END OF EXCAVATION
Y COORDINATE (NORTHING):**539376.54** X COORDINATE (EASTING):**621014.25**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13:43 13:43**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **10**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 6”-12” BGS ash and coal.**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-6” BGS organic material, 12”-8’ BGS tan and orange sand.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539297.97** X COORDINATE (EASTING):**620977.88**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539286.87** X COORDINATE (EASTING):**620970.87**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:07 14:08**

NOTES**: No odors or MultiRae readings above BG.**
Map color code = yellow

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **10A**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-12" BGS organic material, 1'-3' BGS orange and tan sand with some gravel. Did not excavate to 8' BGS because landfill material was found near surface in M12-10.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539284.79** X COORDINATE (EASTING):**620989.95**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539294.38** X COORDINATE (EASTING):**620994.68**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:31 14:32**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **11**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-1' BGS soil. Encountered brick, asphalt, rusting metal and a coke bottle at 1'-3' BGS.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539179.33** X COORDINATE (EASTING):**620915.73**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539183.69** X COORDINATE (EASTING):**620904.46**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:53 14:54**

NOTES**: Map color code = red**

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Bill Pitzner**
DATE: **12/17/08**
LANDFILL: **M 12** EXCAVATION ID: **11A**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-1.5' BGS soil, 1.5'-2' BGS encountered ash and blue powder.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539166.54** X COORDINATE (EASTING):**620893.91**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539161.98** X COORDINATE (EASTING):**620906.64**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **15:07 15:08**

NOTES**: No MultiRae readings above BG.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **11B**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 6"-12" BGS encountered coal, ash and rusting iron.**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-6" BGS soil. Sand was present from 1'-2' BGS. Stopped digging at 2' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539125.98** X COORDINATE (EASTING):**620894.82**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539130.84** X COORDINATE (EASTING):**620884.40**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **9:22**

NOTES**: Map color code = yellow**

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **11C**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 1.5'-2' BGS coal and slag found.**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-1.5' BGS soil, 2'-6.5' BGS tan, silty sand.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539092.83** X COORDINATE (EASTING):**620877.85**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539099.55** X COORDINATE (EASTING):**620863.69**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **10:00**

NOTES**: No odor or readings on the MultiRae above BG.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **11D**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-1' BGS soil, 1'-1.5' BGS encountered coal and ash. Stopped excavation.**

NATURAL MATERIAL PRESENT: YES NO
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539080.13** X COORDINATE (EASTING):**620850.84**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539083.96** X COORDINATE (EASTING):**620836.96**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **10:51**

NOTES**: Map color code = red**

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **11E**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan, silty sand 0-8' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539064.71** X COORDINATE (EASTING):**620840.63**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539070.84** X COORDINATE (EASTING):**620829.23**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **11:15**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **12**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO X
DESCRIBE:

NATURAL MATERIAL PRESENT: YES X NO
DESCRIBE: **Brown, silty sand with some gravel. A brick and a piece of concrete were found at 2' BGS, GW was encountered at 7' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING): **539206.77** X COORDINATE (EASTING): **620849.74**

END OF EXCAVATION
Y COORDINATE (NORTHING): **539211.13** X COORDINATE (EASTING): **620836.79**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13:21 and 13:22**

NOTES: **No staining, odor or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** BORING ID: **13**

BORING DESCRIPTION

LANDFILL MATERIAL PRESENT: YES X NO
DESCRIBE**: 0-1' BGS soil. Ash and coal encountered at 1' BGS. Hole was advanced using a shovel and hand auger because backhoe could not gain access due to trees in the area.**

NATURAL MATERIAL PRESENT: YES NO X

DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION

Y COORDINATE (NORTHING**):539162.47** X COORDINATE (EASTING):**620764.85**

BORING PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13:40**

NOTES**: Map color code = red**

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **13A**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-2' BGS soil. Slag, coal and brick found at 2' BGS.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539144.02** X COORDINATE (EASTING):**620783.67**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539141.54** X COORDINATE (EASTING):**620791.23**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **13:50 and 13:51**

NOTES**: No odor or MultiRae readings above BG.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **13B**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-3' BGS tan sand, 3'-4' BGS ash and coal encountered.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539130.58** X COORDINATE (EASTING):**620800.55**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539122.14** X COORDINATE (EASTING):**620814.42**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:07 and 14:08**

NOTES**: No odors or readings above BG on MultiRae. No where left to step out because 11A-D was found to have ash and coal present.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: Harold Hornung
DATE: **12/29/08**
LANDFILL: **M 12** BORING ID: **14**

BORING DESCRIPTION

LANDFILL MATERIAL PRESENT: YES X NO
DESCRIBE**: 0-3' BGS tan sand, 3'-4' BGS ash and coal. Hole was advanced with shovel and hand auger, because there was no access for the backhoe.**

NATURAL MATERIAL PRESENT: YES NO X
DESCRIBE**:**

GPS POSITIONS

Y COORDINATE (NORTHING**): 539077.46** X COORDINATE (EASTING):**620730.64**

BORING PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:24**

NOTES**: No odors or MultiRae readings above BG.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/29/08**
LANDFILL: **M 12** EXCAVATION ID: **14A**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-3' BGS silty sand, 3'-4' BGS ash and coal.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539077.65** X COORDINATE (EASTING):**620782.47**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539080.69** X COORDINATE (EASTING):**620772.52**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:38**

NOTES**: No odors or MultiRae readings above BG.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: Harold Hornung
DATE: **12/29/08**
LANDFILL: **M 12** BORING ID: **14B**

BORING DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO X
DESCRIBE:

NATURAL MATERIAL PRESENT: YES X NO
DESCRIBE: **0-1.5' BGS pieces of brick and asphalt present, 1.5'-8' BGS silty sand. GW encountered at 6' BGS.**

GPS POSITIONS

Y COORDINATE (NORTHING): **539063.35** X COORDINATE (EASTING): **620809.89**

BORING PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:38**

NOTES: **No staining, odors or MultiRae readings above BG. The boring was advanced using a shovel and hand auger because of proximity to utilities.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/30/08**
LANDFILL: **M 12** EXCAVATION ID: **15**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan, silty sand with some wood pieces encountered at 4' BGS. No GW encountered.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 538973.1** X COORDINATE (EASTING):**620686.67**

END OF EXCAVATION
Y COORDINATE (NORTHING):**538976.94** X COORDINATE (EASTING):**620674.86**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:18 and 14:19**

NOTES**: No staining, odors or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/30/08**
LANDFILL: **M 12** EXCAVATION ID: **16**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-6" BGS stone and asphalt, 6"-1.5' BGS tan sand, 1.5'-3' BGS ash and coal, 3'-4' sand, stopped digging at 4' BGS.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539016.73** X COORDINATE (EASTING):**620591.5**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539020.41** X COORDINATE (EASTING):**620580.48**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **14:53 and 14:54**

NOTES**: The excavation is adjacent to the parking lot, so we can not delineate further to the South.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/30/08**
LANDFILL: **M 12** EXCAVATION ID: **17**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-6" stone and asphalt, 6"-3' BGS tan and brown, silty sand, 3'-5' BGS ash, coal, bottles, wire, and telephone poles.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539053.7** X COORDINATE (EASTING):**620494.55**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539061.25** X COORDINATE (EASTING):**620481.84**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION:

NOTES**: Landfill material goes deeper than 5', could not advance excavation because of telephone poles. Can not delineate landfill to the South because of parking lot.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **18**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Brown, silty sand 0-8' BGS. A piece of wood was encountered at 2' BGS. No GW was encountered.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**): 539037.25** X COORDINATE (EASTING):**620364.0**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539022.75** X COORDINATE (EASTING):**620360.25**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **8:52, 8:53**

NOTES**: No staining, odor, or MultiRae readings above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **19**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Tan, silty sand 0-4' BGS, silty clay 4'-8' BGS. GW encountered at 7' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):538897.31** X COORDINATE (EASTING):**620297.88**

END OF EXCAVATION
Y COORDINATE (NORTHING):**538911.4** X COORDINATE (EASTING):**620305.11**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **9:23, 9:24**

NOTES**: No staining, odor, or MultiRae readins above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **20**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Brown, silty sand with some clay. GW encountered at 7' BGS.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):538940.81** X COORDINATE (EASTING):**620212.04**

END OF EXCAVATION
Y COORDINATE (NORTHING):**538945.13** X COORDINATE (EASTING):**620197.42**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **1004 and 1005**

NOTES**: No staining, odor, or MultiRae readins above BG.**
Map color code = green

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **21**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-2' BGS brown, silty sand, 2'-2' 8" ash and coal, 2'8"-3,5' brown, silty sand.**

NATURAL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):538992.79** X COORDINATE (EASTING):**620119.18**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539007.32** X COORDINATE (EASTING):**620115.98**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **1056 and 1057**

NOTES**: No odor, or MultiRae readings. Stopped digging at 3.5'.**
Map color code = red

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **21A**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: 0-4' BGS silty, tan sand, 4'-8' BGS gray, silty sand and clay, 7' BGS encountered GW.**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539006.18** X COORDINATE (EASTING):**620094.27**

END OF EXCAVATION
Y COORDINATE (NORTHING):**538990.12** X COORDINATE (EASTING):**620092.93**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **1133 and 1134**

NOTES**: Map color code = green**

SUBSURFACE EVALUATOR SIGNATURE:_____

LANDFILL DELINEATION PROJECT LOG

SUBSURFACE EVALUATOR: Harold Hornung
EQUIPMENT OPERATOR: **Will Crawley**
DATE: **12/31/08**
LANDFILL: **M 12** EXCAVATION ID: **22**

EXCAVATION DESCRIPTION

LANDFILL MATERIAL PRESENT: YES NO **X**
DESCRIBE**:**

NATURAL MATERIAL PRESENT: YES **X** NO
DESCRIBE**: Concrete and rebar found at 0-2' BGS, appears to be old building foundation. Brown, silty sand 2'-8' BGS**

GPS POSITIONS
BEGINNING OF EXCAVATION
Y COORDINATE (NORTHING**):539053.75** X COORDINATE (EASTING):**620054.34**

END OF EXCAVATION
Y COORDINATE (NORTHING):**539059.3** X COORDINATE (EASTING):**620036.03**

EXCAVATION PHOTOGRAPHED: YES **X** NO

PHOTOGRAPH INDENTIFICATION: **1342 and 1343**

NOTES**: No staining or MultiRae readings. Some organic odor present. Map color code = green**

SUBSURFACE EVALUATOR SIGNATURE:_____

FINAL

SITE INVESTIGATION
FORT MONMOUTH, NEW JERSEY
MAIN POST AND CHARLES WOOD AREAS

Prepared For:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
10 South Howard Street
Baltimore, MD 21201

Under:

Contract DACA31-92-D-0018

Prepared By:

ROY F. WESTON, INC.
1 Weston Way
West Chester, PA 19380-1499

December 1995

TABLE OF CONTENTS

Section	Title	Page
	EXECUTIVE SUMMARY	ES-1
1	INTRODUCTION	1-1
	1.1 Project Objectives	1-1
	1.2 Facility Description	1-2
	1.2.1 Owner/Operator Information	1-2
	1.2.2 Location of Fort Monmouth	1-2
	1.2.2.1 Main Post	1-5
	1.2.2.2 Charles Wood Area	1-5
	1.2.3 Mission Statement	1-5
	1.2.4 History of Fort Monmouth	1-7
2	ENVIRONMENTAL SETTING	2-1
	2.1 Climate	2-1
	2.2 Topography	2-1
	2.2.1 Main Post	2-1
	2.2.2 Charles Wood	2-2
	2.3 Surface-Water Drainage and Wetlands	2-2
	2.3.1 Main Post	2-2
	2.3.2 Charles Wood	2-5
	2.4 Soils	2-5
	2.4.1 Main Post	2-5
	2.4.2 Charles Wood	2-10
	2.5 Geology	2-12
	2.5.1 Regional Geology	2-12
	2.5.2 Local Geology	2-12
	2.6 Hydrogeology	2-14
	2.7 Vegetation and Wildlife	2-15
3	INVESTIGATION ACTIVITIES	3-1
	3.1 Geophysics	3-1
	3.1.1 Electromagnetic (EM) Terrain Conductivity Surveying Methods	3-1
	3.1.1.1 Description	3-1
	3.1.1.2 Methodology	3-2
	3.1.2 Magnetic (MAG) Methods	3-3

Section	Title	Page
	4.2.2.7.1 Conductivity and Salinity Results	4.2-22
	4.2.2.8 Recommendations	4.2-23
4.2.3	Landfill 3 (M-3)	4.2-33
	4.2.3.1 Site Location	4.2-33
	4.2.3.2 Site History	4.2-33
	4.2.3.3 Sampling Effort	4.2-33
	4.2.3.4 Geophysical Results	4.2-34
	4.2.3.5 Hydrogeologic Interpretation	4.2-35
	4.2.3.6 Groundwater Sampling Results	4.2-35
	4.2.3.7 Surface-Water Sampling Results	4.2-38
	4.2.3.8 Recommendations	4.2-40
4.2.4	Landfill 4 (M-4)	4.2-57
	4.2.4.1 Site Location	4.2-57
	4.2.4.2 Site History	4.2-57
	4.2.4.3 Sampling Effort	4.2-57
	4.2.4.4 Hydrogeologic Interpretation	4.2-57
	4.2.4.5 Groundwater Sampling Results	4.2-58
	4.2.4.6 Recommendations	4.2-60
4.2.5	Landfill 5 (M-5)	4.2-63
	4.2.5.1 Site Location	4.2-63
	4.2.5.2 Site History	4.2-63
	4.2.5.3 Sampling Effort	4.2-63
	4.2.5.4 Hydrogeologic Interpretation	4.2-64
	4.2.5.5 Groundwater Sampling Results	4.2-64
	4.2.5.6 Recommendations	4.2-67
4.2.6	Burning Area (M-6)	4.2-69
	4.2.6.1 Site Location	4.2-69
	4.2.6.2 Site History	4.2-69
	4.2.6.3 Sampling Effort	4.2-69
4.2.7	Landfill 8 (M-8)	4.2-71
	4.2.7.1 Site Location	4.2-71
	4.2.7.2 Site History	4.2-71
	4.2.7.3 Sampling Effort	4.2-72
	4.2.7.4 Hydrogeologic Interpretation	4.2-72
	4.2.7.5 Groundwater Sampling Results	4.2-73
	4.2.7.6 Tidal Monitoring	4.2-76
	4.2.7.6.1 Conductivity and Salinity Results	4.2-77

Section		Title	Page
		4.2.12.2 Site History	4.2-139
		4.2.12.3 Sampling Effort	4.2-139
		4.2.12.4 Geophysical Results	4.2-140
		4.2.12.5 Hydrogeologic Interpretation	4.2-141
		4.2.12.6 Soil Sampling Results	4.2-141
		4.2.12.7 Groundwater Sampling Results	4.2-145
		4.2.12.8 Recommendations	4.2-148
	4.2.13	Former Main Post Sanitary Treatment Plant (AOC-3)	4.2-163
		4.2.13.1 Site Location	4.2-163
		4.2.13.2 Site History	4.2-163
		4.2.13.3 Sampling Effort	4.2-163
		4.2.13.4 Soil Sampling Results	4.2-164
		4.2.13.5 Sediment Sampling Results	4.2-166
		4.2.13.6 Recommendations	4.2-168
	4.2.14	Pre-1941 Sanitary Treatment Plant (STP)	4.2-171
		4.2.14.1 Site Location	4.2-171
		4.2.14.2 Site History	4.2-171
		4.2.14.3 Sampling Effort	4.2-171
		4.2.14.4 Sediment Sampling Results	4.2-171
		4.2.14.5 Recommendations	4.2-173
	4.2.15	PCB Transformers	4.2-177
		4.2.15.1 Site Location	4.2-177
		4.2.15.2 Site History	4.2-177
		4.2.15.3 Sampling Effort	4.2-177
		4.2.15.4 PCB Sampling Results	4.2-177
		4.2.15.5 Recommendations	4.2-179
4.3	Charles Wood		4.3-1
	4.3.1	Background Samples	4.3-1
		4.3.1.1 Hydrogeologic Interpretation	4.3-5
		4.3.1.2 Soil Sampling Results	4.3-5
		4.3.1.3 Groundwater Sampling Results	4.3-6
		4.3.1.4 Surface-Water Sampling Results	4.3-7
		4.3.1.5 Sediment Sampling Results	4.3-8
	4.3.2	Wastewater Treatment Lime Pit 1 (CW-1)	4.3-13
		4.3.2.1 Site Location	4.3-13
		4.3.2.2 Site History	4.3-13
		4.3.2.3 Sampling Effort	4.3-14

Section	Title	Page
	4.3.8.1 Site Location	4.3-65
	4.3.8.2 Site History	4.3-65
	4.3.8.3 Sampling Effort	4.3-66
	4.3.8.4 Hydrogeologic Interpretation	4.3-66
	4.3.8.5 Soil Sampling Results	4.3-67
	4.3.8.6 Groundwater Sampling Results	4.3-69
	4.3.8.7 Recommendations	4.3-71
	4.3.9 Sludge Dump (CW-9)	4.3-79
	4.3.9.1 Site Location	4.3-79
	4.3.9.2 Site History	4.3-79
	4.3.9.3 Sampling Effort	4.3-79
	4.3.9.4 Hydrogeologic Interpretation	4.3-80
	4.3.9.5 Soil Sampling Results	4.3-80
	4.3.9.6 Groundwater Sampling Results	4.3-83
	4.3.9.7 Recommendations	4.3-85
	4.3.10 Former Hazardous Waste Storage Area (AOC-7)	4.3-87
	4.3.10.1 Site Location	4.3-87
	4.3.10.2 Site History	4.3-87
	4.3.10.3 Sampling Effort	4.3-88
	4.3.10.4 Soil Sampling Results	4.3-88
	4.3.10.5 Recommendations	4.3-90
	4.3.11 PCB Transformers	4.3-93
	4.3.11.1 Site Location	4.3-93
	4.3.11.2 Site History	4.3-93
	4.3.11.3 Sampling Effort	4.3-93
	4.3.11.4 PCB Sampling Results	4.3-93
	4.3.11.5 Recommendations	4.3-95
5	**DATA QUALITY**	**5-1**
	5.1 Introduction	5-1
	5.2 Quality Control Procedures	5-5
	5.2.1 Field and Laboratory Quality Control Samples	5-5
	5.2.2 Field Activities	5-6
	5.2.3 Laboratory Activities	5-7
	5.2.3.1 Laboratory Equipment Quality Control	5-7
	5.2.3.2 Laboratory Data	5-7

TABLE OF CONTENTS
(Continued)

Section		Title	Page
	6.1.8	Water Tank (M-15)	6-13
		6.1.8.1 Conclusions	6-14
		6.1.8.2 Recommendations	6-14
	6.1.9	Former Pesticide Storage Building (M-16)	6-14
		6.1.9.1 Conclusions	6-14
		6.1.9.2 Recommendations	6-15
	6.1.10	Former Training Areas (M-18)	6-15
		6.1.10.1 Conclusions	6-15
		6.1.10.2 Recommendations	6-16
	6.1.11	Former Main Post Sanitary Treatment Plant (AOC-3)	6-16
		6.1.11.1 Conclusions	6-17
		6.1.11.2 Recommendations	6-17
	6.1.12	Pre-1941 Sanitary Treatment Plant	6-17
		6.1.12.1 Conclusions	6-17
		6.1.12.2 Recommendations	6-17
	6.1.13	PCB Transformers — Main Post	6-18
		6.1.13.1 Conclusions	6-18
		6.1.13.2 Recommendations	6-18
6.2	Charles Wood		6-19
	6.2.1	Wastewater Treatment Lime Pit 1 (CW-1)	6-19
		6.2.1.1 Conclusions	6-19
		6.2.1.2 Recommendations	6-19
	6.2.2	Wastewater Treatment Lime Pit 2 (CW-2)	6-21
		6.2.2.1 Conclusions	6-21
		6.2.2.2 Recommendations	6-22
	6.2.3	Landfill 3 (CW-3)	6-23
	6.2.4	Debris Site (CW-3A)	6-23
		6.2.4.1 Conclusions	6-23
		6.2.4.2 Recommendations	6-23
	6.2.5	Range (Small Arms) (CW-4)	6-24
		6.2.5.1 Conclusions	6-24
		6.2.5.2 Recommendations	6-24
	6.2.6	Former Sanitary Treatment Plant (CW-5)	6-25
		6.2.6.1 Conclusions	6-25
		6.2.6.2 Recommendations	6-25
	6.2.7	Pesticide Storage Building T-2044 (CW-6)	6-25
		6.2.7.1 Conclusions	6-26

LIST OF FIGURES

Figure No.	Title	Page
1.1-1	Location of Main Post and Charles Wood	1-3
2.3-1	Main Post and Charles Wood Wetlands	2-3
2.4-1	Main Post and Charles Wood Soil Series Map	2-7
3.5-1	Transformer Site Sampling Locations at Building 1220, Main Post	3-14
3.5-2	Transformer Site Sampling Locations at Buildings 2000 and 2018, Charles Wood	3-15
4.2-1	Main Post Site Location Map	4.2-11
4.2-2	Main Post Background Sample Locations	4.2-13
4.2-3	Landfill 2 (M-2) Sampling Locations	4.2-25
4.2-4	Landfill 2 (M-2) Approximate Groundwater Flow Directions	4.2-27
4.2-5	Distribution of Contaminants in Site Groundwater and Surface-Water Samples	4.2-29
4.2-6	Main Post Surface-Water and Sediment Sampling Locations	4.2-31
4.2-7	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Sampling Locations	4.2-43
4.2-8	Magnetometer Survey Total Magnetic Field — Site M-3	4.2-45
4.2-9	Magnetometer Survey Magnetic Gradient — Site M-3	4.2-47
4.2-9A	Representative Radar Profile Depicting Landfill Boundary at Site M-3	4.2-49
4.2-9B	Radar Profile Showing Surface Drum and Hyperbolic Radar Signatures at Site M-3	4.2-51
4.2-10	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Approximate Groundwater Flow Directions	4.2-53
4.2-11	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Distribution of Contaminants in Site Groundwater	4.2-55

LIST OF FIGURES
(Continued)

Figure No.	Title	Page
4.2-30	Electromagnetic Survey in Phase Component — Site M-18	4.2-155
4.2-30A	Radar Profile Depicting Potential UST at Site M-18	4.2-157
4.2-31	Former Training Area (M-18) Approximate Groundwater Flow Directions	4.2-159
4.2-32	Former Training Area (M-18) Distribution of Contaminants in Site Soil and Groundwater	4.2-161
4.2-33	Former Sanitary Treatment Plant (AOC-3) Soil and Sediment Sampling Locations	4.2-169
4.2-34	Pre-1941 Sanitary Treatment Plant (Distribution of Contaminants in Site Sediment)	4.2-175
4.2-35	Main Post Transformer Site Sample Locations	4.2-181
4.3-1	Charles Wood Site Location Map	4.3-9
4.3-2	Charles Wood Background Sample Locations	4.3-11
4.3-3	Acid Neutralization Lime Pits (CW-1 and CW-2) Sampling Locations	4.3-21
4.3-4	Acid Neutralization Lime Pits (CW-1 and CW-2) Approximate Groundwater Flow Directions	4.3-23
4.3-5	Acid Neutralization Lime Pits (CW-1 and CW-2) Distribution of Contaminants in Site Soil and Groundwater	4.3-25
4.3-6	Landfills 3 (CW-3) and 3A (CW-3A)	4.3-37
4.3-7	Electromagnetic Survey Quadrature Component — Site CW-3A	4.3-41
4.3-8	Electromagnetic Survey in Phase Component — Site CW-3A	4.3-43
4.3-9	Magnetometer Survey Total Magnetic Field — Site CW-3A	4.3-45
4.3-10	Magnetometer Survey Magnetic Gradient — Site CW-3A	4.3-47
4.3-10A	Radar Profile Showing Subsurface Anomaly at Site CW-3A	4.3-49

LIST OF TABLES

Table No.	Title	Page
2.5-1	Geologic and Hydrogeologic Units in the New Jersey Coastal Plain	2-13
2.7-1	A Partial List of Trees and Shrubs Found in Monmouth County	2-17
2.7-2	Mammals Found in Monmouth County	2-18
2.7-3	Reptiles and Amphibians Found in Monmouth County	2-19
2.7-4	Endangered Birds and Very Rare Fish Found in Monmouth County	2-20
3.3-1	Summary of Surface-Water Field Parameters	3-8
3.5-1	Sampling at Former PCB Transformer Sites	3-11
3.6-1	Main Post and Charles Wood Soil Sampling Analytical Parameters	3-17
3.7-1	Main Post Well Completion Summary	3-20
3.7-2	Charles Wood Well Completion Summary	3-21
3.8-1	Main Post and Charles Wood Sampling Parameters Table for February and March 1995 Sampling Rounds	3-24
4.1-1	NJDEP Groundwater Quality Criteria — Class II-A and Practical Quantitation Levels — February 1993	4.1-2
4.1-2	NJDEP Soil Cleanup Criteria — February 1994	4.1-6
4.1-3	Surface-Water Quality Standards for Fresh and Saline Waters	4.1-11
4.1-4	Sediment Guidance Values for Detected Contaminants	4.1-15
4.1-5	Potentially Applicable PCB Cleanup Levels	4.1-16
4.1-6	Main Post — Summary of Site-Specific and Monmouth County Soil and Groundwater Maximum Background Concentrations	4.1-19
4.1-7	Charles Wood — Summary of Site-Specific and Monmouth County Soil and Groundwater Maximum Background Concentrations	4.1-20
4.1-8	Main Post Surface-Water and Sediment Maximum Background Concentrations	4.1-25

LIST OF TABLES
(Continued)

Table No.	Title	Page
4.2-15	Summary of Average Concentrations of Detected Compounds in Groundwater — Site M-16	4.2-130
4.2-16	Summary of Detected Compounds in Soil — Site M-18 (VOCs and TPH Only)	4.2-143
4.2-17	Summary of Detected Compounds in Soils — Site M-18 Sample SB06-A02	4.2-144
4.2-18	Summary of Average Concentrations of Detected Compounds in Groundwater — Site M-18	4.2-146
4.2-19	Summary of Detected Compounds in Soil — Site AOC-3	4.2-165
4.2-20	Summary of Detected Compounds in Sediment — Site AOC-3	4.2-167
4.2-21	Summary of Detected Compounds in Sediment — Site Pre-1941 Sanitary Treatment Plant	4.2-172
4.2-22	Results of Transformer Site Sampling on Main Post	4.2-178
4.3-1	Site Investigation Summary — Charles Wood	4.3-2
4.3-2	Differences Between Proposed and Actual Work at Charles Wood	4.3-4
4.3-3	Summary of Detected Compounds in Soil — Site CW-1	4.3-16
4.3-4	Summary of Average Concentrations of Detected Compounds in Groundwater — Site CW-1	4.3-17
4.3-5	Summary of Detected Compounds in Soil — Site CW-2	4.3-30
4.3-6	Summary of Average Concentrations of Detected Compounds in Groundwater — Site CW-2	4.3-32
4.3-7	Summary of Detected Compounds in Soil — Site CW-4	4.3-53
4.3-8	Summary of Detected Compounds in Soil — Site CW-5	4.3-61
4.3-9	Summary of Detected Compounds in Sediment — Site CW-5	4.3-64

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

BACKGROUND

The U.S. Army Corps of Engineers (USACE), Baltimore District, contracted Roy F. Weston, Inc. (WESTON®) to perform a field investigation at Fort Monmouth, NJ. This investigation was conducted at two separate areas of Fort Monmouth, i.e., the Main Post and Charles Wood. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) in 1980. This report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). A background investigation was conducted of the 37 sites and 8 additional sites that were identified by Fort Monmouth and the New Jersey Department of Environmental Protection (NJDEP). WESTON's recommendations were described in a report titled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*. Additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas (WESTON, 1993). NJDEP approved the recommendations on 20 April 1995. Additional investigations were also recommended at the Evans Area, but since the Evans Area will be closed, further investigations there will be completed under the Base Realignment and Closure (BRAC) program.

This report presents the results of field investigation activities that were performed at 13 sites at the Main Post area and 8 sites at the Charles Wood area. Field investigation activities were performed between November 1994 and March 1995. The field investigation activities included surface geophysical investigations, sediment and surface-water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitor well installation and sampling, and tidal monitoring. At one site in the Charles Wood area (CW-3) the presence of construction rubble prohibited sample collection as planned. The rubble was removed in June 1995 and exploratory trenches are planned at this site.

The geophysical investigations were performed between 29 November and 15 December 1994 to delineate the landfill boundaries at Main Post areas M-3, M-12, M-14, and M-18, and at

Charles Wood area CW-3A. The sediment and surface-water samples were collected on 1 and 2 December 1994 from locations along Parkers Creek on the Main Post and in a tributary to Wampum Brook on the Charles Wood site. The purpose of collecting the surface-water and sediment samples was to evaluate the potential impact of the areas of concern on sediment and surface water, and to confirm sample results collected as part of a previous investigation. The sampling of eight transformer areas at Main Post and three transformer areas at Charles Wood was conducted on 1 and 2 December 1994. The transformer area sampling consisted of collection of concrete chips and soil samples from areas potentially impacted by leaking transformers.

Subsurface soil samples were collected as part of soil boring and monitor well installation program, which was conducted between 13 December 1994 and 23 January 1995.

Soil borings were completed at the following Main Post sites: M-16, M-18, and AOC-3; and at Charles Wood sites: CW-1, CW-2, CW-4, CW-5, CW-6, CW-9, and AOC-7. A total of 45 shallow groundwater monitor wells were installed and developed at both the Main Post and Charles Wood areas. Additionally, at Landfill 8 (M-8), a total of 11 previously installed wells were abandoned because of suspect well integrity (six 4-in. diameter monitor wells and five 2-in. diameter piezometers).

Groundwater monitor wells were sampled twice. Both rounds of sampling were conducted in conjunction with a 72-hr tidal monitoring study to evaluate the effect of tidal fluctuations on water levels in site monitor wells. Round 1 tidal monitoring was performed on 30 January to 3 February 1995, followed by round 1 of groundwater sampling on 13 to 22 February 1995. Round 2 tidal monitoring was performed on 20 to 24 March 1995, which was preceded by round 2 groundwater sampling on 7 to 15 March 1995. Two existing monitor wells, one at site M-18 on the Main Post, and one at site CW-6 on Charles Wood, were sampled for two rounds in May 1995. The two rounds of groundwater sampling were conducted within 30 days of each other as specified in the *Technical Requirements for Site Remediation* (NJAC 7:26) to provide for averaging the analytical results.

The concentrations were then compared to the NJDEP criteria and then to maximum background concentrations. Background concentrations are based on sampling at on-site background locations and a review of Monmouth County data.

The results of and recommendations for the investigated sites follow.

MAIN POST

M-2: Chlorobenzene concentrations were detected in all three wells indicating a potential upgradient source. Other volatile organic compounds (VOCs) were detected in surface-water samples. Samples will be collected on a long-term basis from existing groundwater and surface-water sampling locations.

M-3: Low chlorobenzene concentrations were detected in one downgradient well. No surface-water concentrations exceeded NJDEP criteria and background. Samples will be collected on a long-term basis from existing groundwater and surface-water sampling locations. Additionally, a partially exposed drum was observed in the northeast corner of the site. The location of the exposed drum will be investigated by excavation.

M-4: One pesticide compound was detected at a concentration just above the NJDEP Groundwater Quality Criteria (GWQC) in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells. Existing monitor wells will be sampled on a long-term basis.

M-5: Tetrachloroethene (PCE) was detected in the upgradient well. Existing monitor wells will be sampled on a long-term basis.

M-8: VOCs were detected in upgradient and downgradient wells. Existing monitor wells will be sampled on a long-term basis.

M-12: Compounds of concern were not detected in groundwater samples collected at the site. Existing monitor wells will be sampled on a long-term basis.

M-14: No compounds of concern were detected in groundwater samples. Compounds of concern were not detected in surface-water samples collected at the site. Existing monitor wells and surface-water sampling locations will be sampled on a long-term basis.

M-15: Pesticides, lead, cadmium, and zinc were detected in soil samples collected near the water tank. Paint chips and affected soil will be removed and confirmation samples will be collected following removal.

M-16: Compounds of concern were not detected in the groundwater samples collected at the site. Pesticide concentrations were detected in soil samples collected around the former pesticide storage building. The contaminated soil will be excavated in conjunction with confirmatory sampling and the monitor well will be abandoned.

M-18: Semivolatile organic compound (SVOC) concentrations were detected in soil samples collected from one soil boring and pesticides were detected in groundwater samples from one monitor well. Geophysical results indicate an area where anomalous readings may indicate an underground storage tank (UST). Trenching will be performed at the suspected UST location and the SVOC-contaminated soil will be removed at the soil boring location. Additionally, the monitor wells will be sampled on a long-term basis.

AOC-3: Former Main Post Sanitary Treatment Plant (AOC-3): No compounds of concern were identified in soil borings and sediment samples. No additional action will be taken.

STP: Pre-1941 Sanitary Treatment Plant: Metals were detected in a sediment sample at the outfall of the pre-1941 sanitary treatment plant (STP). No further action will be taken because access to the site is restricted.

PCB Transformers—Main Post: Polychlorinated biphenyl (PCB) levels in stained concrete were found to exceed NJDEP criteria in three indoor vaults. PCBs were also detected above applicable

soil standards in the soil beneath one pole-mounted transformer near Building 292. Since the indoor vaults are normally locked and access is restricted, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. In addition, the soil beneath the former location of the pole-mounted transformer will be resampled to determine the extent of contamination.

CHARLES WOOD AREA

CW-1: Compounds of concern were not detected in soil samples. VOC concentrations were detected in groundwater samples from three of the four wells. The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The results of the soil-gas survey will be used to locate two additional monitor wells. The new and existing wells will be sampled on a long-term basis.

CW-2: PCB concentrations were detected slightly above the NJDEP Soil Cleanup Criteria (SCC) in one sample from the 7- to 9-ft interval. VOC concentrations were detected in one well in one of the two sampling rounds. The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The results of the soil-gas survey will be used to locate two additional monitor wells. The new and existing wells will be sampled on a long-term basis.

CW-3: Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed in June 1995, and exploratory trenches are planned to determine if any subsurface debris or soil staining is present.

CW-3A: The results of the geophysical surveys indicated possible buried material at two areas. Exploratory trenching will be conducted at each area to evaluate the nature of the geophysical anomaly.

CW-4: Lead was detected in one soil sample exceeding background concentrations and the NJDEP SCC. Impacted soils will be removed and confirmation samples will be collected at the base of the excavation.

CW-5: No compounds of concern were identified in soil and sediment samples. No further action will be taken.

CW-6: Dieldrin and cadmium were detected in separate soil samples above NJDEP SCC and site background concentrations. The average concentrations of dieldrin and cadmium in surface soil samples collected at CW-6 and CW-9 do not exceed the NJDEP criteria. Benzene was detected in one monitor well. The existing monitor wells will be sampled on a long-term basis.

CW-9: The average concentration of cadmium in surface soil samples at CW-6 and CW-9 does not exceed the NJDEP criteria. No further action will be taken at this site.

AOC-7: No compounds of concern were identified in soil samples. No further action will be taken at this site.

PCB Transformers—Charles Wood: PCBs were detected above NJDEP criteria in soil samples taken near the former location of a transformer pad (see Figure 4.3-18). The contaminated soil will be removed in conjunction with confirmatory sampling.

REPORT ORGANIZATION

Section 1 of this report is the Introduction and describes project objectives, facility information, site descriptions, sampling strategy, and site history. Section 2, Environmental Setting, summarizes environmental conditions such as climate, topography, surface-water drainage, soils, geology, hydrogeology, vegetation, and wildlife. Section 3, Investigation Activities, describes the procedures and methodologies used for the various site investigation activities. Section 4 summarizes the results of the investigation. Section 5 documents the data quality objectives (DQOs) and quality control (QC) procedures. Section 6 presents site-specific conclusions and recommendations. Field investigation data are presented in the appendices. Ground-penetrating

radar (GPR) profiles are contained in a separate volume (Appendix F), and are available upon request.

SECTION 1
INTRODUCTION

SECTION 1

INTRODUCTION

1.1 PROJECT OBJECTIVES

The objectives of this investigation are as follows:

- Perform site investigations to determine if contamination exists, and, if present, to evaluate the extent and degree of contamination at the 22 sites (presented in Figure 1.1-1). These sites were originally identified as potential hazardous waste sites in the Installation Assessment (IA) (USATHAMA, 1980).

- Evaluate the results of the investigation and compare with the following criteria:

  - New Jersey Soil Cleanup Guidance Criteria, 3 February 1994, and winter 1995.

  - NJDEP Groundwater Quality Standards, February 1993.

  - NJDEP Surface-Water Quality Standard, December 1993.

  - Cleanup Standard for Contaminated Sites, New Jersey Administrative Code 7:26D (proposed and withdrawn).

  - NJDEP Sediment Quality Standards, 1991, or marine/estuarine biological effects screening levels (Long et al., 1995).

- Recommend one of four alternatives for each site:

  1. No additional investigation or remediation is required.

  2. Additional field investigations are necessary.

  3. Conduct long-term groundwater and/or surface-water monitoring.

  4. Sufficient data exist to proceed with remedial design and interim or final remedial action.

Refer to the Executive Summary for background information regarding this effort.

WESTON performed the investigation activities as set forth in the U.S. Army Corps of Engineers (USACE) Scopes of Work dated 10 August 1994 for Charles Wood and 12 August 1994 for Main Post. Site investigation activities included:

- Planning documents preparation:
  - Chemical Data Acquisition Plan and Field Sampling Plan (CDAP/FSP).
  - Safety, Health and Emergency Response Plan (SHERP).
- Field investigations:
  - Geophysical investigation.
  - Sediment sampling.
  - Surface-water sampling.
  - Surface and subsurface soil sampling.
  - Transformer site sampling.
  - Groundwater well installation and sampling.
  - Tidal monitoring.
- Report preparation:
  - Draft and final site investigation reports.

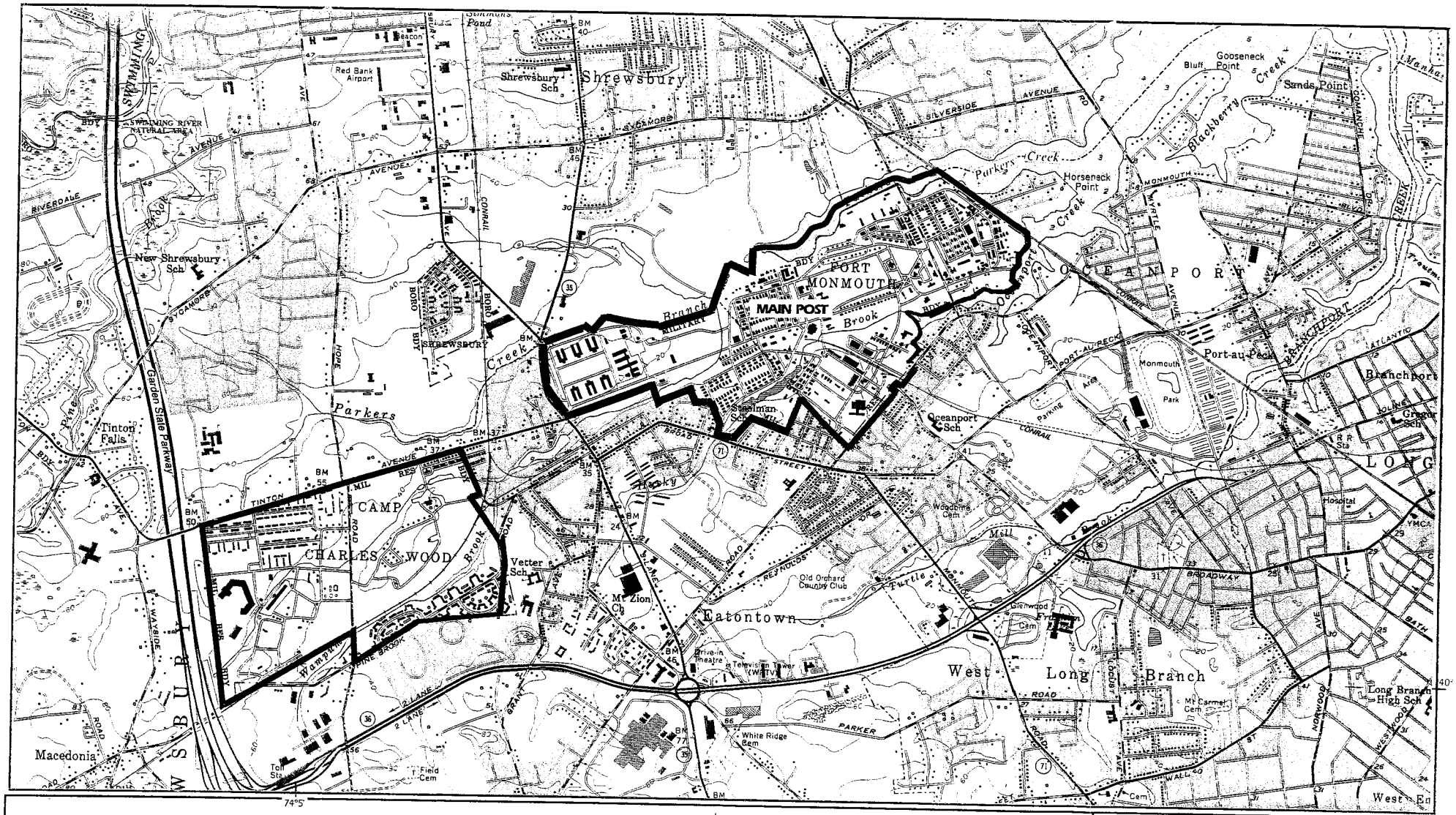
1.2 FACILITY DESCRIPTION

1.2.1 Owner/Operator Information

Fort Monmouth is a government-owned, government-operated (GOGO) military installation that provides command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM).

1.2.2 Location of Fort Monmouth

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County (see Figure 1.1-1). The installation contains two subposts (Charles Wood Area and Evans Area), in addition to the Main Post, which are located within a 12-mile radius of the Main Post. Descriptions of the Main Post and Charles Wood are presented in the subsections that follow.



Fort Monmouth, Main Post and Charles Wood

FIGURE 1.1-1
LOCATION OF MAIN POST AND CHARLES WOOD
MONMOUTH COUNTY, NEW JERSEY

The Evans Area will be handled under the Base Realignment and Closure (BRAC) Program and will not be discussed in this report.

1.2.2.1 Main Post

The Main Post (Figure 1.1-1) encompasses an area of approximately 630 acres and is bounded by State Highway 35 to the west, Parkers Creek and Lafetra Creek to the north, the New Jersey Transit Railroad to the east, and a residential neighborhood to the south. The Main Post provides supporting administrative, training, and housing functions as well as many of the community facilities for Fort Monmouth.

1.2.2.2 Charles Wood Area

The Charles Wood Area (Figure 1.1-1), is composed of approximately 511 acres, and is located 1 mile west of the Main Post and is bounded by Tinton Avenue to the north, residential development and Pine Brook Road to the south, and the Garden State Parkway to the west. This area is used primarily for research and development (R&D), and testing, and provides the greatest number of housing units available on-post.

1.2.3 Mission Statement

The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, CECOM. CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant. The support provided is used by tenant activities in the performance of R&D, procurement, and production of prototype electronic communication material for use by the U.S. Armed Forces.

The major tenant activities to which Headquarters, CECOM is the host tenant include:

- U.S. Army Laboratory Command (LABCOM)
- U.S. Army Aviation Research and Development Activity (AVRADA)

- U.S. Army Information System Management Agency (ISMA)
- Joint Tactical Communications Office (TRI-TAC)
- U.S. Army Chaplain Board
- U.S. Army Chaplain Center and School (USACHCS)
- U.S. Army Military Preparatory School (USAMPS)
- U.S. Army Medical Department Activities (MEDDAC)
- U.S. Army Dental Activity (DENTAC)
- U.S. Army Audit Agency
- Small Business Administration (SBA)
- U.S. Army Information Systems Command (ISC)
- U.S. Army Special Security Detachment
- 902nd Military Intelligence Group
- U.S. Army Criminal Investigation Command
- U.S. Army Commissary
- U.S. Army Newark District Recruiting Command
- U.S. Army Corps of Engineers (USACE), New York District
- Defense Contract Administration Services Management Area, Springfield District
- Defense Investigation Services (DIS)
- Defense Contract Audit Agency (DCAA)
- 513th Military Intelligence Brigade
- Joint Interface Test Force
- 535th Engineer Detachment
- 54th Ordnance Detachment

1.2.4 History of Fort Monmouth

This subsection presents a history of Fort Monmouth with emphasis on environmentally significant activities. The subsection is based primarily on the books, *A Concise History of Fort Monmouth, New Jersey,* and *Fort Monmouth History and Place Names, 1917-1959.*

The Main Post of Fort Monmouth was established on 17 June 1917 as Camp Little Silver. The site of the Main Post had formerly been a horse racetrack, but the track had not been used since 1890. The name of the Camp was changed after 3 months to Camp Alfred Vail. The initial mission of the Camp was to train Signal Corps operators for service in World War I. In the first 19 months of the Camp's existence, 129 semipermanent structures were built, a tent camp was established on the site of a former swamp, and a parade ground was established on the site of a former marsh. A radio laboratory and an airfield were developed in 1918. After the war, Camp Vail was designated as the site of the Signal Corps School, the only training area for Signal Corpsmen in the country. All but four of the World War I structures were demolished by 1924.

In 1925 the facility became a permanent post and its name was changed to Fort Monmouth. The primary mission of Fort Monmouth continued to be Signal Corps training and electronics research. In 1934 the laboratory was consolidated in a new building, Squier Laboratory (Building 283), and research on radios and radar continued. During World War II, the pace of training increased tremendously at Fort Monmouth. The expanded laboratory effort was accomplished by starting laboratories at other Army facilities. Squier Laboratory continued to be the principal laboratory on Main Post until 1954, after which laboratory operations moved to Charles Wood. In 1955 and 1956, 72 World War II wooden structures were demolished to accommodate permanent structures. These new buildings were used for residential, administration, commercial, and recreational purposes. A small number of additional administrative buildings were constructed during the 1970s and 1980s.

Camp Charles Wood was purchased in 1941 by the U.S. Army and opened in 1942. The eastern half of the property was formerly a golf course, and the western half was residential and

farmland. During World War II, the Camp was used for training Signal Corpsmen. Antenna shelters were constructed on 26.5 acres of land and used by the Signal Corps Laboratory for R&D purposes. This operation was placed under the command of the Army Air Force until 1951, when the operation moved to another post. Signal Corps training ceased after World War II.

A new R&D laboratory, the Hexagon (Building 2700), was completed in 1954. Research activities that had formerly been conducted at Squier Laboratory on the Main Post, and some activities from the Evans Area, were transferred to Charles Wood. The laboratory continued to develop electronic equipment. A large amount of residential housing was built from 1953 to 1970. In 1956, 90 World War II wooden structures were razed. The Pulse Power Laboratory was built in the early 1980s.

The document, *A Concise History of Fort Monmouth, New Jersey*, describes a number of R&D activities that were performed by the laboratories at Fort Monmouth. The document does not generally say where these activities were conducted. A partial list of research activities that were conducted in the Fort Monmouth laboratories includes:

- Radios, including vacuum tubes.
- Radar.
- Field TV cameras.
- Radiation dosimeters.
- Satellite instrumentation.
- Solar batteries.
- Laser communication, range-finding, and relay devices.
- Microelectronics.
- Night vision devices.
- Defibrillator pacemakers.
- Lithium batteries.

SECTION 2
ENVIRONMENTAL SETTING

SECTION 2

ENVIRONMENTAL SETTING

2.1 CLIMATE

The temperate-humid climate of Monmouth County, NJ, is characteristic of the temperate zone of the Mid-Atlantic states. The mean annual temperature for Monmouth County is 53 °F; the summers are generally warm, with an average temperature of 72 °F and a maximum temperature of 103 °F, recorded in July 1954. Winters are moderate, with an average temperature of 33 °F. The winter temperatures rarely drop below 0 °F, although the lowest recorded temperature was -8 °F, recorded at Freehold, NJ in February 1961 (Jablonski and Baumley, 1989).

Precipitation in Monmouth County averages 45.18 inches per year; slightly more than half the total annual precipitation falls between April and September (Jablonski and Baumley, 1989). Thunderstorms generally occur in the summer and may combine high winds with heavy rainfall. Heavy rains have occurred in connection with hurricanes or tropical storms that move northward along the Mid-Atlantic coast. Snow has fallen in Monmouth County in every month between October and April. The average seasonal snowfall is 25 inches, with the greatest amounts falling in December, January, and February (Jablonski and Baumley, 1989).

2.2 TOPOGRAPHY

2.2.1 Main Post

The land surface at the Main Post is relatively flat and ranges in elevation from 4 ft above mean sea level (msl) in the east at Oceanport Creek to 32 ft msl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft msl in elevation. The greatest elevation is at Landfill 8, located on Parkers Creek, and along Lafetra Creek, Mill Creek, and Husky Brook.

2.2.2 Charles Wood

At Charles Wood the land surface slopes from 72 ft msl in the southwest, to 20 ft msl at the eastern end of the golf course. In general, the southwestern corner of Charles Wood is gently rolling and has the greatest relief.

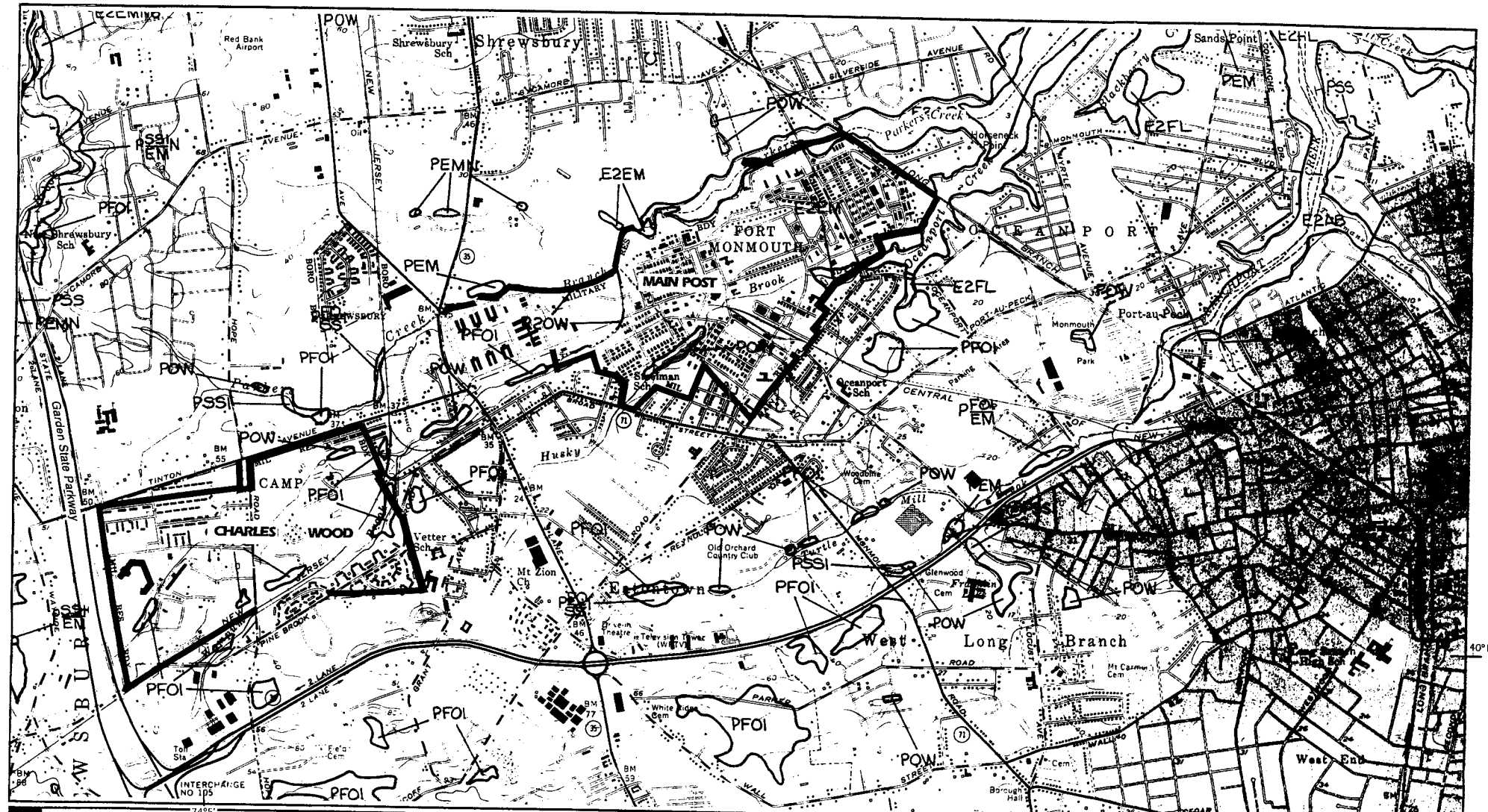
2.3 SURFACE-WATER DRAINAGE AND WETLANDS

2.3.1 Main Post

Surface-water runoff from the western part of the Main Post flows into Lafetra Creek to the north or into Mill Creek to the south. The names of streams indicated on U.S. Army site maps are used in this report. The USGS map (Figure 1.1-1) shows Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum Brook. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of Main Post until it turns north just past the Auto Craft Shop. Mill Creek is channelized and flows past several landfills. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek, and Mill Creek are tidally influenced.

Husky Brook originates off-post and, shortly after it flows onto the post, enters Husky Brook Lake. Surface-water drainage from the southern half of the post flows into Husky Brook and Husky Brook Lake through a series of drainage ditches and outfalls. Husky Brook exits Husky Brook Lake and flows into Oceanport Creek, which forms the southern boundary of the eastern post area. Oceanport Creek and Husky Brook are tidally influenced below Husky Brook Lake.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicated the presence of wetlands at the Main Post (Figure 2.3-1). Parkers and Oceanport Creeks are classified as estuarine intertidal aquatic beds. The area of Parkers Creek northwest of Building 294 and the part of Oceanport Creek/Husky Brook west of Murray Drive and east of Building 551 are classified as estuarine intertidal emergent wetlands. Lafetra Creek and



LEGEND

E2AB	Estuarine Intertidal Aquatic Bed
E2EM	Estuarine Intertidal Emergent Wetland
R2OW	Riverine Lower Perennial Open Water/Unknown Bottom
POW	Palustrine Open Water/Unknown Bottom
PFO1	Palustrine Forested Wetland, Broad-leaved Deciduous

Source: USFWS National Wetlands Inventory
Long Branch, New Jersey Quadrangle Map, 1981

0 1000 2000 3000 4000
SCALE IN FEET

2017-0600

10/20/93

Fort Monmouth, Main Post and Charles Wood

FIGURE 2.3-1
MAIN POST AND CHARLES WOOD WETLANDS

Mill Creek are classified as riverine lower perennial open water/unknown bottom. Husky Brook Lake is classified as palustrine open water/unknown bottom.

2.3.2 Charles Wood

The Charles Wood area is drained principally by two unnamed tributaries of Wampum Brook; one tributary flows eastward through the center of the camp, and the other flows along the southern boundary (Figure 1.1-1). East of Charles Wood, Wampum Brook is joined by several other unnamed tributaries before it becomes Wampum Lake. Wampum Lake discharges into Mill Creek, which flows through Main Post. Some runoff from the northwestern part of the golf course flows into Lafetra Creek, which is located just north of Tinton Avenue.

At Charles Wood, several wetland areas were identified on the FWS National Wetland Inventory Long Branch quadrangle map (Figure 2.3-1). The lake on the golf course is classified as palustrine open water/unknown bottom. Several areas along the unnamed tributaries to Wampum Brook are classified palustrine forested wetland, broad-leaved deciduous.

2.4 SOILS

2.4.1 Main Post

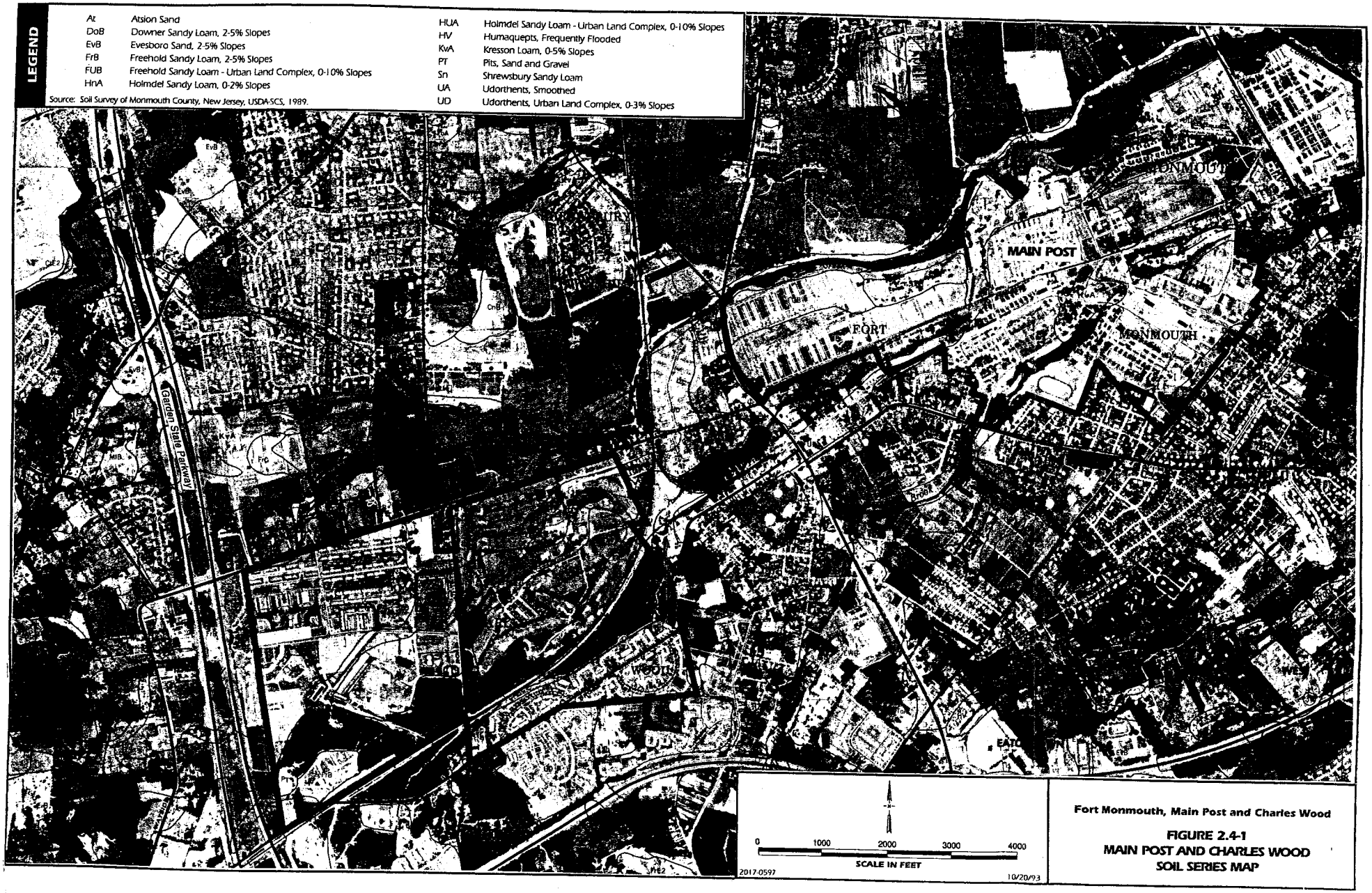
According to the Monmouth County Soil Survey (MCSS) (Jablonski and Baumley, 1989), much of the Main Post is covered by urban land (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post area:

- DoB Downer sandy loam, 2 to 5% slopes
- FrB Freehold sandy loam, 2 to 5% slopes
- FUB Freehold sandy loam — urban land complex, 0 to 10% slopes
- HV Humaquepts, frequently flooded
- KvA Kresson loam, 0 to 5% slopes
- UA Udorthents, smoothed
- UD Udorthents — urban land complex, 0 to 3% slopes

Figure 2.4-1 illustrates the distribution of these soil series. The Unified Soil Classification (USC) descriptors are shown in parentheses.

Downer series soils are well-drained soils found on uplands and terraces. These soils formed in acid, silty coastal plain sediments. The upper 10 inches are a very friable dark brown sandy loam, which has fine and medium roots and 2% pebbles (sandy silt: SM). The subsoil is 16 inches of strong brown sandy loam with faint clay in bridges between grains, fine and medium roots, and 10% pebbles (sandy silt to sandy clay: SM to SC). The substratum is a strong brown gravelly loamy sand with 35% pebbles, which is strongly acidic (sandy silt to sandy clay to poorly graded sand: SM, SC, SP). Permeability is moderate or moderately rapid in the subsoil and moderately rapid in the substratum, and as a result runoff is slow. The available water capacity is moderate. The seasonal high water table is at a depth of greater than 6 feet. The Downer series is represented on-site by the Downer sandy loam, 2 to 5% slopes (DoB). Downer soils are classified as nonhydric (Jablonski and Baumley, 1989).

Freehold soils are well-drained soils that formed in acid, loamy, coastal plain sediments that, by volume, are 1 to 10% glauconite and are found on uplands. The surface layer is a 9-in. thick, dark yellowish-brown sandy loam (sandy silt, sandy clay, silt, clay: SM, SC, ML, CL). The subsoil is 26 inches thick. The upper 16 inches of the subsoil are dark brown sandy loam and sandy clay loam with some glauconite. The lower 10 inches are brown sandy loam with glauconite. The substratum is yellowish-brown loamy sand with much glauconite to a depth of 70 inches (sandy silt: SM). Permeability is moderate in the subsoil and moderate or moderately rapid in the substratum and surface runoff is medium. The available water capacity is high. Two Freehold soils are found at Main Post: Freehold sandy loam, 2 to 5% slopes (FrB), and the Freehold sandy loam — urban land complex, with 0 to 10% slopes (FUB). Urban land consists of areas covered by impermeable surfaces, such as buildings, roads, and parking lots. The FUB soils were mapped as a complex because Freehold soils and urban land are found in an intricate pattern that made it impractical to map the Freehold soil separately. Freehold soils are classified as nonhydric (Jablonski and Baumley, 1989).



Fort Monmouth, Main Post and Charles Wood

FIGURE 2.4-1
MAIN POST AND CHARLES WOOD SOIL SERIES MAP

Humaquept soils are somewhat poorly to very poorly drained soils formed in stratified, sandy, or loamy sediments of fluvial origin. These soils are located on the flood plain and are subject to flooding several times a year. Humaquept soils are nearly always hydric. These soils differ in stratification from place-to-place. Typically, the surface layer and subsoil consist of stratified layers of sandy loam, loam, and silt loam (sandy silt, silt: SM, ML). The substratum consists of stratified layers of loamy sand, sandy loam, loam, and silt loam (sandy silt, silty clay, poorly graded sand: SM, SC, SP). In some areas, the stratified layers are gravelly or mucky. Permeability is moderate or moderately rapid in the subsoil and the substratum, and as a result runoff is slow. The available water capacity is high. The apparent seasonal high water table is between the surface and 1.5 feet. Organic matter varies from low to high. The soil is subject to frequent flooding in the early spring and during heavy rainfall (Jablonski and Baumley, 1989).

The Kresson loam is a nearly level to gently sloping, somewhat poorly drained, soil found on low divides and in depressions. The surface layer is dark brown loam, 9 inches thick (silty clay, sandy silt, sandy clay: CL, SM, SC). The first 22 inches of the subsoil are mottled olive-brown clay loam, and below that is a mottled olive-gray clay to a depth of 40 inches. The substratum is mottled, dark grayish-brown stratified sandy loam and sandy clay loam to a depth of 60 inches or more. The permeability of this soil is slow in the subsoil and the substratum. The available water capacity is high. The perched seasonal high water table is at a depth of 1 to 1.5 feet from December to May. Runoff is slow to medium. Organic content is moderate. The soil on-site is found in areas with 2 to 5% slopes (Jablonski and Baumley, 1989).

Udorthent soils have been altered by excavating or filling (Jablonski and Baumley, 1989). In filled areas, these soils consist of loamy material that is more than 20 in. thick. Filled areas include flood plains, tidal marshes, and areas with moderately well-drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal, or glass. Two Udorthent soils are found at Main Post: Udorthents, smoothed (UA), which may also include old sand and gravel pits that have been smoothed or filled in, and Udorthents — urban land complex, with 0 to 3% slopes (UD).

2.4.2 Charles Wood

The Monmouth County Soil Survey (Jablonski and Baumley, 1989) identified nine soil types at Charles Wood (Figure 2.4-1) as follows:

- At Atsion sand
- EvB Evesboro sand, 2 to 5% slopes
- FrB Freehold sandy loam, 2 to 5% slopes
- FUB Freehold sandy loam — urban land complex, 0 to 10% slopes
- HnA Holmdel sandy loam, 0 to 2% slopes
- HUA Holmdel sandy loam — urban land complex, 0 to 5% slopes
- PT Pits, sand, and gravel
- Sn Shrewsbury sandy loam
- UD Udorthents — urban land complex, 0 to 3% slopes

Freehold and Udorthents soils were previously discussed in Subsection 2.4.1 and are not discussed in this subsection.

The Atsion sand is a nearly level, poorly drained, soil found in depressional areas and on broad flats. The uppermost 2 inches are matted, partly decomposed organic material and roots with 6 inches of black sand below. The subsurface layer is a 14-in. thick grayish-brown sand (sandy silt to poorly graded sand: SM, SP). The subsoil is a dark reddish-brown loamy sand, 18 in. thick, with approximately 10 inches of mottled brown sand in the lower layer (sandy silt, sandy clay to poorly graded sand: SM, SC, SP). The substratum is a mottled yellowish-brown fine sand to a depth of at least 60 inches. Permeability is moderately rapid or rapid in the subsoil and rapid in the substratum. The available water capacity is low. Between November and June the seasonal high water table ranges from the surface to 1 foot (Jablonski and Baumley, 1989).

Evesboro soils are excessively drained soils that developed in acid, sandy, coastal plain sediments located on uplands. These soils have a 4-in. surface layer where the upper 2 inches are matted decomposed organic matter with 2 inches of grayish-brown sand in the lower layer. The subsurface layer is 5 inches of yellowish-brown sand (poorly graded sand to silty sand: SP, SM). The subsoil and substratum are yellowish-brown sand (poorly to well graded sand: SP, SW). Permeability is rapid in the subsoil and substratum. The available water capacity is low. The

seasonal high water table is at a depth of more than 6 feet. Runoff is slow. At Charles Wood, Evesboro soils are represented by the Evesboro sand with 2 to 5% slopes (EvB) (Jablonski and Baumley, 1989).

Holmdel soils are level, moderately well-drained to somewhat poorly drained soils found in depressions and on low divides. The surface layer is a 12-in. thick dark grayish-brown sandy loam (silty sand, sandy silt, sandy clay, clay, silt: SM, SC, CL, ML). The subsoil has two layers: the upper is a yellowish-brown sandy loam, 12-in. thick, and the lower layer is mottled yellowish-brown sandy clay loam to a depth of 38 inches. The substratum is mottled, yellowish-brown and light olive-brown sand and sandy loam to a depth of at least 60 inches (poorly graded sand, clayey sand: SP, SC). Permeability is moderate in the subsoil and the substratum, and the available water capacity is high. The seasonal high water table ranges from 1.5 to 4 feet between December and May. Runoff is slow. Two Holmdel soils are found at Charles Wood: the Holmdel sandy loam, 0 to 2% slopes (HnA), and the Holmdel sandy loam — urban land complex, with 0 to 5% slopes (HUA) (Jablonski and Baumley, 1989).

Soils classified as Pits, sand and gravel, have been excavated for sand and gravel. These areas are sand with varying amounts of gravel. The properties of these soils vary from place-to-place (Jablonski and Baumley, 1989).

The Shrewsbury sandy loam is a level poorly drained soil found in depressions, along drainageways, and on broad flats. The first inch is dark reddish-brown matted, partly decomposed organic material and roots with 8 inches of black sandy loam below. The subsurface layer is a 4-in. thick dark gray sandy loam (sandy silt, sandy clay, silt, clay: SM, SC, ML, CL). The subsoil has a 9-in. thick mottled grayish-brown sandy clay loam and 9 inches of mottled olive-gray sandy clay loam. The substratum is a mottled dark greenish-gray loamy sand (poorly graded sand, silty sand: SP, SM). Permeability is moderately slow or moderate in the subsoil and moderately rapid or rapid in the substratum, and the available water capacity is high. The seasonal high water table is between the surface and a depth of 1 foot from October to June. Runoff is slow and water ponds on the surface (Jablonski and Baumley, 1989).

2.5 GEOLOGY

2.5.1 Regional Geology

Monmouth County lies within the New Jersey section of the Atlantic Coastal Plain physiographic province. Main Post and Charles Wood are located in the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). Coastal Plain sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from the Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units that are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain (Table 2.5-1). Regressive, upward-coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The thicknesses of these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from 0 foot at the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

2.5.2 Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous Age Red Bank and Tinton Sands outcrop at the Main Post. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at a slope of 35 feet per mile. The upper member of the Red Bank sand (Shrewsbury) is a yellowish-gray to reddish-brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica, and glauconite (Jablonski, 1968). The

Table 2.5-1 *Geologic and Hydrogeologic Units in the New Jersey Coastal Plain*

System	Series	Geologic Unit	Lithology	Hydrogeologic Unit		Hydrologic Characteristics
Quaternary	*Holocene*	Alluvial deposits	Sand, silt, and black mud	Undifferentiated		Surficial material, often hydraulically connected to underlaying aquifers. Locally some units may act as confining beds. Thicker sands are capable of yielding large quantities of water.
		Beach sand and gravel	Sand, quartz, light-colored, medium- to coarse-grained, pebbly			
	Pleistocene	Cape May Formation	Sand, quartz, light-colored, heterogeneous, clayey, pebbly			
Tertiary	*Miocene*	Pensauken Formation				
		Bridgeton Formation		Kirkwood-Cohansey aquifer system		A major aquifer system. Groundwater occurs generally under water-table conditions.
		Beacon Hill Gravel	Gravel, quartz, light-colored, sandy			
		Cohansey Sand	Sand, quartz, light-colored, medium- to coarse-grained, pebbly; local clay beds			
		Kirkwood Formation	Sand, quartz, gray and tan, very fine to medium-grained, micaceous, and dark-colored diatomaceous clay	Confining bed		Thick diatomaceous clay bed occurs along coast and for a short distance inland. A thin water-bearing sand occurs within the middle of this unit.
				Rio Grande w-b		
				Confining bed		
				Atlantic City 800-foot sand		A major aquifer along the coast.
				Composite confining bed		Alloway Clay Member or equivalent.
	Eocene	Piney Point Formation	Sand, quartz, and glauconite, fine- to coarse-grained		Piney Point aquifer	Yields moderate quantities of water locally.
		Shark River Formation	Clay, silty and sandy, glauconitic, green, gray, and brown, fine-grained quartz sand			Poorly permeable sediments.
		Manasquan Formation				
	Paleocene	Vincentown Formation	Sand, quartz, gray and green, fine- to coarse-grained, glauconitic, and brown, clayey, very fossiliferous, glauconite and quartz calcarenite		Vincentown aquifer	Yields small to moderate quantities of water in and near its outcrop area.
		Hornerstown Sand	Sand, clayey, glauconitic, dark green, fine- to coarse-grained			Poorly permeable sediments.
Cretaceous	*Upper Cretaceous*	Tinton Sand	Sand, quartz, and glauconite, brown and gray, fine- to coarse-grained, clayey, micaceous		Red Bank Sand	Yields small quantities of water in and near its outcrop area.
		Red Bank Sand				
		Navesink Formation	Sand, clayey, silty, glauconitic, green and black, medium- to coarse-grained			Poorly permeable sediments.
		Mount Laurel Sand	Sand, quartz, brown and gray, fine- to coarse-grained, slightly glauconitic	Wenonah-Mount Laurel aquifer		A major aquifer.
		Wenonah Formation	Sand, very fine to fine-grained, gray and brown, silty, slightly glauconitic			
		Marshalltown Formation	Clay, silty, dark greenish-gray, glauconitic quartz sand	Marshalltown-Wenonah confining bed		A leaky confining bed.
		Englishtown Formation	Sand, quartz, tan and gray, fine- to medium-grained; local clay beds	Englishtown aquifer system		A major aquifer. Two sand units in Monmouth and Ocean Counties.
		Woodbury Clay	Clay, gray and black, micaceous silt	Merchantville-Woodbury confining bed		A major confining bed. Locally the Merchantville Formation may contain a thin water-bearing sand.
		Merchantville Formation	Clay, glauconitic, micaceous, gray and black; locally very fine-grained quartz and glauconitic sand			
		Magothy Formation	Sand, quartz, light-gray, fine- to coarse-grained; local beds of dark-gray lignitic clay	***Potomac-Raritan Magothy aquifer***	Upper aquifer	A major aquifer system. In the northern Coastal Plain, the upper aquifer is equivalent to the Old Bridge aquifer and the middle aquifer is the equivalent of the Farrington aquifer.
		Raritan Formation	Sand, quartz, light-gray, fine- to coarse-grained; pebbly, arkosic, red, white, and variegated clay		Confining bed	
	Lower Cretaceous	Potomac Group	Alternating clay, silt, sand, and gravel		Middle aquifer	
					Confining bed	
					Lower aquifer	
Pre-Cretaceous		Bedrock	Precambrian and lower Paleozoic crystalline rocks, metamorphic schist and gneiss; locally Triassic basalt, sandstone, and shale and Jurassic diabase	Bedrock confining bed		No wells obtain water from these consolidated rocks, except along the Fall Line.

95P-3382 9/26/95 Adapted from Zapecza, 1989.

lower member (Sandy Hook) is a dark gray to black medium- to fine-grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank sand and ranges from a clayey medium- to very coarse-grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish-orange or light brown to moderate brown, and from light olive to grayish olive. Glauconite may constitute 60 to 80% of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton sand is often highly oxidized and iron-oxide encrusted (Minard, 1969).

Both the Tinton sand and the Hornerstown sand (or marl) crop out at Charles Wood. The Hornerstown unconformably overlies the Tinton sand and is a dusky-green to grayish-olive or grayish-olive-green clayey glauconitic sand that may oxidize to moderate reddish-brown and dusky red. The percentage of quartz sand ranges from a few percent to 30%. Approximately half of this formation is composed of silt and clay.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County (Jablonski, 1968).

2.6 HYDROGEOLOGY

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed unconsolidated to semiconsolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as the Red Bank and Tinton sands) is dominated by calcium, magnesium, and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to nearshore environments.

The water table aquifer at the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink Formation, the Red Bank sand, Tinton sand, Hornerstown sand, Vincentown Formation, the Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

According to Jablonski (1968), wells drilled in the Red Bank and Tinton sands produce from 2 to 25 gallons per minute (gpm). Water in these upper hydrogeologic units is typically encountered at shallow depths (2 to 9 ft bgs). However, domestic wells are generally screened deeper in these upper hydrogeologic units. The shallow water table conditions in the Tinton and Red Bank sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Some well owners have reported acidic water that requires treatment to remove iron. Water in this water table aquifer will flow east toward the Atlantic Ocean. Local topography (stream valleys, etc.) will tend to deflect the flow toward local depressions.

Because of the high silt and clay content, the Hornerstown sand most likely serves as an aquitard or aquiclude rather than as an aquifer. Jablonski (1968) reports that localized areas may yield enough water for domestic use.

2.7 VEGETATION AND WILDLIFE

The information in this subsection was originally reported in the Installation Assessment (IA) (USATHAMA, 1980). Information on vegetation and wildlife of the Evans Area is not discussed in this document, but is presented in the IA.

The Fort Monmouth complex (Main Post and Charles Wood areas) lies within the outer Atlantic Coastal Plain, a region characterized by salt marsh wetlands. Both areas of Fort Monmouth have flood plain salt marshes along or within their boundaries. The ecosystem includes marsh grasses (*Phragmites, Spartina, Distichlis,* and *Scerpus*), small mammals, reptiles, amphibians, and migratory waterfowl. Parkers Creek is an ecologically unique area proximal to Fort Monmouth and its subposts. It is designated as a wildlife habitat bordering the Main Post.

Tables 2.7-1 through 2.7-4 were adapted from Appendix B of the IA report. Appendix B of the IA report also contains a list of vegetation and wildlife found during a survey of the Naval Weapons Station Earle, located approximately 10 miles from Fort Monmouth. Table 2.7-1 lists trees and shrubs found in Monmouth County. Monmouth County mammals are listed in Table 2.7-2, and reptiles and amphibians found in Monmouth County are listed in Table 2.7-3. Table 2.7-4 lists endangered birds and very rare fish in Monmouth County.

The FWS of the U.S. Department of the Interior (DOI) stated in a letter (included as Appendix E of the IA) that there are no federally listed or proposed threatened or endangered flora or fauna on Fort Monmouth. The letter also contains a list of federally endangered and threatened or candidate species in New Jersey. The Office of Natural Lands Management of NJDEP stated in a letter that there was one observance of a New Jersey listed endangered plant, the clustered sedge, in 1992, but there have been no other observances of federal or state rare species. The letter contained a list of rare species in the general vicinity of each area and in Monmouth County.

Table 2.7-1

A Partial List of Trees and Shrubs Found in Monmouth County

Trees	
White ash	Green ash
Big-toothed aspen	Quaking aspen
Atlantic white cedar	Basswood
American beech	Black birch
Gray birch	Black gum
Box elder	Black cherry
American chestnut	Flowering dogwood
Eastern red cedar	American elm
Eastern hemlock	Pignut hickory
Shagbark hickory	American holly
Ironwood	Black locust
Honey locust	Norway maple
Red maple	Silver maple
Red mulberry	White mulberry
Black oak	Swamp white oak
Chestnut oak	White oak
Pin oak	Willow oak
Pitch pine	Red pine
White pine	Sassafras
Black spruce	Norway spruce
Tree-of-heaven	Water tupelo
Black walnut	Black willow
Crack willow	Weeping willow
Shrubs	
Pink azalea	Swamp azalea
Wild azalea	Southern bayberry
Blackberry	Blackhaw
Blueberry	Common buttonbush
Chokeberry	Sand cherry
Coralberry	Large cranberry
Red osier dogwood	Swamp dogwood
Common elderberry	Fetter bush
Hawthorn	Huckleberry
Inkberry	Mountain laurel
Sweet pepperbush	Raspberry
Shadbush	Spicebush
Staghorn sumac	Poison sumac
Winged sumac	Arrowwood viburnum
Winterberry	Witch hazel

Table 2.7-2

Mammals Found in Monmouth County

Mammals	
Opossum	Gray fox
Smokey shrew	Woodchuck
Least shrew	Eastern chipmunk
Short-tail shrew	Eastern gray squirrel
Starnose mole	Red squirrel
Eastern mole	Southern flying squirrel
Keen's myotis (bat)	Beaver
Little brown myotis	White-footed mouse
Small-footed myotis	House mouse
Silver-haired bat	Norway rat
Eastern pipistrel	Southern bog lemming
Red bat	Boreal redback vole
Big brown bat	Meadow vole
Hoary bat	Pine vole
Raccoon	Muskrat
Longtail weasel	Meadow jumping mouse
Mink	Eastern cottontail rabbit
River otter	New England cottontail*
Striped skunk	Virginia white-tailed deer
Red fox	European hare

*Candidate for Federal List of Endangered Species.

Table 2.7-3

Reptiles and Amphibians Found in Monmouth County

Reptiles	
<u>Lizards</u>	
Northern fence	Five-lined skink
	Mud salamander*
<u>Turtles</u>	
Common snapping	Bog*
Wood*	Spotted
Musk	Eastern mud
Diamond-backed terrapin	Eastern painted
Eastern box	Red-eared
<u>Snakes</u>	
Eastern smooth earth	Red-bellied
Northern brown	Northern water
Eastern garter	Eastern ribbon
Eastern hognose	Eastern worm
Northern ringneck	Rough green
Northern black racer	Northern pine*
Black rat	Corn
Scarlet	Eastern milk
Eastern king	Timber rattler*
Amphibians	
<u>Toads</u>	
Eastern spadefoot	Fowlers
<u>Tree Frogs</u>	
Spring peeper	Gray
Pine barrens*	New Jersey chorus
<u>True Frogs</u>	
Cricket	Carpenter
Pickerel	Green
Northern leopard	Wood
Bull	

*On list of endangered or threatened species or candidate for Federal List of Endangered Species.

Table 2.7-4

Endangered Birds and Very Rare Fish Found in Monmouth County

Birds	
Bald eagle[a,b]	Black skimmer[b]
Peregrine falcon[a]	Least tern[b]
Osprey — Fish hawk — Salt marsh[b]	Eskimo curlew — protected by U.S. Government
Coppershawk	
American bittern[b]	
Barred owl[b]	
Black call[b]	
Bobolink[b]	
Cooper's hawk[b]	
Grasshopper sparrow[b]	
Great blue heron[b]	
Loggerhead shrike[b]	
Merlin[b]	
Northern harrier[b]	
Pied-billed grebe[b]	
Piping plover[b]	
Red-shouldered hawk[b]	
Roseate tern[b]	
Savannah sparrow[b]	
Short-eared owl[b]	
Upland sand piper[b]	
Vesper sparrow	
Fish	
Short nose sturgeon	

[a]Federal endangered and threatened species.
[b]New Jersey endangered and threatened species.

SECTION 3
INVESTIGATION ACTIVITIES

SECTION 3

INVESTIGATION ACTIVITIES

The site investigation (SI) at Fort Monmouth was performed in accordance with the CDAP (WESTON, 1994). A description of procedures used during the field investigation is provided in the following subsections.

3.1 GEOPHYSICS

A geophysical investigation was performed as part of the site investigation at Fort Monmouth between 29 November 1994 and 15 December 1994. The investigation was performed at locations within the Main Post and Charles Wood areas using electromagnetic (EM) conductivity, magnetometry (MAG), and/or ground penetrating radar (GPR) surveying methods. The objective of the geophysical investigations was to evaluate the location and extent of the known or suspected waste disposal areas at sites M-3, M-12, M-14, M-18, and CW-3A. The geophysical survey data were used to confirm planned subsequent monitor well and soil boring locations at each area.

Prior to the start of the geophysical investigation, a reference grid was established by a licensed surveyor at 20-ft by 100-ft centers to provide surface control for data collected at each site. The survey grid was established based on a local relative coordinate system using existing monuments and was later surveyed to a state-plane coordinate system. All field data collected at the Main Post and Charles Wood sites were referenced to the established grid coordinates.

3.1.1 Electromagnetic (EM) Terrain Conductivity Surveying Methods

3.1.1.1 Description

An EM survey was conducted at sites M-18 and CW-3A on 1 and 8 December 1994, respectively, using a Geonics, Ltd. EM-31™ terrain conductivity meter. The EM-31 is battery-powered and operates at a frequency of 9.8 kiloHertz (kHz). This system consists of a transmitting coil (primary field source), receiving coil (sensor), phase-sensing circuits, and an

amplifier. A fixed 3.7-meter intercoil spacing is standard for the EM-31. The instrument measures apparent conductivity in units of milliSiemens per meter (mS/m) in materials with true conductivities ranging up to 1,000 mS/m.

The EM-31 was operated in both the quadrature and in-phase components. The quadrature component is sensitive to conductors with low induction numbers (i.e., low conductivity materials). Relative conductivity values associated with in-phase measurements have a greater sensitivity to buried metal objects.

3.1.1.2 Methodology

Prior to conducting each survey, the EM-31 was calibrated in accordance with the instrument operating manual. No anomalies were observed in the calibration data. After calibration was completed, both the quadrature and in-phase components of the EM field were measured at the sites. Conductivity measurements were obtained in the vertical dipole mode of operation for single layer mapping. The effective depth of exploration associated with this mode of operation is approximately 18 feet (McNeill, 1980b).

The EM-31 was operated in a "continuous" mode along pre-established survey grid lines. Measurements were recorded at 5-ft intervals as the operator traversed the line. These measurements were digitally recorded and stored in memory in an Omni Data Logger™. Random quality assurance/quality control (QA/QC) readings were obtained from the EM-31 analog meter and manually recorded in the field notebook. The data in memory were downloaded from the data logger to a field computer. The computer-generated output files were edited and formatted, then compared against the random QA/QC readings recorded in the field logbook. Based on the QA/QC review of the data, no deficiencies were observed in the digitally recorded data.

Conductivity data point postings and contour plots were prepared from the field data using Geosoft™ contour plotting software. These maps (presented in Section 4) were interpreted initially for cultural features on the surface, such as fences. If it was determined that anomalies could be attributed solely to surface features, the anomalies were disregarded. The contour plots

were interpreted with regard to site soil characteristics, site-specific geology, and the suspected presence of buried waste materials. The results of the EM survey are presented and discussed in Section 4.

3.1.2 Magnetic (MAG) Methods

3.1.2.1 Description

The MAG survey was conducted at sites M-3, M-12, M-14, and CW-3A on 6 through 8 December 1994, using a GSM-19 Walking Gradiometer/Magnetometer. The instrument operates on the principle that protons or nuclei of hydrogen atoms in a hydrocarbon fluid behave as spinning magnetic dipoles where the protons are aligned or polarized by an induced current. When the current is removed, the natural spin of the proton causes them to precess about the direction of the earth's ambient magnetic field. This precession generates a small signal with a frequency proportional to the intensity of the total magnetic field. Local perturbations (induced magnetization) generated by anthropogenic (i.e., buried ferrous drums) and natural (i.e., magnetic mineral deposits) features add to the intensity of the ambient magnetic field. The magnetometer measures the vector sum of the earth's magnetic field and the anomalous induced magnetic field in standard nanoTesla (nT) units.

3.1.2.2 Methodology

Prior to conducting the survey, a base station magnetometer was established at each site in an area suspected to be representative of background conditions. The purpose of the base station was to monitor diurnal variations in the regional or "ambient" magnetic field during the actual survey. Both the base station and field magnetometers were calibrated and synchronized in accordance with the manufacturer's operating manual. No anomalies were observed in the calibration data. When calibration was completed, both the total field and magnetic gradient were measured at each station point. Additional QA/QC checks included taking readings at several locations periodically over the survey period to verify the repeatability of field results along with a swing sensor test, which was conducted to identify whether any directional bias existed in the instrument.

Consistent with the EM-31 survey, the magnetometer was operated in a "continuous" mode along the same pre-established survey grid lines. In the continuous mode, MAG measurements were recorded on at least 3-ft spacing intervals as the operator traversed the line. The MAG measurements were digitally recorded and stored in memory in the instrument's data logger.

The data in memory were downloaded from both data loggers to a field computer. Diurnal effects were monitored throughout the survey period but were considered to be negligible relative to the overall range of magnetic data. Therefore, postings of the data points and contour plots of both the total magnetic field and magnetic gradients were prepared from the field data using Geosoft™ contour plotting software. Each magnetic anomaly, as defined by a relatively high vertical gradient, was analyzed with respect to cultural features present on the surface, and the potential for buried ferrous material in the subsurface.

3.1.3 Ground Penetrating Radar (GPR) Methods

3.1.3.1 Description

A GPR survey was conducted at site M-18 on 30 November 1994 and at sites M-3, M-12, M-14, and CW-3A on 9 through 15 December 1994 using a Subsurface Interface Radar™ (SIR) System 10 model. The System 10 is a computer-controlled, multichannel unit that automatically displays, processes, and records cross-sectional color profiles of the subsurface.

The GPR method uses high frequency radio waves to acquire relatively shallow subsurface information. Short pulses of EM energy are radiated downward into the subsurface from a transmitting antenna. A portion of the energy is then reflected back to a receiving antenna, where variations in the reflected signal are continuously processed by a control unit, graphically recorded, and digitally stored on magnetic tape. The amplitude and frequency of the reflected signal are caused by variations in the electrical properties of subsurface materials. These variations may be caused by natural geologic conditions, such as composition, moisture content, salinity, and structure, as well as manmade objects such as utilities, underground storage tanks (USTs), and other buried objects.

The ability of the GPR system to resolve buried targets depends on the physical size and relative electrical contrast of an object/feature with respect to the surrounding materials. Consequently, not every subsurface feature can be identified using the GPR method. Also, since the GPR investigation is a nonintrusive surface electronic testing method, it is not possible to determine the exact description of subsurface anomalies.

3.1.3.2 Methodology

The GPR system was calibrated to site-specific conditions prior to implementation of the survey. To calibrate the system, either the dielectric constant of the survey medium or the depth to a buried object or interface must be known. The GPR system was field calibrated using an averaged dielectric constant for the survey medium. Based on assumed geologic and site conditions a dielectric constant of approximately 5 for the unsaturated unconsolidated soils and 10 for saturated unconsolidated soils was calculated for the materials underlying the sites. QA/QC checks included collecting a duplicate profile at each site to field-verify the repeatability of results.

The GPR survey was referenced to the surface control grid that was previously established at each site. Surveying was accomplished by traversing each area with a 300-megaHertz (MHz) antenna along the same grid lines previously surveyed with the EM and MAG. The product of the GPR survey is a series of real-time subsurface field profiles. The GPR data profiles were processed and interpreted using the GSSI RADAN3 software package. Select color profiles were reproduced in the office from the data tape to enhance subtle features that were not easily recognized on the gray scale of the black-and-white field profiles. These results were integrated with the EM and MAG data and are discussed in Section 4.

3.2 SEDIMENT SAMPLING

Sediment samples were collected by WESTON personnel from seven locations on and in the vicinity of Fort Monmouth on 1 and 2 December 1994. Sediments were sampled from two locations in Parkers Creek on the Main Post and one location in a tributary to Wampum Brook

on the Charles Wood site. Sediments were also collected at two locations upstream from the Main Post, one in Parkers Creek, and one in Mill Creek for background comparisons. Two background samples for Charles Wood were taken in Wampum Brook.

Sediment was collected from the top 3 to 6 inches of the substrate, using either with a stainless-steel trowel or a hand corer, depending on the water depth and compaction of the sediments. A trowel was used in shallow water with loose sediments, whereas a corer was used in deep water with compacted sediments. Sampling was based in areas of fine-grained sediment because some potentially site-related contaminants preferentially adsorb onto fine-grained sediment particles (U.S. EPA, 1982).

At all but one location, sediment samples were submitted for laboratory analysis of the following parameters:

- Target Compound List volatile organic compounds (TCL VOCs).
- TCL semivolatile organic compounds (TCL SVOCs).
- Target Analyte List (TAL) metals.
- Pesticides/polychlorinated biphenyls (PCBs).
- Cyanide.

In accordance with the CDAP, the sediment sample collected at the downstream location in Parkers Creek on the Main Post was only analyzed for TAL metals. This site was a sewage treatment plant in the 1940s, and metals are the only suspected contaminants.

To minimize the potential for volatilizing sediment samples collected for VOC analysis, VOC samples were collected first at each location. The sediment was placed directly into precleaned, prelabeled bottles. Sediment samples collected for all other analyses were then put in a stainless-steel bowl and mixed thoroughly before being transferred to bottles.

Sediment was collected for an original sample, a duplicate sample, a matrix spike (MS) sample, and a matrix spike duplicate (MSD) sample at the location suspected to have the greatest potential for contamination originating from the site and where the full suite of parameters was being analyzed (MP08, near Landfill 8 in Parkers Creek). After all samples collected for VOC

analysis were prepared at that location, sufficient sediment was collected in the bowl and mixed thoroughly to provide for both the original sample and duplicate samples.

Stainless-steel bowls and trowels, and the hand corer were decontaminated prior to use at each location according to instructions in the *Chemical Data Acquisition Plan for Site Investigation at Fort Monmouth, New Jersey* (WESTON, 1994). A laboratory-prepared trip blank was carried throughout the collecting effort for TCL VOC analysis.

After filling, sample bottles were sealed with a signed and dated custody seal, and put into polyethylene bags. Prepared bottles were packed in vermiculite in coolers. Bagged ice was put in the coolers, which were custody sealed and shipped according to U.S. Army Sampling Protocols ER 1110-263 and International Air Transport Association (IATA) regulations for next morning delivery to the laboratory.

3.3 SURFACE-WATER SAMPLING

Surface-water samples were collected from 10 locations on and in the vicinity of Fort Monmouth on 1 December 1994. Table 3.3-1 presents a summary of the surface-water parameters collected at the selected locations prior to sampling.

Surface-water samples were collected from six locations on the Main Post: two from Oceanport Creek, two from Parkers Creek, and two from Mill Creek. Surface water was also collected from both Lafetra Creek and Mill Creek upstream from the Main Post for background comparisons. Both background locations were selected because they are upstream from the head-of-tide and, therefore, were thought to be isolated from releases on the Main Post. Two surface-water samples were also collected on the Charles Wood site from a tributary to Wampum Brook for background comparison.

Surface-water samples were collected directly by submersing laboratory-cleaned sample bottles to a depth of 3 to 6 inches below the surface until completely filled. At locations where surface

Table 3.3-1

Summary of Surface-Water Field Parameters

Location ID	Temperature (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µmhos)	Water Depth (inches)	Channel Width (feet)	Sediment Type	Tidally Influenced
Main Post								
Background								
Lafetra Creek	6.5	9.8	7.6	260	12	15	Sand	No[a]
Wampum Creek	8.5	9.0	7.6	220	12	25	Large cobble	No[a]
Lafetra Creek								
MP10	6.5	9.6	7.7	270	3	25	Sand	Yes[a]
MP06	5.0	10.0	7.5	410	5	40	Sand	Yes[a]
Wampum Brook (MP02)								
SW01	9.0	9.2	8.0	230	12	20	Sand	No[a]
SW02	8.5	10.0	7.8	220	12	25	Sand	No[a]
Oceanport Creek (MP14)								
SW01	8.0	10.5	7.6	510	3	20	Sand	Yes[a]
SW02	8.0	9.4	7.7	980	36	20	Sand	Yes[a]
Charles Wood Background								
CW02	5.0	11.2	8.3	1,000	12	3	Sand, gravel, small cobble	No[b]
CW05	10.0	3.0	7.4	220	3	15	Silty sand, leaf choked	No[b]

[a]Results determined from conductivity and salinity measurements collected during tidal monitoring tests.
[b]Results based on field observations.

water was not sufficiently deep, a hole was made in the sediment to facilitate sample collection. Disturbed sediment was allowed to settle before water samples were collected. Clean surgical gloves were worn during surface-water sample collection and when handling sample bottles for shipping. Gloves were changed between sample locations.

Surface water was analyzed for the following parameters:

- TCL VOCs.
- TCL SVOCs.
- TAL total metals (unfiltered).
- TAL soluble metals (filtered).
- Pesticides/PCBs.
- Cyanide.

Samples for soluble metals were filtered with a peristaltic pump through a high capacity 0.45-micron filter.

Surface water was collected for an original sample, a duplicate sample, an MS sample, and an MSD sample at the location suspected to have the greatest potential for contamination originating from the site (sample MP06, near Landfill 6 in Parkers Creek). No equipment was used to collect surface water, so no rinsate blanks were collected.

Filled sample bottles were handled in the same manner as sediment sample bottles (see Subsection 3.2).

3.4 SURFACE SOIL SAMPLES

Surface soil samples were collected by WESTON personnel from 17 locations on and in the vicinity of Fort Monmouth, NJ on 29 and 30 November 1994. Of the surface soil locations, 6 were on the Main Post and 11 were on the Charles Wood site.

Surface soil was collected from within the upper 6 inches with a decontaminated stainless-steel trowel. To minimize the potential for volatilization, surface soil samples submitted for VOC

analysis were collected first at each location, placing the soil directly into laboratory-prepared bottles. Soil samples collected for all other analyses were then put in a decontaminated stainless-steel bowl and mixed thoroughly before being transferred to laboratory-prepared bottles.

At Main Post, the soil from all six sampling locations was analyzed for pesticides/PCBs and TCL SVOCs; the soil from the two locations at site M-15 was also analyzed for TAL metals and cyanide; and the soil from the four locations at site M-16 was also analyzed for TCL VOCs. Of those Charles Wood site locations where soil was analyzed for more than PCBs, all were analyzed for TAL metals and cyanide, and soil from location CW-6 was also analyzed for pesticides, TCL VOCs, and TCL SVOCs.

Rinse blanks submitted for TCL VOC analysis were collected or labeled at a Main Post location (MP-16) and a Charles Wood site location (CW-9). A duplicate soil sample for TAL metals and cyanide analysis was also collected at the Charles Wood site location (CW-9). Sufficient soil was collected at each duplicate sample location and mixed thoroughly in the bowl to provide for both the original and duplicate samples. Handling of soil samples was similar to that of sediment (Subsection 3.2).

3.5 PCB TRANSFORMER SITE SAMPLING

3.5.1 General

Two types of samples were collected (soil samples and concrete chip samples) to determine whether PCB contamination exists at any of the former PCB class transformer locations. Soil samples were taken under the former location of pole-mounted transformers and on each side of a pad-mounted transformer. Concrete chip samples were taken at stained areas on the concrete pads or vault floors. Table 3.5-1 summarizes PCB transformer sampling. All samples were analyzed for PCBs.

Table 3.5-1

Sampling at Former PCB Transformer Sites

Transformer Code	Location	Size (kVA)	Remarks	Description	Sampling
CW010	Building 2276-W side on Bataan Ave., pole	37	Replaced by CW261, CW262, and CW263.	Pole over grass-covered soil. No stain.	Collected soil sample (CWAE-TR01) at pole under former location of transformer.
CW035	Building 2000-NE side, pad	300	Replaced by CW268, CW269, and CW270.	On old approximately 4-ft by 6-ft concrete pad. Dark stains on pad.	Concrete pad had been removed. Collected four soil samples (CW07-TR01 to TR04) downgradient of former pad location (see Figure 3.5-2).
CW039, CW040	Building 2018-S side, pole	25	Replaced by CW265.	Pole over grass-covered soil. No visible stains.	Collected soil samples (CW07-TR05 and TR06) at poles. Because of uncertainty of exact location of former PCB transformers, sampled two pole sites (see Figure 3.5-2).
MP-007	Building 718, pole located approx. 75 ft east of Wilson.	37	Replaced by MP-495.	Pole located over grass-covered soil. No visible stain.	Collected soil sample (MPT4-TR01) at pole under former location of transformer.
MP-062	Building 292-NW side, pole	75	Removed, replaced.	Three on pole replaced by 3 on old pad that is directly under pole. No visible oil stain on pad.	Collected soil sample (MPT5-TR01) at pole under former location of transformer.
MP-104	Building 686-east, pole	37	Replaced by MP-489.	Located over grass-covered soil. No visible stain.	Collected soil sample (MPT6-TR01) at pole under former location of transformer.
MP-124	Building 1220-west side, pad	500	Replaced by MP-493.	On old approximately 8-ft by 10-ft concrete pad. Approximately 1-ft diameter brown stain on west side of pad.	Collected four soil samples and one concrete chip sample from pad (see Figure 3.5-1).
MP-280	Building 1002, indoor vault	750	Replaced by MP-494.	Concrete floor not refurbished; in good condition. Stains visible under front and back of new transformer. Stains may be connected, in which case stain would be about 5 ft in diameter.	Collected concrete sample from stained area under transformer (MPT7-CC01).

Table 3.5-1

Sampling at Former PCB Transformer Sites (Continued)

Transformer Code	Location	Size (kVA)	Remarks	Description	Sampling
MP-282, MP-283	Building 1004, pole located approx. 50 ft west of corner of Razor and Stephenson	10	Removed, no replacement.	Pole over pavement and grass-covered soil. No visible stain.	Collected soil sample (MPT8-TR01) at pole under former location of transformer.
MP-347, MP-348, MP-349	Building 1208, indoor vault	250	Replaced by MP-496.	Two small stains about 1 ft in diameter, one between MP-347 and MP-348 and one on NE side of MP-349.	Collected concrete sample from stained area (MPT2-CC01).
MP350, MP351, MP352	Building 1209, indoor vault	250	Replaced by MP-499.	Concrete was not refurbished; it is in good condition. Very slight stain, about 1 ft in diameter, between MP-352 and wall.	Collected concrete sample from stained area (MPT1-CC01).

Location:

CW — Charles Wood
MP — Main Post

3.5.2 Sample Collection Procedures

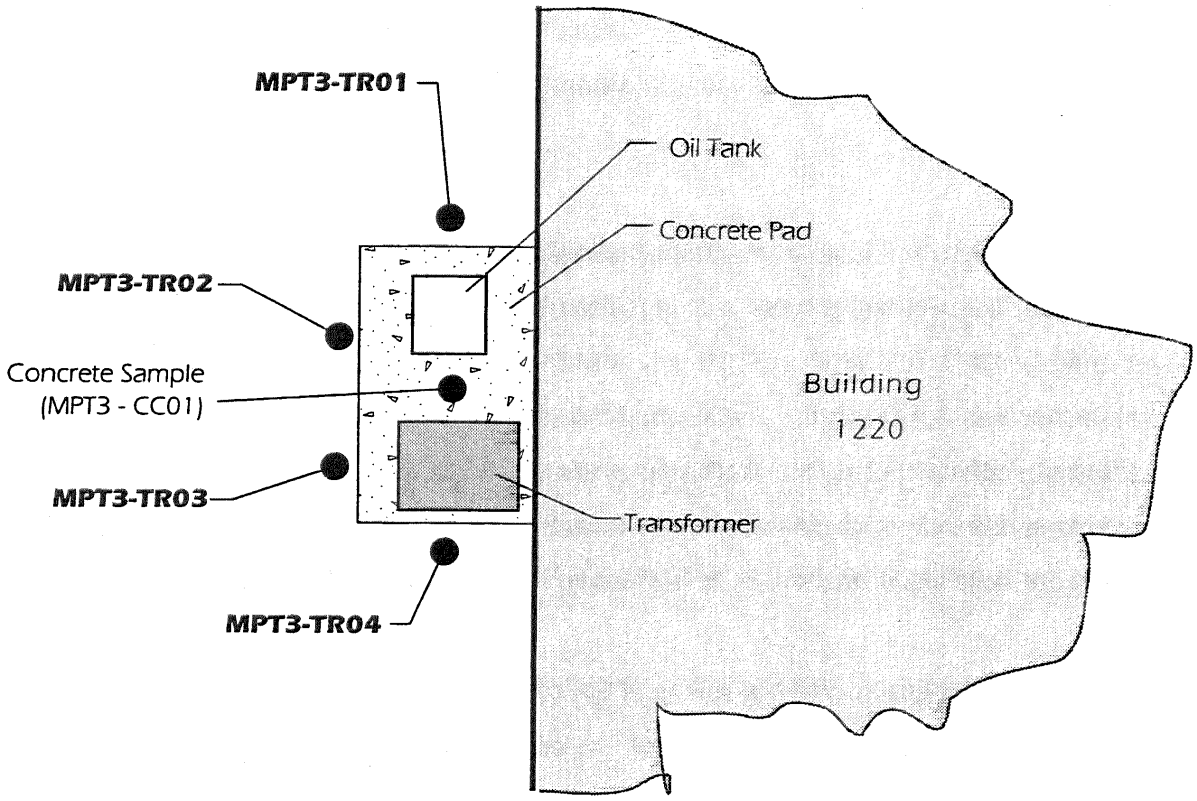
A soil sample was collected for PCB screening underneath each pole-mounted unit. Four discrete soil samples were taken at the sides of the concrete pad at Building 1220 (Figure 3.5-1). The pad at Building 2000 on Charles Wood had been removed prior to sampling, so four surface soil samples were taken along a natural drainage swale north and west of the former pad location (Figure 3.5-2).

Because a leak from a pole-mounted transformer could have occurred at any point on the transformer, a screening process was performed to detect soil contamination. Soil samples for screening were taken at three points immediately below the location of the pole-mounted transformer and were mixed. The samplers were directed to take a sample at any location with stressed vegetation, but no stressed areas were found. This process increases the likelihood of detecting small areas of contamination. Additional sampling will be conducted at locations where PCBs were detected in the soil at levels above or close to the NJDEP soil criteria.

At each soil sampling location a soil sample from 0 to 6 inches was collected with a stainless-steel scoop and placed in a mixing bowl. Stones and vegetation were removed from the soil matrix, and the remaining soil was mixed in a stainless-steel bowl. The sample was placed in a glass bottle with a Teflon-lined cap. A clean pair of disposable sample gloves was worn by the sampler during collection of each separate sample.

A concrete chip sample was taken in the middle of each stain on the concrete of a pad or vault. An electronic chipping hammer was used to chip the concrete to a depth of up to ½ inch and to pulverize the concrete for analysis. Chips were pulverized as fine as possible to facilitate laboratory extraction and analysis. A clean pair of disposable sample gloves was worn by the sampler during collection of each discrete sample.

Stainless-steel bowls and trowels were used and decontaminated prior to use in accordance with instructions in the CDAP (WESTON, 1994). Trip and field blanks and duplicate samples were prepared and submitted for analysis.



NOT TO SCALE

Legend

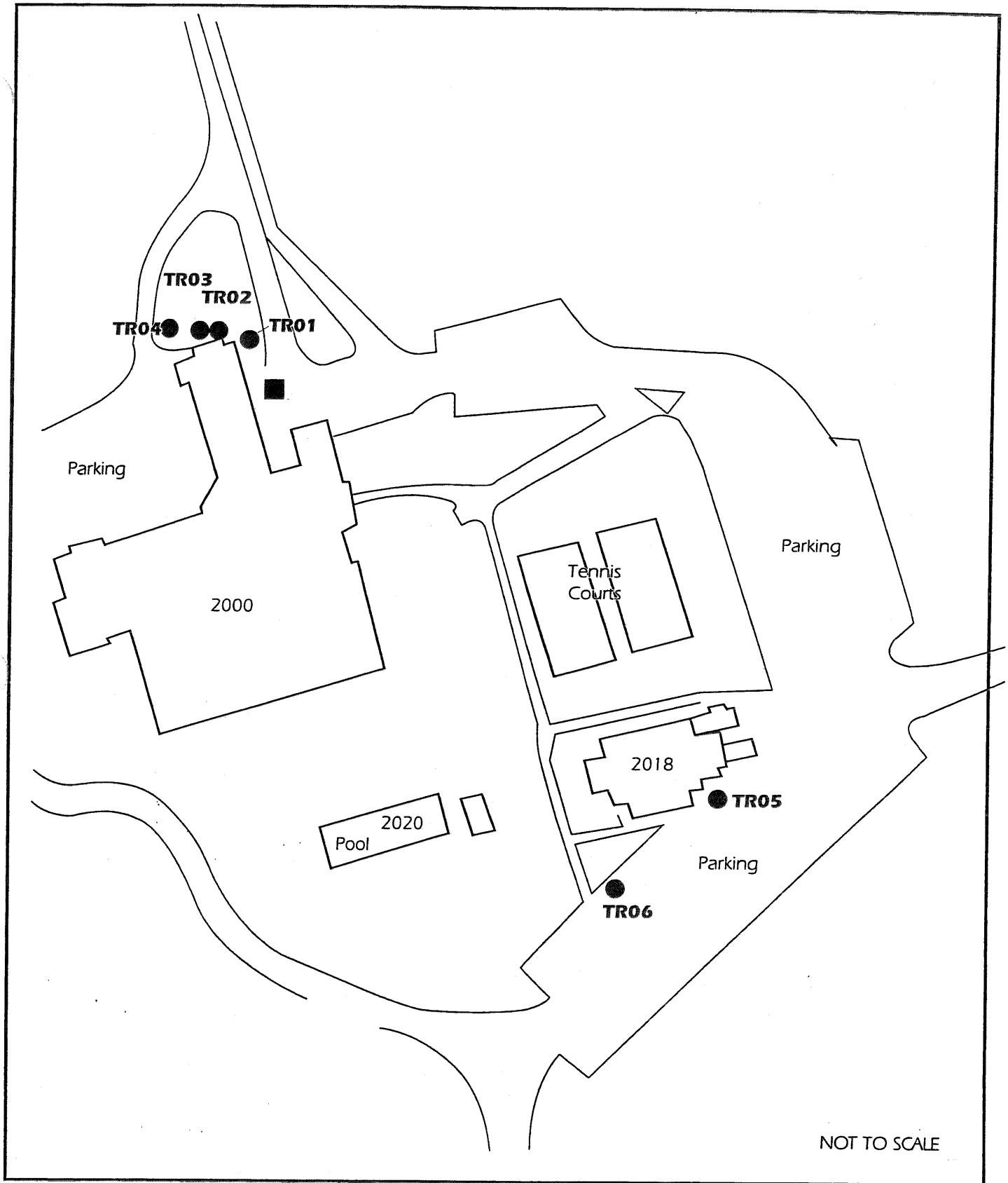
● Sampling Location

N

95P-3360 9/26/95

Fort Monmouth, Main Post

FIGURE 3.5-1
TRANSFORMER SITE SAMPLING LOCATIONS
AT BUILDING 1220, MAIN POST



Legend

- Sampling Location
- Former Transformer Pad

N

95P-3359 9/26/95

Fort Monmouth

FIGURE 3.5-2

TRANSFORMER SITE SAMPLING LOCATIONS AT BUILDING 2000 AND 2018, CHARLES WOOD

3.6 SOIL BORINGS

Soil borings were drilled at the following Main Post sites: M-16, M-18, and AOC-3; and Charles Wood sites: CW-1, CW-2, CW-4, CW-5, CW-6, CW-9, and AOC-7. The borings were completed to site-specific depths using hollow-stem auger drilling techniques to collect soil samples for laboratory analysis. Site-specific soil samples were analyzed for the parameters listed in Table 3.6-1. Lithologic logs are presented in Appendix A.

The borings were drilled using either 4.25-in. or 8-in. inside diameter (ID) hollow stem augers. Borings that were converted into monitor wells were drilled using the larger auger. Continuous split-spoon samples were collected according to the techniques specified in American Society for Testing and Materials (ASTM) Method 1586. All drilling was conducted by a New Jersey licensed driller.

Soil samples were collected from the soil borings using the following procedures:

1. Soil samples submitted for laboratory analysis were collected from borings using a 2-ft long, 2- or 3-in. diameter split spoon.

2. After retrieval, the split spoon was opened and immediately scanned with an organic vapor detector as a preliminary assessment of the amount of organic compounds present in the soils. Field screening for headspace was conducted according to the protocols outlined in the *NJDEP Field Sampling Procedures Manual*, May 1992.

3. If required by the site-specific sampling protocol, a portion of the soil sample was taken directly from the split spoon and placed in the sample bottle for VOC analysis to minimize volatilization of the sample. VOC samples were collected from discrete 6-in. intervals prior to organic vapor scanning of the soil samples.

4. Samples submitted for laboratory analysis were collected from intervals where high organic vapor monitor (OVM) readings were measured, visible staining was observed, or as specified in Section 4 of the CDAP.

5. The remaining sample was then homogenized in a stainless-steel bowl after a lithologic description of the soil sample and other pertinent drilling information was recorded according to the procedures outlined in the *NJDEP Field Sampling Procedures Manual*, May 1992.

Table 3.6-1
Fort Monmouth - Main Post and Charles Wood
Soil Sampling Analytical Parameters

SITE SAMPLE LOCATION	TCL VOC	TCL SVOC	TCL PEST/ PCB	TAL METALS	TPH	CYANIDE
Main Post						
M-15		X	X	X		
M-16	X	X	X			
M-18	X	X *	X	X	X	
AOC-3	X	X	X	X		
Background	X	X	X	X		X
Charles Wood						
CW-1	X	X	X	X		
CW-2	X	X	X	X		
CW-4	X	X	X	X		
CW-5	X	X	X			
CW-6	X	X	X	X**		
CW-9	X	X	X	X		
AOC-7	X	X	X	X		
Background	X	X	X	X		X

Notes:
* = Only sampled SVOCs at SB-06.
** = Only sampled at SS-01.
SVOC - Semi-Volatile Organic Compound
PEST - Pesticides
PCB - Polychlorinated biphenyls
TAL - Target Analyte List
TCL - Target Compound List
TPH - Total Petroleum Hydrocarbons
VOC - Volatile Organic Compound
See Table 5.1-1 for analytical methods.

6. The soil was then placed in the appropriate sample containers.

7. Field QA/QC samples were collected at a frequency of 1 set per 10 samples as specified in the CDAP.

A total of 16 trip blanks, 3 duplicates, and 3 equipment blanks were collected during the soil sampling program. Extra soil for laboratory MS/MSD analysis was also obtained as part of the QA/QC program. One split sample was collected and sent to the USACE New England Division Environmental Laboratory for analysis. Specific sampling protocols were in accordance with the procedures outlined in the CDAP.

After sampling was completed, the shallow borings were allowed to fill by the natural collapse of surrounding soil, and then further backfilled with a cement/bentonite mixture to ground surface. Split spoons and stainless-steel bowls were decontaminated prior to each use according to the procedures specified in the CDAP. Field blanks consisted of chromatography-grade distilled water rinsed over the inside of a decontaminated split spoon and bowl. Field blanks were collected once every 10 soil samples collected per analysis to verify the effectiveness of the decontamination process. All nonsampling, downhole drilling equipment was decontaminated between boring locations at each site, as described in the CDAP. Filled sample bottles were handled in the same manner as sediment sample bottles (Subsection 3.2).

3.7 GROUNDWATER MONITOR WELL INSTALLATION

A total of 45 shallow groundwater monitor wells were installed at both the Main Post and Charles Wood areas between 13 December 1994 and 23 January 1995 in accordance with the procedures and materials specified in the CDAP (December 1994). A total of 29 monitor wells were installed at the Main Post location and 16 monitor wells were installed at Charles Wood (these numbers include background wells). All monitor wells were drilled using an auger-type drilling rig equipped with 8-in. and 4.25-in. ID hollow-stem augers.

Continuous split-spoon samples were collected using ASTM Method 1586. A complete lithologic profile was recorded for each well by the WESTON site geologist from the split-spoon sample.

Monitor wells were installed within the shallow unconfined hydrogeologic water-bearing zone at depths ranging from 14 to 28 ft bgs. The shallow monitor wells were constructed with 4-in. diameter Schedule 40 polyvinyl chloride (PVC) casing and screen. Well screens were placed approximately 2 feet above the noted saturation depth to monitor seasonal fluctuations. However, where saturation was observed in boreholes immediately below ground surface (1 to 4 ft) screens were placed entirely in the saturation zone in order to get the proper sand pack and seal above the slotted screened interval. Screen lengths varied from 10 to 15 feet (screen slot size is 0.01 in.). The annular space around the well screen was filled with sand pack to approximately 1 to 2 feet above the top of the screen. A minimum 2.5- to 3-ft bentonite slurry was placed above the sand pack and a bentonite/cement grout mixture was used to seal the remaining annular space. All wells were secured with a locking steel protective casing. Summaries of well completion specifications for Main Post and Charles Wood are presented in Tables 3.7-1 and 3.7-2, respectively. Individual lithologic logs and well construction summaries are presented in Appendix A.

Well permit numbers and site identification numbers were stamped on the 6-in. diameter steel outer protective casing. The top of the PVC casing and ground surface was surveyed by a New Jersey-licensed surveyor and was referenced in feet above msl. Appendix B presents the survey data for site monitor and stilling wells. All well permit numbers and survey information are also included with each lithologic log and are summarized in Tables 3.7-1 and 3.7-2.

All drilling equipment was decontaminated in accordance with the decontamination procedures described in the CDAP prior to use at each well location. Drill cuttings were spread on the ground near the well location since no OVM readings above background were recorded. Holes, ruts, or divots developed during drilling were backfilled.

3.7.1 Well Development

Following installation, wells were developed according to the procedures described in the CDAP. The development procedures consisted of manually surging with a PVC surge block for 15 to 30 minutes. After surging, the wells were purged using a PVC bailer to remove any fine particles

Table 3.7-1
Fort Monmouth - Main Post
Well Completion Summary

Site and Location ID	Well Permit No.	Completion Date	Surveyed GS Elev. (Ft. MSL)	Surveyed PVC Elev. (Ft. MSL)	Total Depth (Ft. BGS)	Total Depth (Ft. TOIC)	Screened Interval (Ft. BGS)	Top of Sand Pack (Ft. BGS)	Top of Seal (Ft. BGS)
SITE M-2									
MW-01	2932584	14-Dec-94	19.44	21.04	22.75	24.35	7.00-22.29	5.75	3.75
MW-02	2932585	13-Dec-94	13.36	15.5	17.46	19.6	7.46-17.00	5.46	3.46
MW-03	2932586	13-Dec-94	10.98	12.63	15.6	17.25	5.60-15.14	4.6	2.6
SITE M-3									
MW-04	2932568	5-Jan-95	17.34	19.02	23.72	25.40	8.72-23.26	6.72	3.72
MW-05	2932569	9-Jan-95	11.28	13.30	16.43	18.45	6.43-15.97	4.43	2.43
MW-06	2932570	11-Jan-95	10.25	12.42	15.33	17.50	5.33-14.87	3.33	1.33
SITE M-4									
MW-07	2932571	14-Dec-94	14.83	16.75	16.01	17.93	6.01-15.55	4.01	1.51
MW-08	2932572	13-Dec-94	9.02	10.68	18.64	20.30	3.64-18.18	1.64	0.20
MW-09	2932573	13-Dec-94	7.77	9.69	22.69	24.61	7.69-22.23	5.69	3.19
SITE M-5									
MW-10	2932574	14-Dec-94	5.13	6.91	15.00	16.78	5.00-14.54	3.00	0.80
MW-11	2932575	15-Dec-94	9.77	11.70	15.00	16.93	5.00-14.54	3.00	0.80
SITE M-8									
MW-12	2932560	20-Dec-94	13.47	15.20	15.00	16.73	5.00-14.54	3.00	0.50
MW-13	2932560	17-Jan-95	6.02	7.80	15.00	16.78	5.00-14.54	3.50	1.00
MW-14	2932562	16-Jan-95	12.88	14.91	15.00	17.03	5.00-14.54	3.00	0.50
MW-15	2932563	17-Jan-95	5.01	7.01	15.00	17.00	5.00-14.54	3.50	1.00
SITE M-12									
MW-16	2932576	4-Jan-95	6.33	8.35	14.50	16.52	4.50-14.01	3.00	0.50
MW-17	2932577	11-Jan-95	5.90	7.87	14.50	16.47	4.50-14.04	3.00	0.50
MW-18	2932578	11-Jan-95	4.78	6.62	14.50	16.34	4.50-14.04	3.00	0.50
SITE M-14									
MW-19	2932579	4-Jan-95	7.98	9.68	15.00	16.70	5.00-14.54	3.50	0.50
MW-20	2932580	4-Jan-95	7.43	9.29	14.50	16.36	4.50-14.04	3.00	1.00
MW-21	2932581	4-Jan-95	7.50	9.57	16.00	18.07	6.00-15.54	4.00	1.00
SITE M-16									
MW-22	2932582	15-Dec-94	5.5	7.25	14.50	16.25	4.50-14.04	3.00	1.00
SITE M-18									
MW-24	2932565	12-Jan-95	6.78	8.16	15.00	16.38	5.00-14.54	3.50	1.00
MW-25	2932566	13-Jan-95	6.35	8.28	15.00	16.93	5.00-14.54	3.00	0.50
BACKGROUND									
MW1B	2932587	9-Jan-95	22.48	24.59	14.00	16.11	4.00-13.54	3.00	0.50
MW2B	2932588	6-Jan-95	19.44	20.23	20.00	20.79	19.54-20.00	8.00	5.00
MW3B	2932589	9-Jan-95	19.2	21.09	26.00	27.89	16.00-25.54	14.00	11.00
MW4B	2932567	9-Jan-95	9.78	12.08	15.00	17.30	5.00-14.54	3.00	1.00
MW5B	2932583	11-Jan-95	13.4	15.4	14.50	16.50	4.50-14.04	3.00	1.00

Notes:

All wells were completed as 4 inch PVC single cased wells with 10-slot screen (0.010 -inches) and have a 6-inch diameter outer steel protective casing.

GS - Ground surface
TOIC - Top of Inner Casing
Elev. - Elevation
MSL - Mean Sea Level
Ft - Feet
BGS - Below Ground Surface

j\ftmon\fortmonm\FTWELSUM.XLSFORTM

Table 3.7-2
Fort Monmouth - Charles Wood
Well Completion Summary

Site and Location ID	Well Permit No.	Completion Date	Surveyed GS Elev. (Ft. MSL)	Surveyed PVC Elev. (Ft. MSL)	Total Depth (Ft. BGS)	Total Depth (Ft. TOIC)	Screened Interval (Ft. BGS)	Top of Sand Pack (Ft. BGS)	Top of Seal (Ft. BGS)
SITE CW-1									
MW-26	2932591	19-Dec-94	60.54	62.46	15.00	17.01	5.00-14.54	4.00	2.00
MW-27	2932592	19-Dec-94	60.81	62.56	15.00	16.75	5.00-14.54	4.00	2.00
MW-28	2932593	19-Dec-94	60.73	62.89	15.00	17.16	5.00-14.54	5.00	0.50
MW-29	2932590	19-Dec-94	60.41	62.44	15.00	17.03	5.00-14.54	3.00	0.50
SITE CW-2									
MW-30	2932594	16-Dec-94	49.47	51.71	16.00	18.24	6.00-15.54	4.00	2.00
MW-31	2932595	16-Dec-94	49.67	51.58	15.00	16.91	5.00-14.54	3.00	1.00
MW-32	2932596	16-Dec-94	49.47	51.38	15.00	16.91	5.00-14.54	3.00	0.80
MW-33	2932597	15-Dec-94	49.18	51.09	15.00	16.91	5.00-14.54	3.00	0.50
SITE CW-6									
MW-34	2932599	3-Jan-95	31.97	33.76	14.50	16.29	4.50-14.04	3.00	1.00
SITE CW-9									
MW-35	2932600	4-Jan-95	29.27	31.43	14.50	16.66	4.50-14.01	3.00	0.50
MW-36	2932601	4-Jan-95	31.22	33.21	14.00	15.99	4.00-13.54	3.00	1.00
BACKGROUND									
MW-6B	2932602	10-Jan-95	35.19	37.37	14.00	16.18	4.00-13.54	3.00	1.00
MW-7B	2932604	10-Jan-95	64.27	66.31	15.00	17.04	5.00-14.54	3.00	1.00
MW-8B	2932598	10-Jan-95	47.04	48.9	15.00	16.86	5.00-14.54	3.00	0.50
MW-9B	2932603	23-Jan-95	43.13	45.31	15.00	17.18	5.00-14.54	3.00	1.00
MW-10B	2932605	10-Jan-95	51.36	53.14	14.50	16.28	4.50-14.04	3.00	0.50

All wells were completed as 4-inch PVC single cased wells with 10-slot screen (0.010-inches) and have a 6-inch diameter outer steel protective casing.

Notes:

GS - Ground surface
Elev. - Elevation
Ft - Feet
TOIC - Top of Inner Casing
MSL - Mean Sea Level
BGS - Below Ground Surface

that may have accumulated in the well column and were then purged by bailing or pumping with a submersible pump to remove the fine particles from the sand pack. Monitor wells MW-1, MW-24, MW-25, MW-30 through MW-33, MW-03B, MW-05B, and MW-09B were developed by bailing; all other wells had sufficient yield to sustain pumping. Throughout the development process, the temperature, pH, and specific conductance of the purge water were measured and recorded in the field at a minimum of once per well volume of water removed. The well development sheets are included in Appendix C. Well development continued until moderately low turbidity was visually observed or where well turbidity was believed to be a result of natural conditions after a maximum of 2 hours of purging. However, well development continued after 2 hours of purging at several locations where high turbidity was believed to be a result of inadequate well yields. Consequently, low volumes of water were removed. After a sufficient volume of water was removed and ample time was applied toward well development, development ceased (see Appendix C).

All development equipment was decontaminated prior to use in each well in accordance with the procedures described in the CDAP. Since no OVM readings above background were recorded during development, the purge water was discharged to the ground, as directed in the CDAP.

3.7.2 Well Abandonment

All existing monitor wells and piezometers at Landfill 8 were abandoned in accordance with the requirements specified in the CDAP. Several site reconnaissance efforts were conducted in an effort to locate all of the previously installed monitor wells and piezometers, in or around Landfill 8. A total of 11 wells, six 4-in. monitor wells and five 2-in. piezometers, were identified for abandonment (Figure 4.2-12). Access to the locations was made with the use of an all terrain vehicle (ATV) rig. The wells were abandoned by a New Jersey licensed driller in accordance with the NJDEP procedures for wells screened across an aquifer (unconfined). Abandonment procedures consisted of:

1. Recording field observations of well construction details, if available.
2. Pulling the outer protective casing out of the ground.

3. Cutting the inner PVC casing stick-up off to ground surface.

4. Tremie-grouting the well from the bottom of the PVC screen to the ground surface with a cement/bentonite mixture.

3.8 GROUNDWATER SAMPLING

Two groundwater sampling rounds were conducted at the Main Post and Charles Wood areas between 13 through 22 February 1995 and 7 through 15 March 1995. A complete set of depth to water readings at all well locations on the Main Post and Charles Wood areas were collected prior to start of the groundwater sampling round. The full set of depth to water readings and elevations, which are provided in the discussion of site groundwater flow, are presented in Appendix C, Tables C-1 and C-2. The groundwater sampling was conducted in accordance with the *NJDEP Field Sampling Procedures Manual* (May 1992), as indicated in the CDAP, to ensure that water samples were representative of subsurface conditions. Groundwater samples were collected from the 45 newly installed monitor wells after a minimum of 2 to 3 weeks following well development. Site-specific groundwater samples were analyzed for the constituents presented in Table 3.8-1. Two existing monitor wells were also sampled; one at site M-18 on the Main Post, and one at site CW-6 on Charles Wood.

Prior to sampling, all monitor wells were purged with a variable rate stainless-steel submersible pump at rates between 0.5 and 1.0 gpm. Well yield data collected during well development were used to estimate the purge rate for each well. Prior to well purging, pH, temperature, and specific conductance measurements were recorded to compare to subsequent measurements taken during purging as each well volume was evacuated. Purging was continued until parameters stabilized and a minimum of three well volumes were evacuated. Monitor wells that purged dry were allowed to recover and purged again to remove a minimum of 1.5 well volumes before sampling. Groundwater samples from all wells were collected from the monitor wells using dedicated, disposable Teflon bailers. Groundwater was transferred from the bailers directly into the appropriate sample containers. Sample portions designated for soluble metals analyses were field-filtered. Field QA/QC samples were collected at a frequency of 1 set per 10 samples. A total of seven trip blanks, three duplicates, and seven equipment blanks were collected during

Table 3.8-1
Fort Monmouth - Main Post and Charles Wood
Sampling Parameters Table for
February & March 1995 Sampling Rounds

SITE SAMPLE LOCATION	TCL VOC (8240)	TCL SVOC	TCL PEST/ PCB	TAL Metals Total	TAL Metals Dissolved	TPH	Cyanide	Sulfate	Ammonia
Main Post									
M-2	X	X	X	X	X		X		
M-3	X	X	X	X	X		X		
M-4	X	X	X	X	X		X		
M-5	X	X	X	X	X		X	X	
M-8	X	X	X	X	X		X	X	X
M-12	X	X	X	X	X		X		
M-14	X	X	X	X	X		X		
M-16	X	X	X						
M-18	X	X	X	X	X	X			
Background	X	X	X	X	X		X		
Charles Wood									
CW-1	X	X	X	X	X				
CW-2	X	X	X	X	X				
CW-6	X	X	X						
CW-9	X	X	X	X	X				
Background	X	X	X	X	X		X		

Notes:

PCB - Polychlorinated biphenyls
PEST - Pesticides
SVOC - Semi-Volatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
TPH - Total Petroleum Hydrocarbons
VOC - Volatile Organic Compound
See table 5.1-1 for analytical methods.

each sampling round. Extra groundwater for laboratory MS/MSD analysis was also obtained as part of the QA/QC program. One split sample per sampling round was collected and sent to the USACE New England Division Environmental Laboratory for analysis. Specific sampling protocols were in accordance with the procedures outlined in the CDAP. Filled sample bottles were handled in the same manner as sediment sample bottles (Subsection 3.2). Appendix D presents the analytical results of the field sampling activities at both the Main Post and Charles Wood areas.

3.9 TIDAL MONITORING

Two 72-hr tidal monitoring tests were conducted in three areas at the Main Post: Landfill 2, Landfill 8, and Landfills 12 and 14. The tests were conducted the week of 30 January through 3 February 1995, prior to the February 1995 groundwater sampling round, and the week of 20 through 24 March following the March 1995 groundwater sampling round in an effort to evaluate the effect of tidal fluctuations on water levels in the monitor wells. A total of four stilling wells were installed; one at Landfill 2, one at Landfill 8, and two at the Landfill 12 and 14 areas.

The stilling wells at Fort Monmouth are temporarily installed measuring points that are used to monitor water-level fluctuations in surface-water bodies (creeks). The stilling wells were installed using a 2-in. diameter, 5-ft long stainless-steel slotted screen with a conical drive shoe. The drive shoe was used to insert the screen approximately 2 to 3 feet into the surface-water sediments. Once the steel screen was secured, a 2-in. diameter, 5-ft long PVC slotted screen was added to the steel screen to ensure that the top of the stilling well was above creek water levels during high tides. The top of the PVC casing was surveyed by a New Jersey-licensed surveyor. The data collected are presented in Appendix B, along with the stream bed elevations. The data were collected from the stilling wells using pressure transducers with an electronic data logger (In-Situ Model SE-1000C) and were then compared to the subsequent site monitor wells to gauge the influence of the tides on water levels in the monitor wells. Water-level fluctuations in the monitor wells were collected using pressure transducers (In-Situ Model SE 1000C) and well sentinels (Model LTM 3000). Appendix E presents the results (hydrographs) and conductivity

and salinity measurements collected during the individual tidal monitoring tests. The stilling wells were located in accordance with the CDAP.

SECTION 4
RESULTS OF INVESTIGATION

SECTION 4

RESULTS OF INVESTIGATION

4.1 COMPARISON WITH NEW JERSEY STANDARDS AND BACKGROUND

The results of the sampling effort were evaluated by comparing them with the results of background samples and with NJDEP regulatory standards. In general, for each compound of each environmental sample, the analytical results were compared against the NJDEP regulatory criteria. If the analytical result exceeded the regulatory criteria, then it was compared against the maximum background concentration. Those compounds that exceeded the regulatory standard and established background at a particular site were classified as a compound of concern.

The concentration of each compound was first compared with NJDEP standards. The New Jersey regulatory standards used for this evaluation are summarized in the following paragraphs:

- Groundwater — NJAC 7:9-6, *Groundwater Quality Standards*, establishes groundwater criteria for different classes of groundwater. Class II-A, which is defined as all groundwater that is not classified as one of the other special classes, is the class for groundwater at Fort Monmouth. Table 1 of this regulation presents the regulatory limit as the higher of the groundwater quality criteria and the practical quantitation levels (PQL). The PQL is the lowest concentration that can be reliably measured in a laboratory analysis. These values are presented in Table 4.1-1.

- Soil — NJDEP currently uses the Soil Cleanup Criteria (SCC) that have been published as an interim regulation and in the NJDEP publication, *Site Remediation News*. Criteria have been developed for future residential and nonresidential uses, and potential impacts to groundwater. The residential direct contact soil criteria were used to evaluate soil analytical results. Although soil criteria exist that are based on potential impacts to groundwater, it is more appropriate to use actual groundwater monitoring results, which exist for most of the sites in this investigation. The criteria for residential direct contact and impact to groundwater are presented in Table 4.1-2. They were published in March 1994, except for lead, which was revised in the winter 1995 *Site Remediation News*.

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
1,1,1-Trichloroethane	30	1	30
1,1,2,2-Tetrachloroethane	2	1	2
1,1,2-Trichloroethane	3	2	3
1,1-Dichloroethane	70	NA	70
1,1-Dichloroethene	-	-	-
1,2,4-Trichlorobenzene	9	1	9
1,2-Dichlorobenzene	600	5	600
1,2-Dichloroethane	0.3	2	2
1,2-Dichloroethene (total)	-	-	-
1,2-Dichloropropane	0.5	1	1
1,3-Dichlorobenzene	600	5	600
1,4-Dichlorobenzene	75	5	75
2,2'-oxybis(1-Chloropropane)	-	-	-
2,4,5-Trichlorophenol	700	10	700
2,4,6-Trichlorophenol	-	-	-
2,4-Dichlorophenol	20	10	20
2,4-Dimethylphenol	100	20	100
2,4-Dinitrophenol	10	40	40
2,4-Dinitrotoluene	0.05	10	10
2,6-Dinitrotoluene	NA	10	10
2-Butanone	-	-	-
2-Chloronaphthalene	-	-	-
2-Chlorophenol	40	20	40
2-Hexanone	-	-	-
2-Methylnaphthalene	-	-	-
2-Methylphenol	-	-	-
2-Nitroaniline	-	-	-
2-Nitrophenol	-	-	-
3,3'-Dichlorobenzidine	0.08	60	60
3-Nitroaniline	-	-	-
4,4'-DDD	0.1	0.04	0.1
4,4'-DDE	0.1	0.04	0.1
4,4'-DDT	0.1	0.06	0.1
4,6-Dinitro-2-methylphenol	-	-	-
4-Bromophenyl-phenylether	-	-	-
4-Chloro-3-methylphenol	NA	20	20
4-Chloroaniline	-	-	-
4-Chlorophenyl-phenylether	-	-	-
4-Methyl-2-pentanone	400	NA	400
4-Methylphenol	-	-	-
4-Nitroaniline	-	-	-
4-Nitrophenol	-	-	-
Acenaphthene	400	10	400
Acenapthylene	NA	10	10
Acetone	700	NA	700
Aldrin	0.002	0.04	0.04
alpha-BHC	0.006	0.02	0.02
alpha-Chlordane	-	-	-

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
Aluminum	200	200	200
Anthracene	2000	10	2000
Antimony	2	20	20
Aroclor-1016	0.43	2	2
Aroclor-1221	0.43	2	2
Aroclor-1232	0.43	2	2
Aroclor-1242	0.43	2	2
Aroclor-1248	0.43	2	2
Aroclor-1254	0.43	2	2
Aroclor-1260	0.43	2	2
Arsenic	0.02	8	8
Barium	2000	200	2000
Benzene	0.2	1	1
Benzo(a)anthracene	0.03	10	10
Benzo(a)pyrene	0.003	20	20
Benzo(b)fluoranthene	0.03	2	2
Benzo(g,h,i)perylene	NA	20	20
Benzo(k)fluoranthene	0.03	2	2
Beryllium	0.008	20	20
beta-BHC	0.2	0.04	0.2
bis(2-Chloroethoxy) methane	-	-	-
bis(2-Chloroethyl) ether	0.03	10	10
bis(2-Ethylhexyl)phthalate	3	30	30
Bromodichloromethane	0.3	1	1
Bromoform	4	0.8	4
Bromomethane	-	-	-
Butylbenzylphthalate	100	20	100
Cadmium	4	2	4
Calcium	-	-	-
Carbazole	-	-	-
Carbon Disulfide	-	-	-
Carbon Tetrachloride	0.4	2	2
Chlordane	0.01	0.5	0.5
Chlorobenzene	4	2	4
Chloroethane	-	-	-
Chloroform	6	1	6
Chloromethane	-	-	-
Chromium (total)	100	10	100
Chrysene	0.03	20	20
cis-1,3-Dichloropropene	0.2	NA	0.2
Cobalt	-	-	-
Copper	1000	1000	1000
Cyanide	200	40	200
delta-BHC	-	-	-
Di-n-butylphthalate	900	20	900
Di-n-octyl phthalate	100	NA	100
Dibenzo(a,h)anthracene	0.003	20	20
Dibenzofuran	-	-	-

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
Dibromochloromethane	10	1	10
Dieldrin	0.002	0.03	0.03
Diethylphthalate	5000	10	5000
Dimethylphthalate	7000	10	7000
Endosulfan I	0.4	0.02	0.4
Endosulfan II	0.4	0.04	0.4
Endosulfan sulfate	0.4	0.08	0.4
Endrin	2	0.04	2
Endrin aldehyde	-	-	-
Endrin ketone	-	-	-
Ethylbenzene	700	5	700
Fluoranthene	300	10	300
Fluorene	300	10	300
gamma-BHC (Lindane)	0.2	0.2	0.2
gamma-Chlordane	0.01	0.5	0.5
Heptachlor	0.008	0.4	0.4
Heptachlor epoxide	0.004	0.2	0.2
Hexachlorobenzene	0.02	10	10
Hexachlorobutadiene	1	1	1
Hexachlorocyclopentadiene	50	10	50
Hexachloroethane	0.7	10	10
Indeno(1,2,3-cd)pyrene	0.03	20	20
Iron	300	100	300
Isophorone	100	10	100
Lead (total)	5	10	10
Magnesium	-	-	-
Manganese	50	6	50
Mercury	2	0.5	2
Methoxychlor	40	10	40
Methylene Chloride	2	2	2
N-Nitrosodi-n-propylamine	0.005	20	20
N-Nitrosodiphenylamine (1)	7	20	20
Naphthalene	-	-	-
Nickel (soluble salts)	100	10	100
Nitrobenzene	3	10	10
Pentachlorophenol	0.3	1	1
Phenanthrene	NA	10	10
Phenol	4000	10	4000
Potassium	-	-	-
Pyrene	200	20	200
Selenium (total)	50	10	50
Silver	20	2	20
Sodium	50000	400	50000
Styrene	100	5	100
Tetrachloroethene	0.4	1	1
Thallium	0.5	10	10
Toluene	1000	5	1000
Toxaphene	0.03	3	3

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
trans-1,3-Dichloropropene	0.2	NA	0.2
Trichloroethene	1	1	1
Vanadium	-	-	-
Vinyl Chloride	0.08	5	5
Xylene (total)	40	2	40
Zinc	5000	30	5000

- = No level established

Table 4.1-2

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
1,1,1-Trichloroethane	210	50
1,1,2,2-Tetrachloroethane	34	1
1,1,2-Trichloroethane	22	1
1,1-Dichloroethane	570	10(i)
1,1-Dichloroethene	8	10
1,2,4-Trichlorobenzene	68	100
1,2-Dichlorobenzene	5100	50
1,2-Dichloroethane	6	1
1,2-Dichloroethene (trans)	1000(d)	50
1,2-Dichloroethene (cis)	79	1(i)
1,2-Dichloropropane	10	(r)
1,3-Dichlorobenzene	5100	100
1,4-Dichlorobenzene	570	100
2,2'-oxybis(1-Chloropropane)	-	-
2,4,5-Trichlorophenol	5600	50
2,4,6-Trichlorophenol	62	10(i)
2,4-Dichlorophenol	170	10
2,4-Dimethylphenol	1100	10
2,4-Dinitrophenol	110	10
2,4-Dinitrotoluene	1(l)	10(l)
2,6-Dinitrotoluene	1(l)	10(l)
2-Butanone (MEK)	1000 (d)	50
2-Chloronaphthalene	-	-
2-Chlorophenol	280	10 (j)
2-Hexanone	-	-
2-Methylnaphthalene	-	-
2-Methylphenol	2800	(r)
2-Nitroaniline	-	-
2-Nitrophenol	-	-
3,3'-Dichlorobenzidine	2	100
3-Nitroaniline	-	-
4,4'-DDD	3	50(i)
4,4'-DDE	2	50(i)
4,4'-DDT	2	500(i)
4,6-Dinitro-2-methylphenol	-	-
4-Bromophenyl-phenylether	-	-
4-Chloro-3-methylphenol	10000(c)	100
4-Chloroaniline	230	(r)
4-Chlorophenyl-phenylether	-	-
4-Methyl-2-pentanone	1000(d)	50
4-Methylphenol	2800	(r)
4-Nitroaniline	-	-
4-Nitrophenol	-	-
Acenaphthene	3400	100
Acenaphthylene	-	-
Acetone	1000(d)	100(i)

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Aldrin	0.040	50
alpha-BHC	-	-
alpha-Chlordane	-	-
Aluminum	-	-
Anthracene	10000(c)	100(i)
Antimony	14	(h)
Aroclor-1016	0.49	50(i)
Aroclor-1221	0.49	50(i)
Aroclor-1232	0.49	50(i)
Aroclor-1242	0.49	50(i)
Aroclor-1248	0.49	50(i)
Aroclor-1254	0.49	50(i)
Aroclor-1260	0.49	50(i)
Arsenic	20(e)	(h)
Barium	700	(h)
Benzene	3	1
Benzo(a)anthracene	0.9	500
Benzo(a)pyrene	0.66(f)	100
Benzo(b)fluoranthene	0.9	50(i)
Benzo(g,h,i)perylene	-	-
Benzo(k)fluoranthene	0.9	500
Beryllium	1(f)	(h)
beta-BHC	-	-
bis(2-Chloroethoxy) methane	-	-
bis(2-Chloroethyl) ether	0.66(f)	10(j)
bis(2-Ethylhexyl)phthalate	49	100
Bromodichloromethane	11(g)	1
Bromoform	86	1
Bromomethane	79	1
Butylbenzylphthalate	1100	100
Cadmium	1	(h)
Calcium	-	-
Carbazole	-	-
Carbon Disulfide	-	-
Carbon Tetrachloride	2(k)	1
Chlorobenzene	37	1
Chloroethane	-	-
Chloroform	19(k)	1
Chloromethane	520	10
Chromium	-	-
Chrysene	9	500
cis-1,3-Dichloropropene	4	1
Cobalt	-	-
Copper	600(m)	(h)
Cyanide	1100	(h)
delta-BHC	-	-

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Di-n-butylphthalate	5700	100
Di-n-octyl phthalate	1100	100
Dibenzo(a,h)anthracene	0.66(f)	100(j)
Dibenzofuran	-	-
Dibromochloromethane	110	1
Dieldrin	0.042	50
Diethylphthalate	10000(c)	50
Dimethylphthalate	10000(c)	50
Endosulfan	340(g)	50
Endosulfan sulfate	-	-
Endrin	17	50
Endrin aldehyde	-	-
Endrin ketone	-	-
Ethylbenzene	1000(d)	100
Fluoranthene	2300	100(i)
Fluorene	2300	100
gamma-BHC (Lindane)	0.52	50(j)
gamma-Chlordane	-	-
Heptachlor	0.15	50(j)
Heptachlor epoxide	-	-
Hexachlorobenzene	0.66(f)	100(i)
Hexachlorobutadiene	1(g)	100(g)
Hexachlorocyclopentadiene	400	100
Hexachloroethane	6	100
Indeno(1,2,3-cd)pyrene	0.9	500
Iron	-	-
Isophorone	1100	50(j)
Lead	400 [1]	(h)
Magnesium	-	-
Manganese	-	-
Mercury	14	(h)
Methoxychlor	280	50(j)
Methylene Chloride	49	1(j)
N-Nitroso-di-n-propylamine	0.66(f)	10(j)
N-Nitrosodiphenylamine (1)	140	100
Naphthalene	230	100
Nickel	250	(h)
Nitrobenzene	28	10(i)
Pentachlorophenol	6	100
Phenanthrene	-	-
Phenol	10000(c)	50
Potassium	-	-
Pyrene	1700	100(j)
Selenium	63	(h)
Silver	110	(h)
Sodium	-	-

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Trichloroethene	23	1
Vanadium	370	(h)
Vinyl Chloride	2	10(i)
Xylene (total)	410	10
Zinc	1500(m)	(h)

(c) Health based criterion exceeds the 10000 mg/kg maximum for total organic contaminants.
(d) Health based criterion exceeds the 1000 mg/kg maximum for total volatile organic contaminants.
(e) Cleanup standard proposal was based on natural background.
(f) Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.
(g) Criterion has been recalculated based on new toxicological data.
(h) The impact to ground water values for inorganics will be developed based upon site specific chemical and physical parameters.
(i) Original criterion was incorrectly calculated and has been recalculated.
(j) Typographical error.
(k) Criterion based on inhalation exposure pathway which yielded a more stringent criterion than the incidental ingestion exposure pathway.
(l) New criterion derived using methodology in the basis and background document.
(m) Criterion based on ecological (phytotoxicity) effects.
(p) criterion based on the goal that children should be exposed to the minimal amount of lead that is practicable and is reflective of natural background as altered by diffuse anthropogenic pollution. Criterion corresponds to both a median value for urban land which has not been impacted by any local point source of lead and a 90th percentile value for similar suburban land.
- = No level established.
[1] = NJDEP criteria as referenced in Site Remediation News, Winter 1995.
NJDEP criteria for Total Volatile Organics and Total Organics is 1,000 mg/kg and 10,000 mg/kg, respectively.

- Surface water — NJAC 7:9-1, *Surface Water Quality Standards,* contains surface-water quality criteria for chemicals detected at the Main Post and Charles Wood. Surface water is classified based on the designated uses of the surface water, the biota present, and the type of aquatic system (e.g., freshwater or saltwater). Generally, separate criteria were established for freshwater and saltwater. Although the classifications of some surface waters are defined in the regulation, the surface water at Fort Monmouth has not been classified. Based on observations by field personnel during this investigation, the on-site surface water has been designated as either freshwater or saltwater. The sample-specific designation is discussed in Subsections 4.2 and 4.3. Surface-water criteria are presented in Table 4.1-3.

- Sediment — The NJDEP *Guidance for Sediment Quality Evaluations* (1991), which references National Oceanic and Atmospheric Administration (NOAA) biological effects screening criteria, and ERL guideline values from Long et al. (1995), were used to evaluate sediment concentrations at the Main Post and Charles Wood. The use of these criteria is discussed in Subsection 4.1.2. The sediment quality criteria are presented in Table 4.1-4.

- PCB transformers — The proposed NJDEP rule NJAC 7:26D, *Cleanup Standards for Contaminated Sites,* was used for PCB cleanup criteria in soil and interior surfaces. These criteria are presented in Table 4.1-5.

Two groundwater sampling rounds were conducted at the Main Post and Charles Wood areas. As specified in the NJDEP regulation *Technical Requirements for Site Remediation* (NJAC 7:26E), the results of the two groundwater sampling rounds were averaged since the samples were collected within a 30-day period. The averaged concentrations were compared with the NJDEP criteria and then with the maximum background concentrations. If the concentration in only one of the samples was above the detection limit, then that result was averaged with half of the quantitation limit.

Analytical results that were reported as a "J," i.e., below the quantitation limit but above the method detection limit, were still compared against NJDEP criteria to determine if the criteria were exceeded. The laboratory quantitation limit is the lowest concentration of an analyte determined by a given method in a given matrix that the laboratory feels can be reported with acceptable quantitative error. The method detection limit is the lowest concentration that can be seen for a given analytical method and sample matrix with 99% confidence that the analyte is present. Laboratory quantitation limits are typically about three times the value of the method

Table 4.1-3
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
1,1,1-Trichloroethane	127(h)	-
1,1,2,2-Tetrachloroethane	1.72(hcc)	-
1,1,2-Trichloroethane	13.5(h)	-
1,1-Dichloroethane	-	-
1,1-Dichloroethene	4.81(h)	-
1,2,4-Trichlorobenzene	30.6(h)	113(h)
1,2-Dichlorobenzene	2,520(h)	16,500(h)
1,2-Dichloroethane	0.291(hc)	99(hc)
1,2-Dichloroethene (total)	-	-
1,2-Dichloropropane	-	-
1,3-Dichlorobenzene	2,620(h)	22,200(h)
1,4-Dichlorobenzene	343(h)	3,159(h)
2,2'-oxybis(1-Chloropropane)	-	-
2,4,5-Trichlorophenol	2,580(h)	9,790(h)
2,4,6-Trichlorophenol	2.14(hc)	6.53(hc)
2,4-Dichlorophenol	92.7(h)	794(h)
2,4-Dimethylphenol	-	-
2,4-Dinitrophenol	69.7(h)	14,000(h)
2,4-Dinitrotoluene	0.11(hc)	9.1(hc)
2,6-Dinitrotoluene	-	-
2-Butanone	-	-
2-Chloronaphthalene	-	-
2-Chlorophenol	122(h)	402(h)
2-Hexanone	-	-
2-Methylnaphthalene	-	-
2-Methylphenol	-	-
2-Nitroaniline	-	-
2-Nitrophenol	-	-
3,3'-Dichlorobenzidine	0.0386(hc)	0.0767(hc)
3-Nitroaniline	-	-
4,4'-DDD	0.000832(hc)	0.000837(hc)
4,4'-DDE	0.000588(hc)	0.000591(hc)
4,4'-DDT	1.1(a); 0.0010(c); 0.000588(hc)	0.13(a); 0.0010(c); 0.000591(hc)
4,6-Dinitro-2-methylphenol	-	-
4-Bromophenyl-phenylether	-	-
4-Chloro-3-methylphenol	-	-
4-Chloroaniline	-	-
4-Chlorophenyl-phenylether	-	-
4-Methyl-2-pentanone	-	-
4-Methylphenol	-	-
4-Nitroaniline	-	-
4-Nitrophenol	-	-
Acenaphthene	-	-
Acenaphthylene	-	*Reserved*

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Acetone	-	-
Aldrin	3.0(a); 0.000135(hc)	1.3(a) 0.000144(hc)
alpha-BHC	0.00391(hc)	0.0131(hc)
alpha-Chlordane	2.4(a); 0.0043(c); 0.000277(hc)	0.09(a); 0.0040(c); 0.000283(hc)
Aluminum	-	*Reserved*
Anthracene	9,570(h)	108,000(h)
Antimony	12.2(h)	4,300(h)
Aroclor-1016	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1221	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1232	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1242	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1248	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1254	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1260	.014(c); .000244(hc)	.30(c); .000247(hc)
Arsenic	0.0170(hc)	0.136(hc)
Barium	2,000(h)	-
Benzene	0.150(hc)	71(hc)
Benzo(a)anthracene	0.0028(hc)	0.031(hc)
Benzo(a)pyrene	0.0028(hc)	0.031(hc)
Benzo(b)fluoranthene	0.0028(hc)	0.031(hc)
Benzo(g,h,i)perylene	-	*Reserved*
Benzo(k)fluoranthene	0.0028(hc)	0.031(hc)
Beryllium	-	*Reserved*
beta-BHC	0.137(hcc)	0.460(hcc)
bis(2-Chloroethoxy) methane	-	-
bis(2-Chloroethyl) ether	.0311(hc)	1.4(hc)
bis(2-Ethylhexyl)phthalate	1.76(hc)	5.92(hc)
Bromodichloromethane	.266(hc)	22(hc)
Bromoform	4.38(hc)	360(hc)
Bromomethane	48.4(h)	4,000(h)
Butylbenzylphthalate	239(h)	416(h)
Cadmium	10(h)	-
Calcium	-	-
Carbazole	-	-
Carbon Disulfide	-	-
Carbon Tetrachloride	0.363(hc)	6.31(hc)
Chlorobenzene	22.0(h)	21,000(h)
Chloroethane	-	-
Chloroform	5.67(hc)	470(hc)
Chloromethane	5.7(hc); 470(hc)	*Reserved*
Chromium	160(h)	3,230(h)
Chrysene	0.0028(hc)	0.031(hc)
cis-1,3-Dichloropropene	-	-
Cobalt	-	-

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Copper	-	*Reserved*
Cyanide	22(a); 5.2(c) 768(h)	1.0(a); 1.0(c); 220,000(h)
delta-BHC	-	-
Di-n-butylphthalate	3,530(h)	15,700(h)
Di-n-octyl phthalate	-	-
Dibenzo(a,h)anthracene	0.0028(hc)	0.031(hc)
Dibenzofuran	-	-
Dibromochloromethane	72.6(h)	-
Dieldrin	2.5(a) 0.0019(c); 0.000135(hc)	0.71(a); 0.0019(c); 0.000144(hc)
Diethylphthalate	21,200(h)	111,000(h)
Dimethylphthalate	313,000(h)	2,900,000(h)
Endosulfan I	-	-
Endosulfan II	-	-
Endosulfan sulfate	0.93(h)	2.0(h)
Endrin	0.18(a); 0.0023(c); 0.629(h)	0.037(a); 0.0023(c) 0.678(h)
Endrin aldehyde	0.76(h)	0.081(h)
Endrin ketone	-	-
Ethylbenzene	3,030(h)	27,900(h)
Fluoranthene	310(h)	393(h)
Fluorene	1,340(h)	
gamma-BHC (Lindane)	2.0(a); 0.080(c)	0.16(a)
gamma-Chlordane	-	-
Heptachlor	0.52(a); 0.0038(c); 0.000208(hc)	0.053(a); 0.0036(c); 0.000214(hc)
Heptachlor epoxide	0.52(a); 0.0038(c); 0.000103(hc)	0.053(a); 0.0036(c); 0.000106(hc)
Hexachlorobenzene	0.000748(hc)	0.000775(hc)
Hexachlorobutadiene	6.94(h)	
Hexachlorocyclopentadiene	245(h)	17,000(h)
Hexachloroethane	2.73(h)	12.4(h)
Indeno(1,2,3-cd)pyrene	0.0028(hc)	0.031(hc)
Iron	-	*Reserved*
Isophorone	552(h)	-
Lead	5(h)	-
Magnesium	-	-
Manganese	100(h)	-
Mercury	0.144(h)	0.146(h)
Methoxychlor	0.03(c); 40(h)	0.03(c)
Methylene Chloride	2.49(hc)	1,600(hc)
N-Nitroso-di-n-propylamine	-	-
N-Nitrosodiphenylamine (1)	-	-
Naphthalene	-	-
Nickel	516(h)	3,900(h)

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Nitrobenzene	16.0(h)	1,900(h)
Pentachlorophenol	e(1.005(pH)-4.830)(a); e(1.005(pH)-5.290)(c); 0.282(c)	13(a); 7.9(c); 8.2(hc)
Phenanthrene	-	*Reserved*
Phenol	20,900(h)	4,600,000(h)
Potassium	-	-
Pyrene	797(h)	8,970(h)
Selenium	10(h)	300(a); 71(c); 6,800(h)
Silver	164(h)	-
Sodium	-	-
Styrene	-	-
Tetrachloroethene	0.388(hc)	4.29(hc)
Thallium	1.70(h)	6.22(h)
Toluene	7,440(h)	200,000(h)
Toxaphene	0.73(a); 0.0002(c); 0.000730(hc)	0.21(a); 0.0002(c); 0.000747(hc)
trans-1,3-Dichloropropene	.193(hc)	1,700(h)
Trichloroethene	1.09(hc)	81(hc)
Vanadium	-	-
Vinyl Chloride	0.0830(hc)	525(hc)
Xylene (total)	-	-
Zinc	-	*Reserved*

NOTE: Except as noted, aquatic life criteria followed by an (a) represent acute aquatic life protection criteria as a one-hour average and aquatic life criteria followed by (C) represent chronic aquatic life protection criteria as a four-day average. No exceedance of aquatic life criteria shall be permitted at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c) 2. Criteria followed by an (h) are noncarcinogenic effect-based human health criteria as a 30-day average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2. Criteria followed by an (hc) are carcinogenic effect-based human health criteria as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one-million. Criteria followed by an (hcc) are for toxic substances considered to be possible human carcinogens as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one hundred thousand Criteria followed by and (OL) are organoleptic effect-based criteria and are maximum concentrations.

- = No level established

Table 4.1-4
Fort Monmouth - Main Post and Charles Wood
Sediment Guidance Values for Detected Contaminants

COMPOUND	NJDEP SEDIMENT GUIDANCE [a] (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[b] (mg/kg)
VOC's (mg/kg)		
Acetone	NLE	NLE
2-Butanone	NLE	NLE
1,2-Dichloroethene (total)	NLE	NLE
Vinyl Chloride	NLE	NLE
SVOCs (mg/kg)		
bis-(2-Ethylhexyl)phthalate	NLE	NLE
Dimethylphthalate	NLE	NLE
Di-n-butylphthalate	NLE	NLE
Di-n-octyl phthalate	NLE	NLE
2,2'-oxybis(1-Chloropropane)	NLE	NLE
PAHs (mg/kg)		
Benzo (a)anthracene	0.23	0.261
Benzo(a)pyrene	0.4	0.43
Benzo (b)fluoranthene	NLE	NLE
Chrysene	0.4	0.984
Fluoranthene	0.6	0.6
Phenanthrene *	0.225, 0.326	0.74
Pyrene	0.35	0.665
PESTICIDES/PCBs (mg/kg)		
4,4'-DDD	0.002	NLE
4,4'-DDE	0.002	0.0022
4,4'-DDT *	0.003, 0.00183	0.00158
Heptachlor epoxide	NLE	NLE
METALS TOTAL (mg/kg)		
Aluminum	NLE	NLE
Arsenic	33	8.2
Barium	NLE	NLE
Beryllium	NLE	NLE
Cadmium	5	1.2
Calcium	NLE	NLE
Chromium	80	81
Cobalt	NLE	NLE
Copper	70	34
Iron	NLE	NLE
Lead	35	46.7
Magnesium	NLE	NLE
Manganese	NLE	NLE
Mercury	0.15	0.15
Nickel	30	20.9
Potassium	NLE	NLE
Selenium	NLE	NLE
Silver	1	1
Sodium	NLE	NLE
Vanadium	NLE	NLE
Zinc	120	150

a NJDEP Sediment Guidance (1991), based on NOAA (1990) ER-L guidance. Values provided are for freshwater sediments. Criteria for DDE and DDD are not presented in NJDEP Sediment Quality Evaluations (1991).

b Long et. al (1995).

* - Standards developed using equilibrium partioning approach in accordance with NJDEP Guidance for Sediment Quality Evaluation (1991). Total organic carbon concentrations of 1% assumed based on organic carbon content detected in adjacent sample.

NLE - No Level Established

Table 4.1-5

Potentially Applicable PCB Cleanup Levels

New Jersey (Proposed 7:26D)

- Building interior:
  - Porous surface (from floor to 6 feet): chip sample < 0.055 µg/g
  - Porous surface (higher than 6 feet): chip sample < 0.11 mg/g
  - Nonporous surface (from floor to 6 feet): wipe sample < 0.27 mg/m^2 (2.7 mg/100 cm^2)
  - Nonporous surface (higher than 6 feet): wipe sample < 0.54 mg/m^2 (5.4 µg/100 cm^2)
- Soil:
  - Surface soil*: Soil sample < 0.49 mg/kg (ppm)
  - Subsurface soil: Soil sample < 100 mg/kg (ppm)

*Surface soil is top 2 feet of soil.

detection limit to ensure the confidence of the value reported. When a concentration is detected below the laboratory quantitation limit but above the method detection limit, the letter "J" is assigned to that concentration. The J indicates that the concentration is estimated due to detection at or below the laboratory quantitation limit (but above the method detection limit). The method detection limits are reported in the summary tables in Section 4 and Appendix D, but the quantitation limits are reported only in Appendix D.

Many of the inorganic compounds in soil and groundwater that were analyzed for occur in nature or commonly exist because of human activities. For example, naturally occurring inorganic compounds are always present in groundwater and soil samples. Lead is generally found at elevated levels near heavily traveled roads because it was formerly used in gasoline. Pesticides and herbicides are commonly found in suburban settings because of past applications of these substances.

The background concentration, therefore, is the concentration of a compound in the environment that occurs naturally or as the result of unrelated base activities. The estimate of background is based on analytical results of sampling at background locations and a review of published material.

There is no generally accepted method for determining the background concentration. For this investigation, a total of 10 groundwater and soil background samples and 2 sediment and surface-water background samples were taken on both Charles Wood and Main Post. Background sampling locations were selected as specified in the document *Investigations of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (WESTON, 1993), which was approved by NJDEP. The U.S. Environmental Protection Agency (EPA) has provided some guidance in its document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.* It provides a number of scenarios for comparing groundwater analytical data against background well data. In discussing the tolerance interval method, the document suggests that the groundwater data be compared with the 95% confidence limit for the 95th percentile of the background data; however, the method specified can be strictly applied only when the data have a normal distribution or a log normal distribution. Neither of these is true for the background

data collected at Fort Monmouth. Nonparametric methods that are similar to the tolerance interval method involve simply selecting the data value that is at the 95th percentile of the data set. Since there are 10 data points, the equivalent method for the background samples at Fort Monmouth is to use the maximum background value. Each environmental sample concentration was compared against the maximum value that was measured in the background samples. If a compound was not detected in the background samples, then any measurement above the detection limit for that compound in an environmental sample was considered to be above background. This practice was followed at other New Jersey sites.

An outlier screening was conducted to identify background concentrations that were not consistent with other background concentrations. Based on the screening, outliers were rejected for beryllium, chromium, cobalt, lead, vanadium, and zinc in groundwater on the Main Post, and manganese in soil on Charles Wood.

The Monmouth County and site-specific background concentrations for total metals at Fort Monmouth were determined using literature values and on-site background data. The values in Tables 4.1-6 and 4.1-7 are based on the maximum concentrations of inorganic analytes in background wells and soil borings at Main Post and Charles Wood. These data are compared with the maximum Monmouth County background values, based on published data. The Monmouth County values for soil are from Fields et al., 1992, and the Monmouth County background values for groundwater are from Harriman and Sargent, 1985.

The Monmouth County background concentrations for soils are based on the analyses of samples from the vicinity of Fort Monmouth (see Table 9 and the locations of samples 35 and 36 in Figure 1 in Fields et al., 1992). Sample 36 (Fields et al., 1992) was collected near Charles Wood and sample 35 (Fields et al., 1992) was collected northeast of the Main Post. The site-specific background concentrations are based on samples from the two areas collected during this investigation. Most of the soil samples were from landscaping fill and natural deposits in Fort Monmouth. The screened intervals in the background monitor wells are also in landscaping fill

Table 4.1-6

Fort Monmouth - Main Post

Summary of Site-Specific and Monmouth County

Soil and Groundwater Maximum Background Concentrations

COMPOUNDS	SOILS		GROUNDWATER	
	Site Specific (maximum)	Monmouth County[1] (maximum)	Site Specific (maximum)	Monmouth County[2] (maximum)
SVOC'S	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Phenol	0.420 J	-	ND	-
Acenaphthylene	0.041 J	-	ND	-
Acenaphthene	0.100 J	-	ND	-
Dibenzofuran	0.060 J	-	ND	-
Diethylphthalate	ND	-	ND	-
Fluorene	0.074 J	-	ND	-
Phenanthrene	0.39	-	ND	-
Anthracene	0.100 J	-	ND	-
Di-n-butylphthalate	2.2 B	-	ND	-
Fluoranthene	0.46	-	ND	-
Pyrene	1.5	-	ND	-
Benzo(a)anthracene	0.65	-	ND	-
Chrysene	0.65	-	3 J	-
bis(2-Ethylhexyl)phthalate	.19 J	-	5 J	-
Benzo(b)fluoranthene	0.9	-	ND	-
Benzo(k)fluoranthene	0.43	-	ND	-
Benzo(a)pyrene	0.6	-	ND	-
Indeno(1,2,3-cd)pyrene	0.46	-	ND	-
Dibenzo(a,h)anthracene	0.079 JB	-	ND	-
Benzo(g,h,i)perylene	0.64 B	-	ND	-
PESTICIDE / PCB	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Heptachlor epoxide	ND	-	0.041 J	-
4,4-DDD	0.0096 P	-	ND	-
4,4'-DDE	0.0096 P	-	ND	-
4,4'-DDT	0.11	-	ND	-
METALS TOTAL	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Aluminum	15200	NLE	121000	NLE
Antimony	ND	NLE	20.7	NLE
Arsenic	22.9	4.56	89.3	NLE
Barium	32.3	NLE	699	400
Beryllium	2	0.09	2.1	7
Calcium	921	NLE	45400	7300
Cadmium	ND	0.116	9.5	6
Cobalt	2.5	NLE	18.3	NLE
Chromium	269	0.104	191	< 50
Copper	8	6.05	65.6	730
Cyanide	ND	NLE	ND	NLE
Iron	55800	11	431000	27000
Lead	19.5	25.9	22.7	< 100
Magnesium	7230	NLE	62700	25000
Mercury	ND	NLE	0.26	NLE
Manganese	90.7	59	331	480
Nickel	8.4	3.2	187	NLE
Potassium	15400	NLE	137000	10000
Silver	1.1	0.21	ND	< 10
Sodium	51.6	NLE	21500	197000
Selenium	1.9	0.11	29.6	NLE
Thallium	ND	NLE	5.5	NLE
Vanadium	94.1	1.3	108	NLE
Zinc	81.4	44.6	233	60

ND - Not detected at the quantification limits

NLE - No level established

[1] - Sample 35 in Fields et al., 1992

[2] - From Table 9 in Harriman and Sargent, 1985

- Literature search was not completed for SVOC and Pest/PCB compounds.

Table 4.1-7

Fort Monmouth - Charles Wood

Summary of Site Specific and Monmouth County

Soil and Groundwater Maximum Background Concentrations

COMPOUNDS	SOILS		GROUNDWATER	
	Site Specific (maximum)	Monmouth County[1] (maximum)	Site Specific (maximum)	Monmouth County[2] (maximum)
SVOC'S	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Phenol	ND	-	ND	-
Acenaphthylene	ND	-	ND	-
Acenaphthene	ND	-	ND	-
Dibenzofuran	ND	-	ND	-
Diethylphthalate	ND	-	1 J	-
Fluorene	ND	-	ND	-
Phenanthrene	ND	-	ND	-
Anthracene	ND	-	ND	-
Di-n-butylphthalate	2 B	-	ND	-
Fluoranthene	0.042 J	-	ND	-
Pyrene	0.048 J	-	ND	-
Benzo(a)anthracene	0.046 J	-	ND	-
Chrysene	0.083 J	-	ND	-
bis(2-Ethylhexyl)phthalate	0.170 J	-	600	-
Benzo(b)fluoranthene	0.078 J	-	ND	-
Benzo(k)fluoranthene	0.041 J	-	ND	-
Benzo(a)pyrene	0.047 J	-	ND	-
Indeno(1,2,3-cd)pyrene	ND	-	ND	-
Dibenzo(a,h)anthracene	ND	-	ND	-
Benzo(g,h,i)perylene	0.042 J	-	ND	-
PESTICIDE / PCB	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Heptachlor epoxide	ND	-	ND	-
4,4-DDD	ND	-	ND	-
4,4'-DDE	0.071	-	ND	-
4,4'-DDT	0.053	-	ND	-
METALS TOTAL	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Aluminum	15700	NLE	8210	NLE
Antimony	ND	NLE	ND	NLE
Arsenic	31.6	10.7	25.1	NLE
Barium	26	NLE	192	400
Beryllium	1.7	0.88	2.8	7
Calcium	653	NLE	8700	7300
Cadmium	ND	0.135	3.7	6
Cobalt	4.5	NLE	30.6	NLE
Chromium	128	0.14	49.6	< 50
Copper	6.6	7.27	9.8	730
Cyanide	0.41	NLE	ND	NLE
Iron	45500	23.7	19600	27000
Lead	11.1	15.1	7.3	< 100
Magnesium	3960	NLE	7160	25000
Mercury	ND	NLE	ND	NLE
Manganese	48.7	120	232	480
Nickel	8.3	8.3	48.3	NLE
Potassium	10600	NLE	4630	10000
Silver	ND	0.26	ND	< 10
Sodium	56.8	NLE	36400	197000
Selenium	0.85	0.17	3.8	NLE
Thallium	ND	NLE	ND	NLE
Vanadium	59.6	14	28.9	NLE
Zinc	55.6	28.1	133	60

ND - Not detected at the quantification limits

NLE - No level established

[1] - Sample 36 in Fields et al., 1992

[2] - From Table 9 in Harriman and Sargent, 1985

- Literature search was not completed for SVOC and Pest/PCB compounds.

and natural deposits. The Monmouth County and site-specific background concentrations are provided in Tables 4.1-6 and 4.1-7.

Table 4.1-6 summarizes the Monmouth County and site-specific background concentrations for the Main Post area. The background concentrations of metals in soils at the Main Post site are generally below regional concentrations, except for arsenic, chromium, beryllium, selenium, iron, manganese, nickel, zinc, silver, and vanadium.

Nine analytes exceeded maximum Monmouth County values for groundwater in the Main Post area: barium, beryllium, calcium, cadmium, chromium, iron, magnesium, potassium, and zinc (Table 4.1-6).

Table 4.1-7 summarizes the Monmouth County and site-specific background concentrations for the Charles Wood area. The background concentrations in soils at Charles Wood are generally below Monmouth County concentrations, except for arsenic, beryllium, chromium, iron, selenium, vanadium, and zinc.

For the background groundwater concentration established for this investigation, two analytes exceeded the maximum values established for Monmouth County: calcium and zinc (Table 4.1-7). Calcium concentrations in groundwater at Charles Wood are 12% higher than the Monmouth County concentrations. Zinc concentrations are twice as high as the Monmouth County concentrations.

Several factors, both natural and anthropogenic, contribute to the wide range in the concentrations of metals in the soils at the Main Post and Charles Wood areas. The primary natural influence on the chemical characteristics of the overburden at Fort Monmouth is parent material. The parent material is glauconitic quartzose sands of the Tinton and Red Bank sands and their fluvially- and tidally-reworked equivalents. The mineral glauconite is a potassium-, sodium-, calcium-, iron-, aluminum-, magnesium-rich hydrosilicate (Klein et al., 1985). Soils derived from the glauconitic sands contain abundant iron, aluminum, calcium, magnesium, manganese, and potassium (Tedrow, 1986). The tidal sediments probably contained iron and manganese concretions. As

noted by Fields et al. (1992, p. 19), manganese is a highly variable soil constituent. Groundwater flowing through glauconitic formations contains calcium and magnesium (Meisler et al., 1988, p. 215).

An additional natural influence on background groundwater chemistry is saltwater intrusion. As noted in Section 2, the Main Post and Charles Wood areas are underlain by dissected unconsolidated Coastal Plain sediments. The Coastal Plain aquifers are susceptible to saltwater encroachment, particularly near the coast and along tidal rivers and streams (Gill, 1962; Harriman et al., 1989; Harriman and Sargent, 1985).

Saltwater encroaches several miles inland on tidal streams, particularly during periods of low flow (Gill, 1962). Saltwater encroachment will lead to saltwater intrusion into the adjacent aquifers. Husky Brook and Lafetra Creek are tributary estuaries to the estuaries of Oceanport and Parkers Creeks. Saltwater will encroach several miles up these estuaries.

The area of Monmouth County where Fort Monmouth is located is underlain by groundwater with relatively high manganese and iron concentrations. The manganese and iron concentrations reported for eastern Monmouth County in Harriman et al. (1989) range from 110 to 200 µg/L for manganese and 7,900 to 14,000 µg/L for iron. These concentrations are reported for the Upper Potomac Raritan-Magothy aquifer, but the concentrations are expected to be comparable in the shallower, lithologically similar Tinton and Red Bank sands.

Anthropogenic influences on the background metals include deposition of airborne dust, and fertilizers, pesticides, and herbicides (Fields et al., 1992). The Fort Monmouth area is located downwind from farms (Jablonski, 1989). Vanadium can be a result of oil burning (Fields et al., 1992, p. 20). Arsenic was a common constituent of herbicides and pesticides in the past.

Concentrations detected in surface-water samples collected at Fort Monmouth (Main Post and Charles Wood) in December 1994 were compared to fresh and saltwater NJDEP Surface Water Standards (NJDEP, 1993). Based on observations by field personnel, sample locations were designated as saltwater if the area was tidally influenced. All surface-water and sediment

sampling locations at the Main Post were determined to be saltwater, with the exception of site M-2 (M2SW-1 and M2SW-2) and background locations (SS-B1 and SS-B2). However, all sampling locations at Charles Wood were designated as freshwater. Detected concentrations were also compared to maximum background concentrations for surface water collected at each site. Because many contaminants are readily sorbed to sediment and particles suspended in the water column, and may significantly augment concentrations of contaminants detected in surface water, total (unfiltered) as well as soluble (filtered) surface-water concentrations were compared to criteria and background. Note, however, that the criteria are developed based on the total concentration in surface-water. Surface-water locations sampled at the Main Post were M-2, M-3, and M-14: background surface-water samples were collected at two areas (SS-B1 and SS-B2). Only background surface-water samples were collected at Charles Wood (CW-2 and CW-5). Surface-water criteria are presented in Table 4.1-4. Maximum background concentrations are presented in Table 4.1-8 for the Main Post and in Table 4.1-9 for Charles Wood.

Concentrations of chemicals detected in freshwater and saltwater sediment samples collected at Fort Monmouth, NJ (Main Post and Charles Wood) in December 1994 were compared to NJDEP freshwater sediment guidance values (NJDEP, 1991), or marine/estuarine biological effects screening levels for saltwater (Long et al., 1995), as well as maximum detected background concentrations detected from each site. Concentrations from two sediment sample locations at the Main Post, AOC-3 and the pre-1941 STP, and one location at Charles Wood, CW-5, were compared to the appropriate sediment criteria and background. Sediment criteria are presented in Table 4.1-4. No background sediment samples were collected at saltwater locations on the Main Post. Maximum background concentrations are presented in Tables 4.1-8 and 4.1-9.

NJDEP sediment guidance values incorporate National Oceanic and Atmospheric Administration (NOAA) sediment guidance values (NOAA, 1990) and NJDEP's equilibrium partitioning (EqP) approach for evaluating toxicity and bioavailability of sediment-bound, nonionic organic chemicals. For this screening evaluation, concentrations in sediment were compared to sediment NOAA Effects Range-Low (ER-L) levels (i.e., the lower 10th percentile of the chemical concentration associated with toxicity) and EqP-based criteria, which are adjusted to reflect site-specific total organic carbon (TOC) content (Table 4.1-4).

Background sediment samples were collected from two areas at the Main Post (SS-B1 and SS-B2), and two areas at Charles Wood (CW-2 and CW-5).

Table 4.1-8
Fort Monmouth - Main Post
Surface Water and Sediment Maximum Background Concentrations

COMPOUND	SEDIMENTS (mg/kg)	SURFACE WATER	
		Total	Soluable
VOCs			
Acetone	0.47 B	ND	ND
2-Butanone	0.1	ND	ND
SVOCs			
Phenanthrene	0.39 J	ND	ND
Anthracene	0.061 J	ND	ND
Carbazole	0.051 J	ND	ND
Di-n-butylphthalate	0.26 JB	ND	ND
Fluoranthene	1.5	ND	ND
Pyrene	2	ND	ND
Benzo(a)anthracene	1.3	ND	ND
Chrysene	0.37 J	ND	ND
bis(2-Ethylhexyl)phthalate	0.43 J	ND	ND
Benzo(b)fluoranthene	1.8	ND	ND
Benzo(k)fluoranthene	0.58	ND	ND
Benzo(a)pyrene	1.2	ND	ND
Indeno(1,2,3-cd)pyrene	0.7	ND	ND
Dibenzo(a,h)anthracene	0.12 J	ND	ND
Benzo(g,h,i)perylene	0.67	ND	ND
Total Organic Carbon	5.7	ND	ND
PESTICIDES/PCBs			
Heptachlor epoxide	0.014 P	ND	ND
Endosulfan I	0.0024 J	ND	ND
4,4'-DDE	0.0092 J	ND	ND
4,4'-DDD	0.013	ND	ND
4,4'-DDT	0.0057 JP	ND	ND
alpha-Chlordane	0.011 P	ND	ND
gamma-Chlordane	0.0092 P	ND	ND
METALS			
Aluminum	9060	748	ND
Arsenic	14.5	2.6	ND
Barium	87.6	44.7	39.4
Beryllium	3.2	ND	ND
Calcium	3180	31600	30900
Cobalt	119	8.1	4.1
Chromium	88.1	7.5	ND
Copper	48.4	3.2	4
Iron	61900	6210	405
Mercury	1.7	ND	ND
Potassium	10200	5060	4280
Magnesium	3280	5440	5120
Manganese	70.2	113	98.6
Sodium	189	26700	26200
Nickel	131	22.9	16.1
Lead	64.1	10	ND
Selenium	1.7	ND	ND
Vanadium	49.1	5.8	ND
Zinc	162	35.1	23.8
Cyanide	3.1	ND	ND

Table 4.1-9
Fort Monmouth - Charles Wood
Surface Water and Sediment Maximum Background Concentrations

COMPOUND	SEDIMENT	SURFACE WATER	
		(Total)	(Soluble)
SVOCs (mg/kg)			
bis-(2-Ethylhexy)phthalate	0.23 J	1 J	ND
Di-n-butylphthalate	0.12 J	ND	ND
PAHs (mg/kg)			
Benzo (a)anthracene	0.09 J	ND	ND
Benzo (a)pyrene	0.1 J	ND	ND
Benzo (b)fluoranthene	0.16 J	ND	ND
Benzo (g,h,i)perylene	0.21 J	ND	ND
Chrysene	0.14 J	ND	ND
Fluoranthene	0.12 J	ND	ND
Indeno (1,2,3-cd)perylene	0.19 J	ND	ND
Phenanthrene	0.079 J	ND	ND
Pyrene	0.41 J	ND	ND
PESTICIDES/PCBs (mg/kg)			
4,4'-DDD	0.015 PD	ND	ND
4,4'-DDE	0.096	ND	ND
4,4'-DDT	0.11	ND	ND
METALS TOTAL (mg/kg)			
Aluminum	6660	265	160
Antimony	ND	26.8	ND
Arsenic	5.8	ND	ND
Barium	45.7	77.1	78.2
Calcium	2960	22900	24000
Chromium	36.9	ND	ND
Cobalt	4.2	2.8	ND
Copper	24.5	8	10.2
Iron	19600	715	435
Lead	142	5.3	65.9
Magnesium	2560	7050	7390
Manganese	65.1	97.4	100
Nickel	11.3	ND	ND
Potassium	1700	3590	4040
Selenium	0.68	ND	ND
Sodium	271	156000	164000
Vanadium	39.5	ND	ND
Zinc	126	204	215

J - Estimated Concentrations

D - Diluted Analysis

P - Percent difference between two columns, the smaller of two is reported

ND - Compound was not detected at or above the quantification limit.

Main Post
Background Samples

4.2 MAIN POST

Subsection 4.2 presents a description of each Main Post site, the sampling rationale, and the results of sampling activities. The sites and the sampling effort are summarized in Table 4.2-1. Additional historical information on each site may be obtained from the *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*, 1993.

This subsection also summarizes the results of the sediment, surface-water, soil, and groundwater sampling program that was implemented to characterize site conditions on the Main Post, as identified in the WESTON report titled *Site Investigation, Chemical Data Acquisition Plan* (CDAP). A total of 4 sediment and 8 surface-water samples were taken on the Main Post. In addition, a total of 15 soil borings and 29 monitor wells were installed on Main Post sites. Soil and groundwater samples were collected from the borings and monitor wells and were analyzed for compounds determined to be characteristic of the wastes associated with each area, i.e., TCL and TAL analytes (Tables 3.6-1 and 3.8-1).

The field effort was conducted in accordance with the scope and procedures outlined in the CDAP. However, there were slight differences, which are summarized in Table 4.2-2. Appendix D presents the analytical results of the Main Post sampling activities. Detailed information regarding the specific sampling protocols for each site is provided in the subsections that follow. In addition to the results of groundwater and soil analyses, the lithologic descriptions and water-level information are used to provide a hydrogeologic interpretation of the site, where appropriate.

Figure 4.2-1 shows the location of the 13 Main Post sites discussed in this subsection.

4.2.1 Background Samples

The background sample locations were selected prior to the initiation of field activities in areas believed to be unaffected by base activities. These locations were as specified in the

Table 4.2-1

Site Investigation Summary — Main Post

Site Number	Site Type	Description	Potential Waste/ Contaminants	Previous Sampling Activities[a]	Investigation Activities
M-2	Landfill	Operated 1964-1968. Currently used for leaf composting and to store wood chips. Debris protrudes from bank of Mill Creek. Was unfenced — covered with soil and gravel from Earle.	Domestic and industrial waste, oil in cans, filters, soot, and building rubble.	NJPDES sampling upstream (SW-1) and downstream (SW-2) on Mill Creek. Detected VOCs, metals, and inorganics.	Installed and sampled 3 monitor wells. Sampled surface water at the NJPDES locations (M2SW-1 and M2SW-2) and a new upstream surface-water location (SS-B1). Analyzed for TCL +30[b]/TAL/CN. Tidal water-level monitoring.
M-3	Landfill	Operated 1959-1964. Was fenced; had skeet shooting range. Burned wood debris. Had tear gas training in tent. Currently grass-covered; no visible debris.	Domestic and industrial waste. Wood and coal ash from stoves, boiler.	NJPDES sampling locations SS-3, SS-4. Detected VOCs, metals, and inorganics.	Sampled surface water at the NJPDES locations (M10SW-1 and M6SW-1) and upstream surface-water sampling location (SS-B2). Used GPR and magnetics to define extent of landfill. Installed and sampled 3 monitor wells. Analyzed for TCL +30/TAL/CN.
M-4	Landfill	Operated 1956 only. Currently grass-covered; no visible debris.	Building rubble.	None.	Installed and sampled 3 monitor wells. Analyzed for TCL +30/TAL/CN.
M-5	Landfill	Operated 1952-1959. Currently grass-covered; no visible debris.	Domestic and industrial waste.	NJPDES sampling locations SS-5, SS-6. Detected VOCs, metals, and inorganics.	Installed and sampled 2 monitor wells. Analyzed for TCL +30/TAL/CN/sulfate.
M-6	Burning area	Located on Landfill M-3. Operated until 1970s. Burned general trash. Currently no visible contamination.	General trash.	None.	See M-3.
M-8	Landfill	Operated 1962-1981. Currently has leaf-composting operation. Was fenced and controlled during operation.	Domestic and industrial waste including pesticide/herbicide cans, batteries, asbestos, sludge from STP, and miscellaneous chemicals.	Four monitor wells, NJPDES sampling location SS-7.	Abandoned existing wells and piezometers; installed 4 new monitor wells. Analyzed for TCL +30/TAL/CN/NH_3/sulfate. Tidal water-level monitoring.
M-12	Landfill	Date of operation unknown. Located across Husky Brook from M-14.	Domestic and industrial waste, automobiles, oil, and building rubble.	NJPDES sampling locations SS-8, SS-9, and SS-10.	Used GPR and magnetics to locate landfill and define boundaries. Installed 3 monitor wells. Analyzed for TCL +30/TAL/CN. Tidal monitoring with M-14.
M-14	Landfill	Operated from 1965-1966. Has NJPDES permit.	Building rubble and dredgings from Husky Brook Lake.	NJPDES sampling upstream and downstream on Husky Brook Creek, SS-8, SS-9, and SS-10.	Used GPR and magnetics in western area. Installed and sampled 3 monitor wells for TCL +30/TAL/CN. Tidal monitoring with M-12. Sampled M14SW-8 and M14SW-9 surface-water locations.

Table 4.2-1

Site Investigation Summary — Main Post (Continued)

Site Number	Site Type	Description	Potential Waste/ Contaminants	Previous Sampling Activities[a]	Investigation Activities
M-15	Water tank	Used for fire-fighting water. Built in 1940s. Paint chips on ground surrounding tank. Stressed vegetation around base of tank.	Lead.	None.	Collected 2 surface soil samples. Analyzed for TCL SVOCs, TAL, and pesticides.
M-16	Former Pesticide Storage Bldg. 498	Misidentified as Bldg. 167 in 1980 report. Building 498 used for pesticide control shop in the 1940s and 1950s: disposal to sink, which discharged to sanitary sewer. No apparent outside disposal.	Pesticides and herbicides.	None.	Collected 4 soil samples from 0 to 6 inches bgs. Installed soil boring and 1 monitor well. Analyzed for TCL +30. Analyzed for TAL in SB-01.
M-18	Former training area	Army Signal School. Diesel and gasoline generators.	Diesel and oil spilled on ground. PAHs, VOCs, TPHs, lead.	None.	Conducted geophysical surveys, completed 9 soil borings, sampled 6 to 12 inches or 12 to 18 inches, stained areas, and/or just above water table. Installed 2 monitor wells in soil borings. Sampled soil for VOCs and TPHs. In addition, sampled for SVOCs and TAL at SB-06 only. Sampled groundwater for TCL +30/TAL/TPHs.
AOC-3	Former sewage treatment plant	Operated 1941-1975. Sludge drying bed located on concrete base. Sludge transported to golf course and landfills. 1935 map shows pistol range on this location.	Heavy metals, cyanide, and pesticides.	Monitor wells installed west of site. Sludge sampled in 1981; no heavy metals detected.	Sampled outfall sediments and 2 soil borings in sludge bed area for TCL + 30/TAL/CN.
New Site, Not Noted in IA Report	Former treatment plant	Operated until 1941. Located approximately where Bldg. 250 is today. Labeled on 1935 map.	Heavy metals.	None.	Sampled outfall sediment for metals.
PCB Trans-formers	Buildings (see Table 4.2-22)	Several transformers in this area were tested for PCBs in 1990. Those with PCBs >500 ppm were removed or remediated.	PCBs	Transformers sampled — several > 500 ppm. See Table 4.2-22.	Sampled PCB transformer locations.

[a]Results of previous investigation were presented on the report titled *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey* (1993).
[b]TCL +30 = Target Compound List; includes volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs).

Table 4.2-2

Differences Between the Proposed and Actual Work at Main Post

Site	Differences
M-15	Soil samples from SS-01 and SS-02 were collected and analyzed for TCL SVOCs; however, TCL SVOC analyses were not proposed in the CDAP.
M-16	Soil samples from SB-01 were collected and analyzed for TAL metals; however, TAL metals analyses were not proposed in the CDAP.
M-18	Installed 9 soil borings instead of 12, and 2 monitor wells instead of 3 because marshy conditions made some of the planned sampling locations inaccessible. Sampled one existing monitor well in addition to the 2 newly installed wells. In eight of nine soil borings, no soil staining was observed so no SVOC analysis was performed as per the CDAP.

Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey, 1993, which was approved by NJDEP. Background characterization data were collected to evaluate soil, groundwater, surface water, and sediment in areas of the base considered to be representative of natural materials or upgradient conditions.

Sediment and surface-water samples were taken upgradient of the Main Post on Lafetra Creek and Mill Creek. Five background soil borings, which were converted into monitor wells, were installed and two discrete soil intervals were sampled from each boring. Two rounds of groundwater samples were collected from each location. Soil and groundwater samples were analyzed for the parameters listed in Section 3, Tables 3.6-1 and 3.8-1. Background monitor wells were labeled as "B" wells, i.e., MW-01B. Main Post background locations are shown in Figure 4.2-2 and labeled B-1, B-2, etc. Monitor well MW-01B was installed at background location B-1 and a similar practice was followed at the other background locations.

4.2.1.1 Hydrogeologic Interpretation

The five monitor wells installed at the Main Post were installed to depths ranging from 14 ft below ground surface (bgs) to 26 ft bgs. Total depths were determined during drilling and were based on the depth at which water was encountered. The lithology and depth to water varied between background locations, as presented on the lithologic logs in Appendix A. Monitor wells were screened across the water table.

4.2.1.2 Soil Sampling Results

As outlined in the CDAP, soil samples were collected from two discrete intervals: 0 to 2 ft bgs and between 2 and 10 ft bgs or to groundwater. Soil-boring depths varied among the background locations, depending on the depth to groundwater. The compounds detected in background soil samples at the specific sampling intervals, with the corresponding sample identifications, are presented in Appendix D. Table 4.1-6 summarizes the maximum concentrations detected in background soil at the Main Post and presents published maximum concentrations for Monmouth County.

VOCs

VOCs were analyzed for but were not detected in Main Post background soil samples.

SVOCs

A total of 19 SVOCs were detected in Main Post background soil samples (Table 4.1-6).

Pesticides/PCBs

Three pesticides (4,4'-DDE, 4,4-DDD, and 4,4'-DDT) were detected above the laboratory quantitation limit in Main Post background soils.

Metals

A total of 19 metals were detected above laboratory quantitation limits in Main Post background soils.

Cyanide

Cyanide was not detected in any of the Main Post background soil samples.

4.2.1.3 Groundwater Sampling Results

Two rounds of groundwater samples were collected at the Main Post. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.1-6 summarizes the maximum background concentrations detected in groundwater at the Main Post.

VOCs

VOCs were not detected in any of the background samples from the Main Post.

SVOCs

Two SVOCs [bis(2-ethylhexyl) phthalate and chrysene] were detected in concentrations above or below the laboratory quantitation limits. However, bis(2-ethylhexyl) phthalate is a common laboratory contaminant.

Pesticides/PCBs

One pesticide (heptachlor epoxide) was detected in the background groundwater samples in a concentration below the laboratory quantitation limit. PCBs were not detected at the background locations.

Metals

As indicated in Table 4.1-6, 22 metals (total) were detected in concentrations above laboratory quantitation limits in background groundwater at the Main Post.

Cyanide

Cyanide was not detected in the background groundwater at the Main Post.

4.2.1.4 Surface-Water Sampling Results

Two surface-water samples collected at locations upgradient from on-site drainage (SS-B1 and SS-B2) were selected as background samples (Figure 4.2-2). The analytes detected in background surface water and corresponding sample identifications are presented in Appendix D.

Table 4.1-8 summarizes the maximum detected concentrations in total and soluble background surface water at the Main Post.

VOCs

VOCs were analyzed for but not detected in background surface water (total) at the Main Post. VOC analysis was not performed for the soluble background surface-water samples.

SVOCs

SVOCs were analyzed for but not detected in background surface water (total) at the Main Post. SVOC analysis was not performed for the soluble background surface-water samples.

Metals

A total of 13 metals were detected above laboratory quantitation limits at the Main Post. Similarly, 11 metals were detected above laboratory quantitation limits in the filtered (soluble) background surface-water samples (Table 4.1-8).

4.2.1.5 Sediment Sampling Results

Two sediment sampling locations at the Main Post, SS-B1 and SS-B2, were selected as background because they are located upgradient of on-site drainage (Figure 4.2-2). Analytes detected in background sediment and corresponding sample identifications are presented in Appendix D. Table 4.1-8 summarizes the maximum detected concentrations in background sediment at the Main Post.

VOCs

Four VOCs (acetone, 2-butanone, 1,2-dichloroethene, and vinyl chloride) were detected above the laboratory quantitation limits in Main Post background sediments. However, acetone and 2-butanone are common laboratory contaminants.

SVOCs

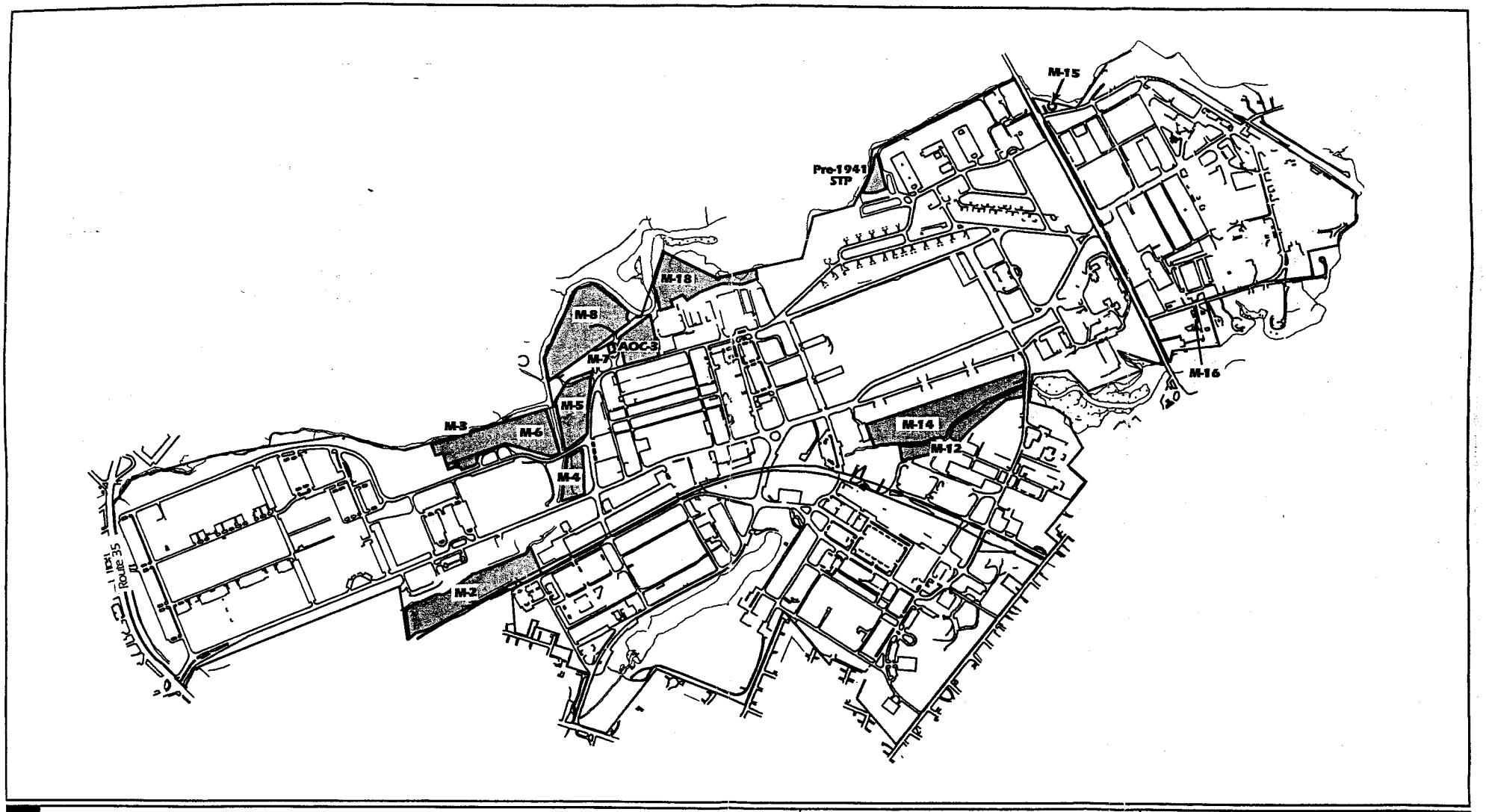
One SVOC, di-n-butyl phthalate, was detected in concentrations above the laboratory quantitation limits in Main Post background sediment. Benzo(a)pyrene was the only polyaromatic hydrocarbon (PAH) compound detected in concentrations above the laboratory quantitation limits in Main Post background sediment.

Pesticides

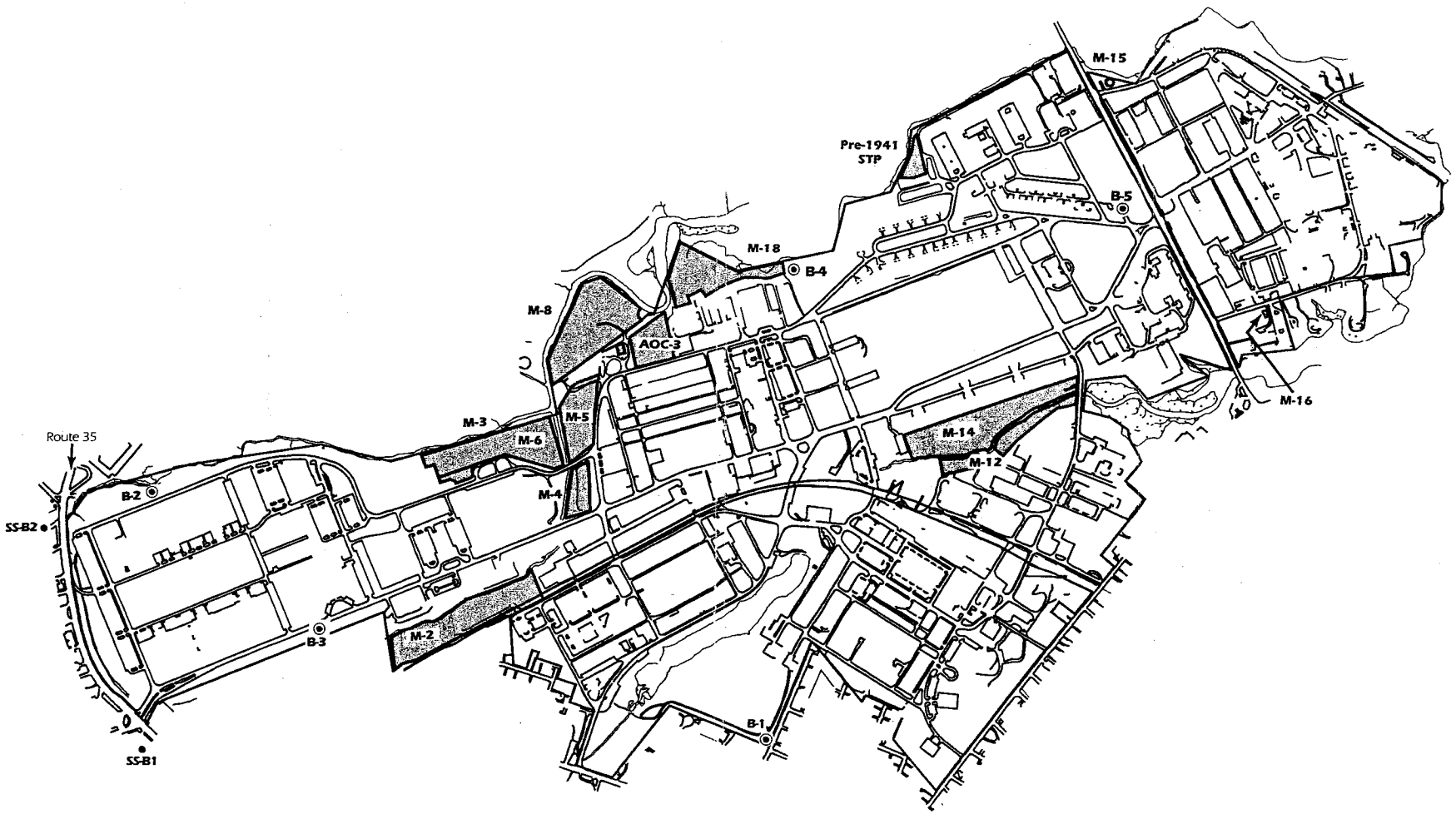
Pesticides were analyzed for but not detected in background sediments at the Main Post.

Metals

A total of 19 metals in background sediment at the Main Post were detected above laboratory quantitation limits (see Table 4.1-8).


M-15
Pre-1941 STP
M-18
M-8
DAOC-3
M-7
M-16
M-5
M-3
M-6
M-14
M-12
M-4
M-2
Route 35
LEGEND
Road (paved)
Building
Site
Lake
Marshy Area
usrd/fort/main/newmain.dgn Sep. 26, 1995 10:07:01
0
800
1600
SCALE IN FEET
95P-3194
9/28.95
Fort Monmouth, Main Post
FIGURE 4.2-1
MAIN POST SITE LOCATION MAP

/FORT/MAIN/MAINSITE.DGN



LEGEND

Road (paved)
Building
Site
Lake
Marshy Area
Background Soil Boring/Monitor Well
Upgradient Surface Water and Sediment

0 800 1600
SCALE IN FEET

95P.3194 5/23/94

Fort Monmouth, Main Post

FIGURE 4.2-2
MAIN POST BACKGROUND SAMPLE LOCATIONS

Site M-2

4.2.2 Landfill 2 (M-2)

4.2.2.1 Site Location

Landfill 2 (M-2) is located in the southwestern corner of the Main Post, on the south bank of Mill Creek (Figures 4.2-1 and 4.2-3). The approximate area of Landfill 2 is 280,400 ft^2 (6.5 acres).

4.2.2.2 Site History

According to the Installation Assessment (IA) (USATHAMA, 1980), Landfill 2 was in use between 1964 and 1968. A review of aerial photographs suggests that the landfill was still in use in 1969. The 1969 aerial photograph shows that the western three-quarters of the site is mostly bare ground with abundant wheel tracks; a 50- by 300-ft area in the center of this western area is covered with small piles of debris; vegetation is visible between some of the piles, suggesting that the piles had been there for some time. The eastern quarter of the site is vegetated; a small square building and a steel storage igloo were located near the entrance to the landfill. At present, the Landfill 2 area is used for storage of wood chips.

Materials generally found in Main Post landfills include unwashed pesticide/herbicide cans, batteries, fluorescent tubes, electronic components, garbage, asbestos wrappings from pipes, soot and boiler scale, sludge from sanitary treatment plants (STPs), small quantities of outdated drugs, outdated photographic chemicals in glass bottles, building rubble [including asbestos-containing materials (ACM)], incinerator ash, sand from oil spill cleanups, and other debris (IA). According to the IA, specific wastes known to have been put in Landfill 2 include oil in cans, oil burner filters (with approximately 0.5 liter of oil in each), and soot. The banks along Mill Creek near the west end of Landfill 2 were reportedly covered with building rubble (concrete, cinder blocks, etc.) to stabilize the bank. Metal and concrete protrude from the banks of Mill Creek.

As part of a New Jersey Pollutant Discharge Elimination System (NJPDES) permit (permit No. 0057274), surface-water samples have been taken at two locations in Mill Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). Two VOCs

(tetrachloroethene and trichloroethene) were detected in concentrations above the NJDEP surface-water criteria.

4.2.2.3 Sampling Effort

To identify the source of the halogenated hydrocarbons (HHCs) detected in surface-water samples collected from a previous investigation (WESTON, 1993), two new surface-water samples (M2SW-1 and M2SW-2) were collected (Figures 4.2-2 and 4.2-3). In addition, three shallow monitor wells (MW-1, MW-2, and MW-3) were installed. Monitor well locations (MW-1 through MW-3) and surface-water locations are presented in Figure 4.2-3. Tidal water-level monitoring was conducted for a minimum of 72 hours in the three monitor wells and at stilling well-1 and stilling well-2 prior to the collection of analytical samples. Two rounds of groundwater samples and one round of surface-water samples were analyzed for TCL +30 parameters (which include VOCs, SVOCs, pesticides, and PCBs), TAL metals, and cyanide.

4.2.2.4 Hydrogeologic Interpretation

Lithologic logs from MW-2 and MW-3 indicate that the lithology consists of a thin soil cover (0.2 ft) underlain by fill material. The components of the filled materials observed in both borings consist of coal and wood fragments, roof shingles, paper, and miscellaneous debris. Natural quartz sand, silt, and clays were intermixed with the manmade materials. Monitor well MW-1, located upgradient of the landfill boundary, indicates a lithology consisting primarily of silty medium-fine-grained sand that overlies a fine-medium-grained sandy silt.

Groundwater saturation was observed at approximately 8 ft bgs at all of the well locations. The three monitor wells were screened across the water table, with total depths of 23, 18, and 16 feet bgs in MW-1, MW-2, and MW-3, respectively. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is north toward Mill Creek (Figure 4.2-4). Based on groundwater elevation measurements, monitor wells MW-2 and MW-3 are downgradient of the M-2 area.

4.2.2.5 Groundwater Sampling Results

Monitor wells at site M-2 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results in groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-3 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP Groundwater Quality Criteria (GWQC), and then compares the results to the subsequent site-specific maximum background and/or Monmouth County background concentrations, where appropriate. Figure 4.2-5 presents the locations and averaged concentrations of compounds detected above both the NJDEP GWQC and the background concentrations established for the Main Post.

VOCs

Chlorobenzene was the only VOC detected in site M-2 groundwater (Figure 4.2-5). However, chlorobenzene was detected in concentrations exceeding the NJDEP GWQC from both sampling rounds in MW-2 and MW-3. Chlorobenzene was not detected in the February sampling round in MW-1, but was detected in the March sampling round in exceedance of the NJDEP GWQC.

SVOCs

SVOCs were not detected in site monitor wells above laboratory quantitation limits from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-3, of the 20 metals detected in site groundwater, only 5 (aluminum, arsenic, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC.

Table 4.2-3
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-2

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATIONS (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW1 2/15/95, 3/8/95 (avg.)	MW2 2/15/95, 3/8/95 (avg.)	MW3 2/15/95, 3/8/95 (avg.)
VOC's (µg/L)						
Chlorobenzene	2.7	4	ND	**17.5**	**29**	**10**
SVOCs (µg/L)						
1,4-Dichlorobenzene	4.8	75	ND	ND	3J	ND
4-Methylphenol	12.9	NLE	ND	ND	4J	ND
Naphthalene	8.4	NLE	ND	ND	3J	ND
2-Methylnaphthalene	8.7	NLE	ND	ND	2J	ND
METALS TOTAL (µg/L)						
Aluminum	24	200	121000	**5355 R**	**2061.5**	**1616.5**
Arsenic	1.9	8*	89.3	**8.95**	4.325	3.4
Barium	1.7	2000	699	135	440.5	105.55
Beryllium	0.9	20*	7[1]	0.775	ND	ND
Calcium	10.4	NLE	45400	14150	89350	64550
Cadmium	2.8	4	9.5	ND	2.7	ND
Cobalt	2.3	NLE	18.3	6.75	3.85	2.5
Chromium	2.9	100	191	66 R	22.5	15.25
Copper	1.9	1000	730[1]	5.3	6.575	5.85
Iron	6.4	300	431000	**15900 R**	**61250**	**20450**
Mercury	0.2	2	0.26	ND	0.25	0.195
Potassium	685	NLE	137000	7195	12000	11150
Magnesium	18.3	NLE	62700	8315	11400	5570
Manganese	1.8	50	480[1]	**78.55**	**286.5**	**483.5**
Sodium	30.5	50000	197000[1]	13100	10390	9170
Nickel	10.8	100	187	19.8	ND	ND
Lead	1.1	10*	22.7	4.4	**11.55**	**14.8**
Selenium	1.5	50	29.6	1.9	ND	ND
Vanadium	2.3	NLE	108	21.25	13.65	9.7
Zinc	3.8	5000	233	472	47.35	79.3

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL -Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

[1] - Monmouth County maximum background concentration.

R - Data rejected , URS the Data Validator

However, all five metals, with the exception of iron in MW-2 and manganese in MW-3, were found in concentrations below those determined for both site-specific and Monmouth County background at the Main Post. Although iron was found in samples collected from MW-2 in concentrations greater than the range established in the Monmouth County study, the concentrations were well below the site-specific maximum background concentration established at Main Post. Manganese was found in MW-3 in a concentration only slightly greater than the site-specific and Monmouth County background concentrations. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

Cyanide

Cyanide was not detected in site monitor wells from either sampling round.

4.2.2.6 Surface-Water Sampling Results

Figure 4.2-6 presents the Main Post surface-water and sediment sampling locations. Surface-water samples were collected from two locations at M-2: M2SW-1 and M2SW-2 (Figures 4.2-3 and 4.2-6). M2SW-1 is upgradient of M2SW-2. Both samples were determined to be freshwater, based on conductivity data, salinity data, and field observations. Total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP freshwater criteria and background and are presented in Table 4.2-4.

VOCs

Two VOCs (tetrachloroethene and trichloroethene) were found in concentrations in the unfiltered samples greater than the NJDEP freshwater criteria and background at locations SW-1 and SW-2. Figure 4.2-5 presents the locations of the compounds detected above the established criteria and maximum background.

Table 4.2-4
Fort Monmouth - Main Post
Summary of Detected Compounds in Site Surface Water
Total and Soluble - Site M-2

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA* FRESH WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE - 12/1/1994			
					M2 (Total)		M2 (Soluble)	
					SW-1	SW-2	SW-1	SW-2
VOC's (µg/L)								
1,2-Dichloroethene (total)	4.4	592 (h)	ND	ND	3 J	2 J	NA	NA
Tetrachloroethene (PCE)	4.0	0.388 (hc)	ND	ND	**5 J**	**5 J**	NA	NA
Trichloroethene[1]	2.0	1.09 (hc)	ND	ND	**2 J**	**2 J**	NA	NA
SVOCs (µg/L)								
bis-(2-Ethylhexyl)phthalate	9.7	1.76 (hc)	ND	ND	ND	**4 J**	NA	NA
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	258	263	ND	ND
Barium	2.1	2000 (h)	44.7	39.4	42.7	47	38.2	41.8
Calcium	12	NLE	31600	30900	18000	19400	17700	19000
Cobalt	2.4	NLE	8.1	4.1	4.5	4.8	4.1	ND
Copper	2.4	NLE	3.2	4	3.1	2.9	4.2	4.9
Iron	4.7	NLE	6210	405	2760	3020	493	681
Lead	1.6	5 (h)	10	ND	3.1	2.3	**7.6**	ND
Magnesium	38.2	NLE	5440	5120	2930	2860	2860	3070
Manganese	2.0	NLE	113	98.6	89.9	97.6	86.1	92.8
Nickel	12.8	516 (h)	22.9	16.1	ND	ND	14.7	ND
Potassium	821	NLE	5060	4280	2840	2860	2860	3180
Sodium	15.4	NLE	26700	26200	25400	27500	25200	26900
Zinc	2.8	NLE	35.1	23.8	29.1	19.4	19.4	21.1

[1] - Same compound as listed by NJDEP tetrachloroethylene.

* - NJDEP Surface Water Quality Standards (1993).

h -Non carcinogen effect-based human health criteria as a 30 day average.

hc - Carcinogen effect-based human health criteria as 70 year average.

ND - Indicates that the compound was not detected at the noted quantification limit.

J - Indicates that the concentration value was estimated due to detection at or near the quantification limit.

NLE - No Level Established.

NA - Not Analyzed.

Compounds detected above NJDEP Surface Water Criteria are noted by bold numbers.

SVOCs

Bis(2-ethylhexyl) phthalate was the only SVOC detected in site M-2 surface water. In addition, the compound was found in a concentration greater than the NJDEP freshwater criteria and background at location SW-2. Bis(2-ethylhexyl) phthalate is a common laboratory contaminant and can be attributed to sampling or laboratory contamination.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface water.

Metals

Of the 13 metals detected in site surface water, only one (lead) was found in a concentration greater than the NJDEP freshwater criteria and maximum background. The compound exceeded the criteria in the filtered sample, but was not detected above criteria in the unfiltered sample (Figure 4.2-5).

4.2.2.7 Tidal Monitoring

Appendix E presents hydrographs of the comparisons between the monitor wells (MW-1 though MW-3) and the stilling wells (1 and 2) during the tidal monitoring tests.

Tidal fluctuations in Mill Creek and in site monitor wells were monitored at upstream tidal monitoring station (stilling well-2), downstream tidal monitoring station (stilling well-1), and site monitor wells (MW-1 through MW-3) (Figure 4.2-3). (Hydrographs are presented in Appendix E.) The tidal monitoring stations are approximately 2,400 ft apart. Changes in creek levels at the upstream location were compared to changes in water levels measured at well MW-2, and changes in creek levels at the downstream location were compared to changes in water levels measured at well MW-3. Wells MW-2 and MW-3 are approximately 150 feet from the creek.

Tidal fluctuations in the creek were also compared to water levels measured at well MW-1, approximately 1,100 feet from the creek. Monitor wells were screened below sea level.

The tidal monitoring data collected at Landfill 2 (M-2) suggest that the stream is influenced by incoming tides. Peaks representing the high tides at stilling well-1 and stilling well-2 are observed, but low tide peaks are not apparent because the elevation of the stream bed at Landfill 2 (M-2) is higher than the elevation of sea level at low tide. The streambed elevation is 1.37 feet above mean sea level (ft msl) at stilling well-1 and 1.28 ft msl at stilling well-2. The maximum change in creek stage at Landfill 2 (M-2) was 1.2 feet, and the maximum change in water level in the monitor wells was 0.2 foot.

Data collected from well MW-1 were useful as baseline data during the tidal monitoring study at Landfill 2 (M-2). The data suggest that there is no apparent tidal effect on the water levels at well MW-1 and creek levels measured at stilling well-1 or -2. Well MW-1 is approximately 1,100 feet from the creek and is too distant to be influenced by changing creek stage. Water levels in the water-bearing unit and creek levels declined by about 0.1 foot over the course of the monitoring study in March 1995.

The water levels recorded at MW-2 and MW-3 appear to be tidally influenced (see Appendix E). Water levels measured at both wells respond almost instantaneously to rising creek levels. The peak in water levels measured at both wells occurs approximately 20 to 40 minutes after the peak in creek stage. At both monitoring locations (stilling well-1, MW-2 and stilling well-2, MW-3) water-level peaks at each well are approximately 15% to 20% of the tidal peak in creek levels.

4.2.2.7.1 Conductivity and Salinity Results

Conductivity and salinity were measured in surface-water and groundwater samples at Landfill 2 (M-2) in January and March 1995, and are presented in tables in Appendix E. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site. High conductivity and salinity readings indicate salty or brackish water, whereas low readings indicate freshwater.

The data indicate the presence of freshwater in the creek at Landfill 2 (M-2). Specific conductance measured in the creek at Landfill 2 (M-2) is consistently less than 240 μmhos. In addition, salinity measured in the creek at Landfill 2 (M-2) is consistently less than 0.2 parts per thousand (ppth). The results are consistent with the higher streambed elevation at Landfill 2 (M-2) when compared to Landfill 8 (M-8) and Landfills 12 and 14 (M-12, M-14).

Groundwater sampled from monitor wells MW-1 and MW-3 generally exhibits low conductivity and zero salinity, except well MW-2 at Landfill 2 (M-2). The moderate to high specific conductance at well MW-2 at Landfill 2 (M-2) is unexplained, but is likely caused by saltwater intrusion from Parkers Creek.

4.2.2.8 Recommendations

The surface-water sampling results indicate that two VOCs were detected at the two surface-water locations at concentrations greater than NJDEP surface-water criteria, and above maximum background concentrations. In addition, soluble lead was detected at a concentration greater than NJDEP criteria and the maximum background concentrations. Because the site formerly had an NJPDES permit (permit No. 0057274), surface water has been sampled since 1986. The results from the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Chlorobenzene was detected in the groundwater at concentrations exceeding the NJDEP GWQC and background in both downgradient monitor wells from both sampling rounds and in the upgradient well during one sampling round.

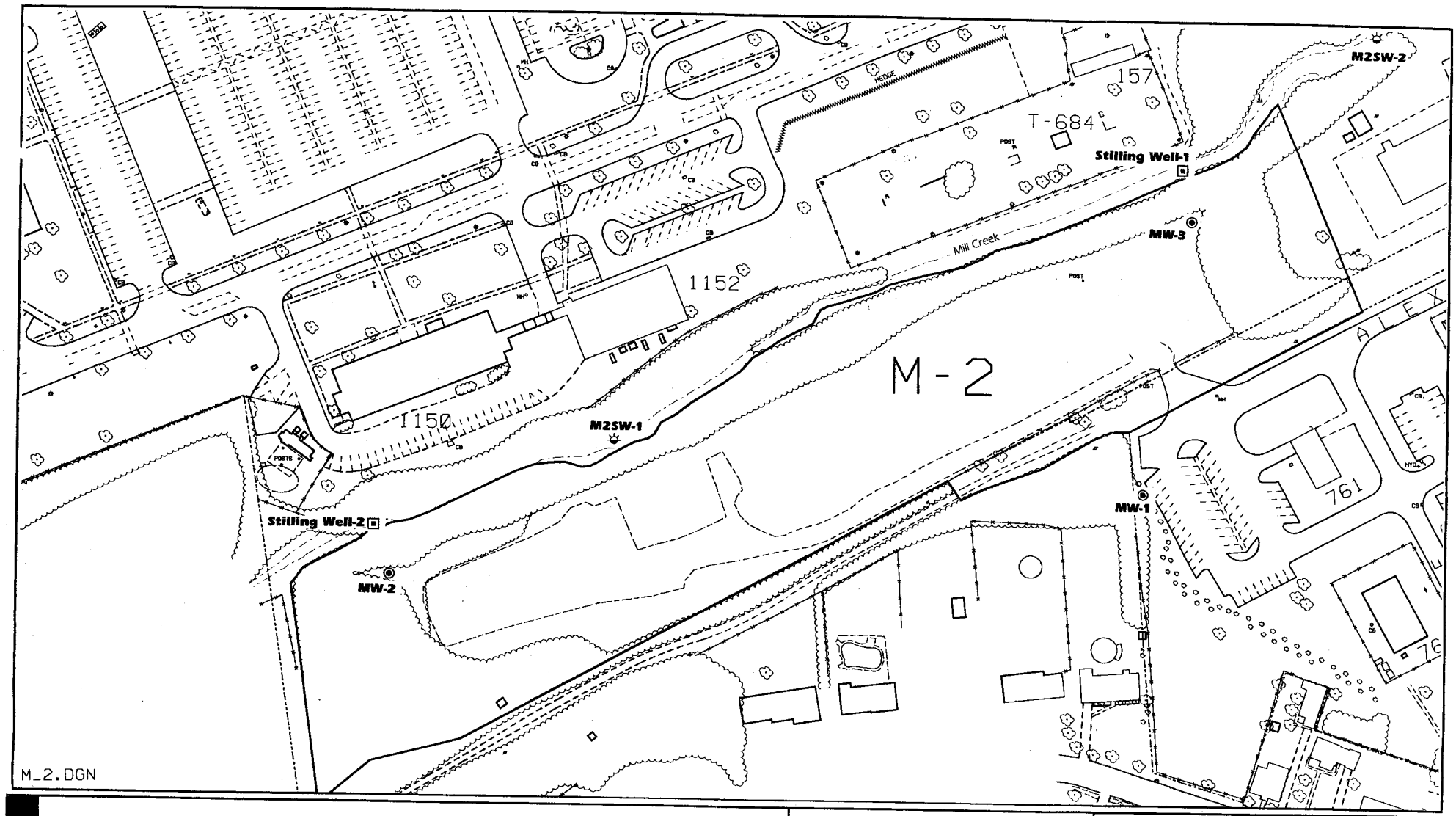
The results of the tidal monitoring indicate that there is no apparent relationship between the changing creek levels and the water levels in upgradient monitor well MW-1; however, a direct relationship was observed between changing creek levels and the water levels in downgradient monitor wells MW-2 and MW-3. Conductivity and salinity results indicate the presence of freshwater in the creek at site M-2. Freshwater was indicated at monitor wells MW-1 and

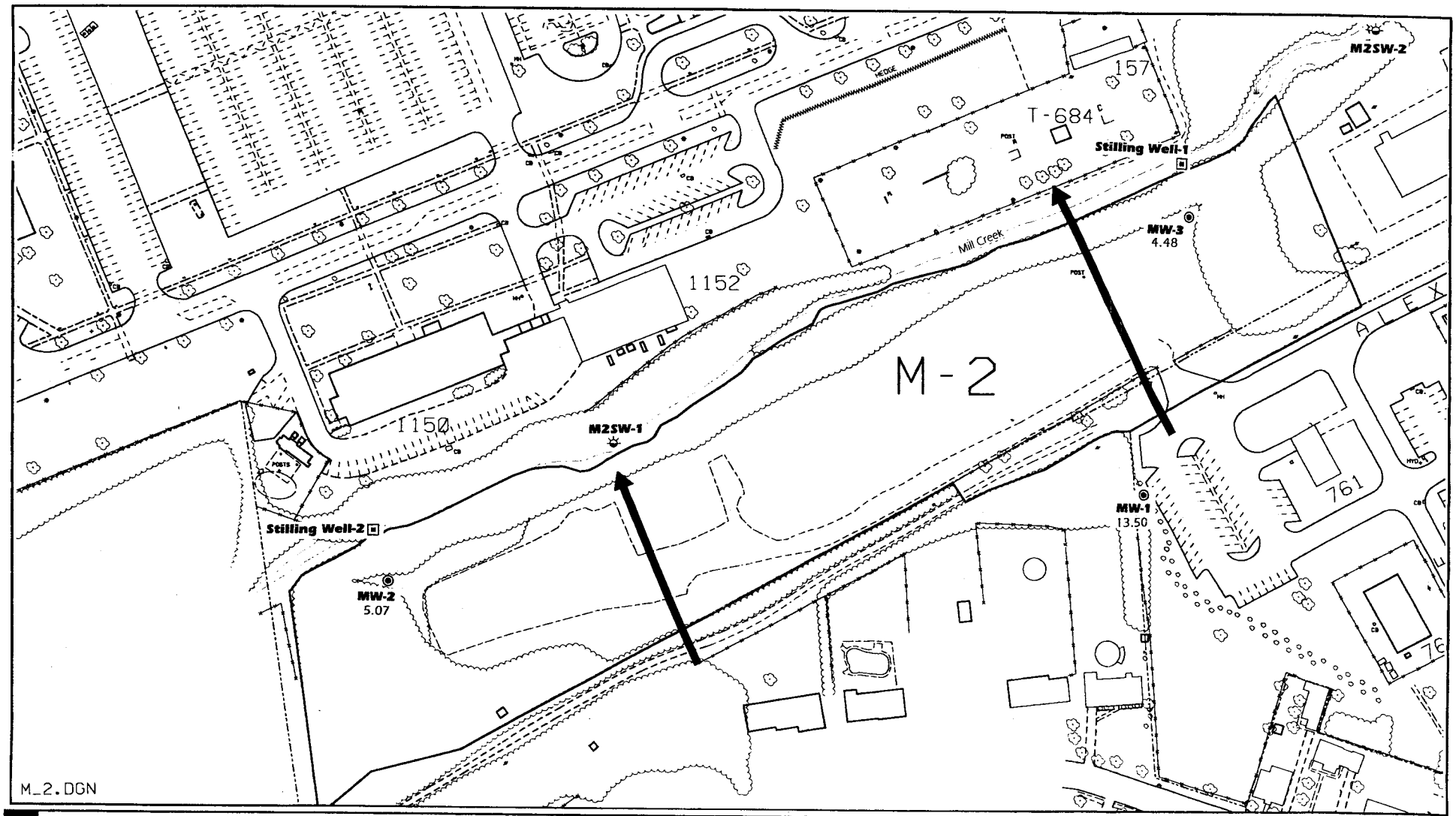
MW-3. A moderate to high specific conductance was measured at monitor well MW-2, which is unexplained.

Although groundwater sample results at site M-2 exceeded NJDEP criteria for one VOC, and surface-water results were slightly exceeded by two VOCs, immediate remedial action is not required for several reasons. Immediate remedial action is usually based on an immediate threat to human health. At this site, shallow groundwater flows toward and discharges to Mill Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater at or downgradient of the site. Although there is slight VOC contamination in Mill Creek, there is no use of this water for human consumption. In fact, Mill Creek becomes saline immediately downgradient of site M-2. Therefore, the groundwater and surface waters are not used for drinking water.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future. Although downgradient surface-water samples were not taken during this round, previous sampling at site M-8 indicated that NJDEP surface-water criteria were not exceeded for VOCs. Therefore, the only portion of Mill Creek for which NJDEP surface-water criteria are exceeded is the portion between sites M-2 and M-8. All of this portion is on Fort Monmouth property and, therefore, access to it is restricted.

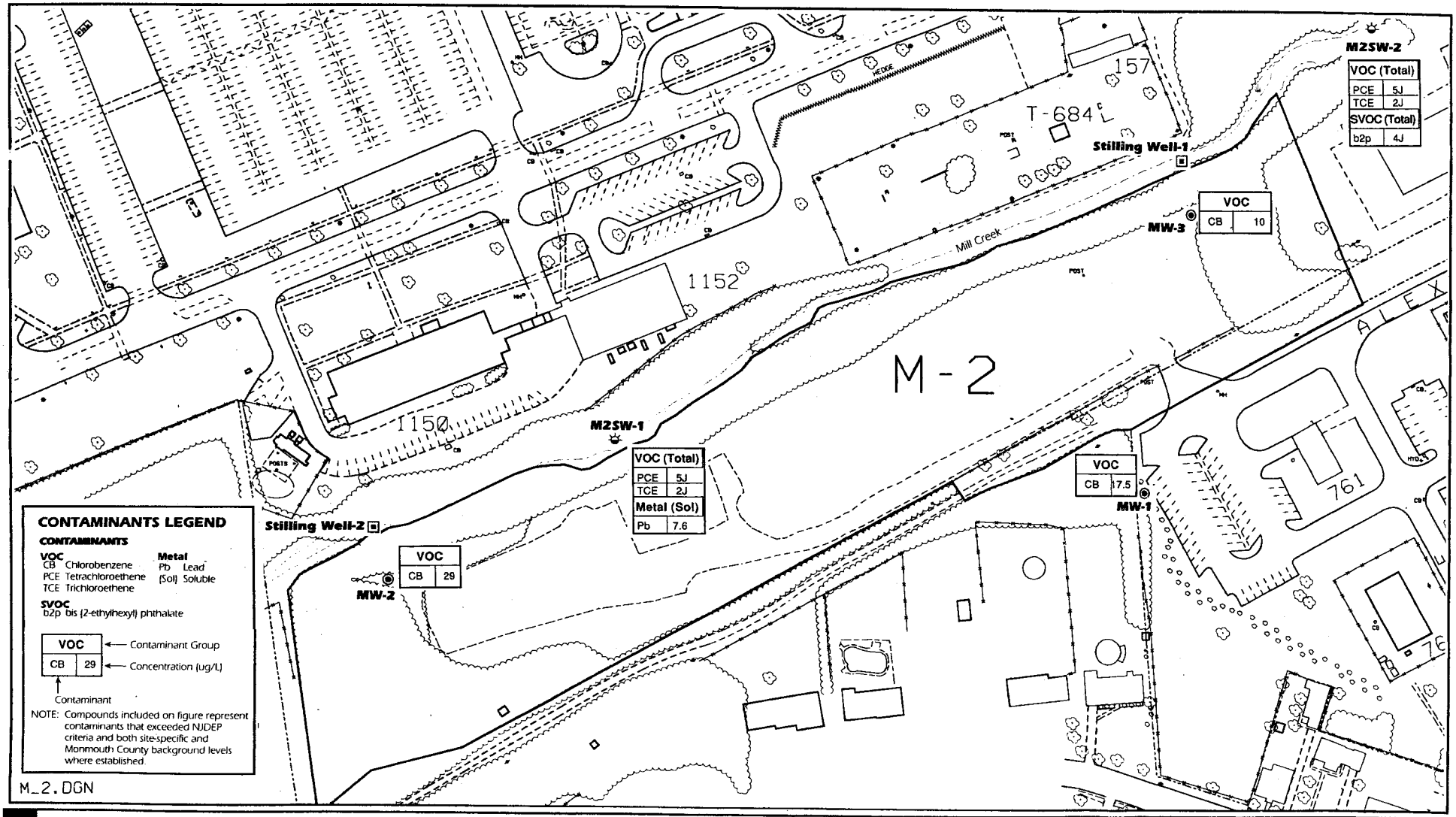
Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, the Fort Monmouth Directorate of Public Works (DPW) proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.


M2SW-2
Stilling Well-1
MW-3
Mill Creek
M-2
M2SW-1
MW-1
Stilling Well-2
MW-2
M_2.DGN
LEGEND
Monitor Well
Existing Surface Water Sampling Location
Stilling Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3183
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-3
LANDFILL 2 (M-2)
SAMPLING LOCATIONS



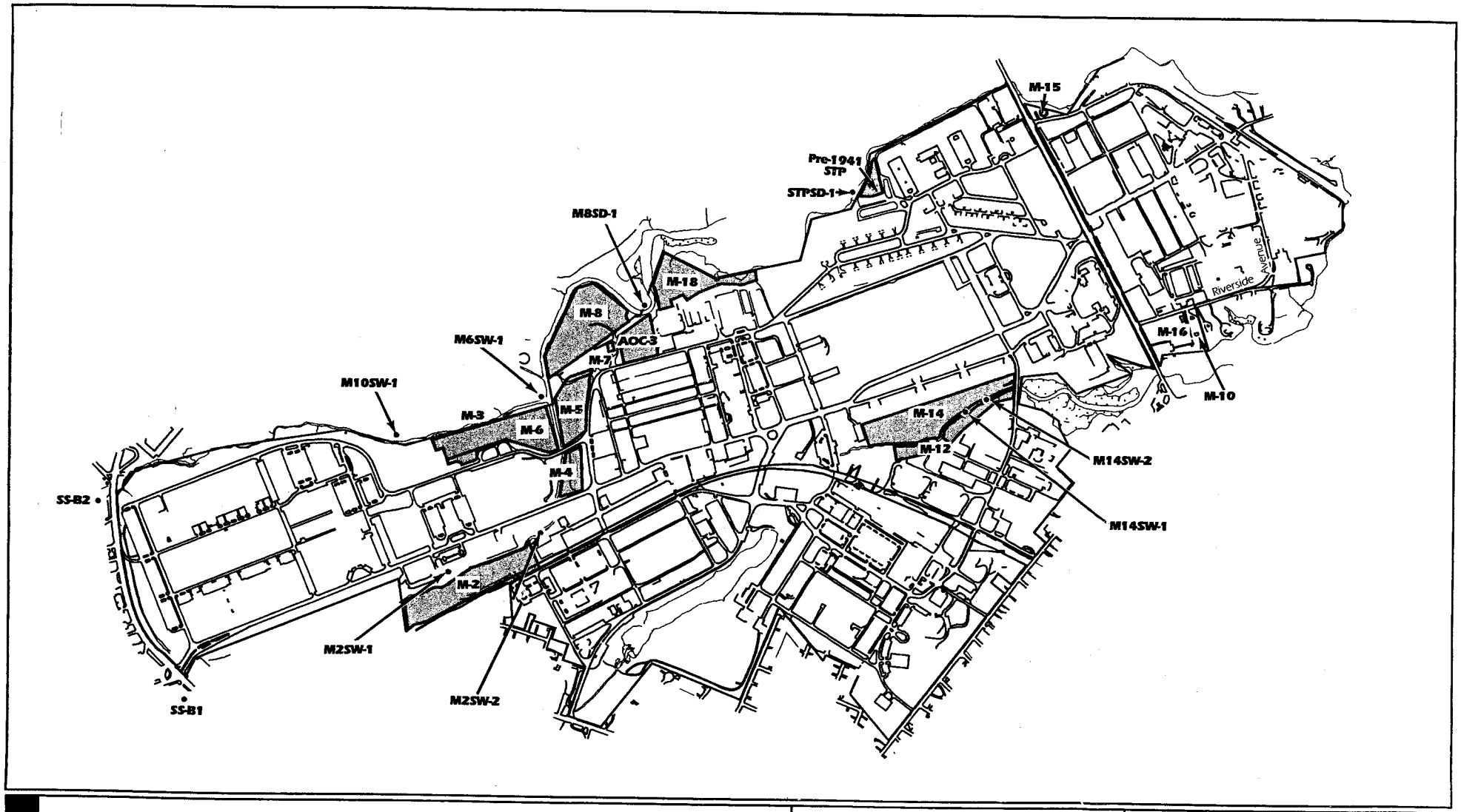
Fort Monmouth, Main Post

FIGURE 4.2-4
LANDFILL 2 (M-2)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-5
DISTRIBUTION OF CONTAMINANTS IN SITE GROUNDWATER AND SURFACE WATER SAMPLES


M-15
Pre-1941 STP
STPSD-1
M8SD-1
M-18
M-8
AOC-3
M-7
M6SW-1
M10SW-1
M-3
M-5
M-6
M-4
SS-B2
SS-B1
M-2
M2SW-1
M2SW-2
Riverside Avenue
M-16
M-10
M-14
M-12
M14SW-2
M14SW-1
LEGEND
Road (paved)
Building
Site
Lake
Marshy Area
Surface Water and/or Sediment Location
SW = Surface Water
SD = Sediment
Note: SS-B1 and SS-B2 are background locations. Samples for both surface water and sediment were collected.
0
800
1600
SCALE IN FEET
95P3194
9/28/95
Fort Monmouth, Main Post
FIGURE 4.2-6
MAIN POST SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

4.2.3 Landfill 3 (M-3)

4.2.3.1 Site Location

Landfill 3 (M-3) is located between North Drive and Lafetra Creek in the west-central part of the Main Post. The actual boundaries of the landfill are not clear, but have been approximated in Figure 4.2-7. The approximate area of site M-3 is 257,890 ft^2 (5.9 acres). Burning Area M-6, which is discussed later, is located within Landfill 3.

4.2.3.2 Site History

According to the IA, Landfill 3 was in use between 1959 and 1964, and was used for general purpose disposal of domestic and industrial wastes. The 1969 aerial photograph shows that, with the exception of a few areas with vehicle tracks, this area was covered with vegetation. At present, the surface is hummocky and covered with grass.

Landfill 3 (M-3) most likely contained materials similar to those generally found in other Main Post landfills. According to long-term Fort Monmouth employees, this landfill also contains wood and coal ash from furnaces and boilers.

As part of an NJPDES permit (permit No. 0057274), surface-water samples have been taken at two locations in Lafetra Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). One VOC (tetrachloroethene) was detected in concentrations above the NJDEP surface-water criteria.

4.2.3.3 Sampling Effort

Surface geophysics surveys were conducted to confirm the location and investigate the extent of the former landfill. First, a magnetometer survey, including both vertical magnetic gradient and total magnetic field, was conducted. After completion of the magnetometer survey, GPR was used in accessible areas to provide additional definition of landfill boundaries.

The source of the HHCs detected in surface-water samples from a previous investigation could not be determined (WESTON, 1993). Therefore, surface-water locations M6SW-1 and M10SW-1 on Lafetra Creek were sampled (Figure 4.2-6). In addition, three monitor well locations (MW-4 through MW-6), as shown in Figure 4.2-7, were installed. The location of monitor well M-6 was slightly adjusted based on the geophysical interpretations. The well was repositioned to monitor groundwater quality downgradient of the exposed drum area. The monitor wells were sampled twice and surface-water locations were sampled once for TCL +30 parameters, TAL metals, and cyanide.

4.2.3.4 Geophysical Results

The magnetometer survey performed at M-3 indicated buried ferrous material, as depicted in Figures 4.2-8 and 4.2-9, within the suspected boundary of the landfill. The total magnetic field contour plot (Figure 4.2-8) shows background readings of approximately 54,000 nT and is represented by the green contour interval. High and low excursions from this value, represented by the violet and blue contour intervals, respectively, reveal anomalous magnetic signatures indicative of buried ferrous objects. The boundary between the background and anomalous magnetic readings is interpreted as the landfill boundary. Cultural features along the north side of the site include buried and overhead power lines and a chainlink fence. These features limited the magnetic data acquisition and anomalous magnetic influences that could be seen on the magnetic gradient plot (shown in Figure 4.2-9). The northern edge of the plot shows these cultural anomalies as a "low" reading from background, and is represented by the blue contour interval.

The GPR survey performed at M-3 confirmed the potential landfill boundary and expanded the geophysical survey underneath the overhead power lines and up to the northern fenceline. The GPR system is not heavily influenced by these types of cultural features like magnetometer methods. A typical radar profile, such as along the 600E traverse, reveals "normal" horizontal reflectors, indicative of nonfill areas, from 100S to approximately 100N (Figure 4.2-9A). Continuing from 65N to 160N the radar waveform becomes very chaotic in nature. This chaotic waveform is typical of buried waste material.

Hyperbolic radar signatures, typical of buried drums, were observed in the vicinity of grid coordinate 160N/800E. This was confirmed visually by observing a partially exposed drum at the surface at approximately 160N/800E. As shown on the radar profile in Figure 4.2-9B, the hyperbolic waveforms are found within chaotic radar reflectors. With the exception of these hyperbolic radar signatures, the geophysical surveys indicate that the waste material is within the suspected landfill boundary. Monitor wells have been installed in appropriate locations to monitor groundwater quality upgradient and downgradient of the site.

4.2.3.5 Hydrogeologic Interpretation

Lithologic logs from MW-5 and MW-6 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the filled materials observed in both borings consisted of a black slag material with camera film, rebar, and paper debris. Natural quartz sand, gravel, silt, and clay were intermixed with the manmade materials. MW-4 is located upgradient of the fill locations and consists of tight olive-green silty fine-grained sand with a clay matrix.

Groundwater saturation was observed in the borehole during drilling activities between 8 and 10 ft bgs. Monitor wells were screened across the water table, and total depths varied from approximately 23, 16, and 15 ft bgs in MW-4, MW-5, and MW-6, respectively. Water-level elevation data measured on 6 March 1995, indicate that local groundwater flow is to the north in the direction of Lafetra Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor wells MW-5 and MW-6 are downgradient of the site M-3 area.

4.2.3.6 Groundwater Sampling Results

Monitor wells at site M-3 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-5 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to subsequent site-specific maximum background and/or Monmouth County background

Table 4.2-5
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-3

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW4 2/16/95, 3/8/95 (avg.)	MW5 2/16/95, 3/9/95 (avg.)	MW6 2/16/95, 3/9/95 (avg.)
VOC's (µg/L)						
Chlorobenzene	2.7	4	ND	ND	**5 J**	ND
Toluene	2.7	1000	ND	ND	4.5 J	4 J
SVOCs (µg/L)						
4-Methylphenol	12.9	NLE	ND	ND	4 J	ND
Naphthalene	8.4	NLE	ND	ND	3 J	ND
2-Methylnaphthalene	8.7	NLE	ND	ND	1.5 J	ND
Acenaphthene	6.0	400	ND	ND	2 J	ND
Fluorene	6.3	300	ND	ND	1.5 J	ND
Phenanthrene	5.0	NLE	ND	ND	3 J	ND
Anthracene	4.6	2000	ND	ND	3 J	ND
Pyrene	5.4	200	ND	ND	3 J	ND
bis-(2-Ethylhexyl)phthalate	9.7	30*	100B	ND	ND	4 J
Carbazol	4.4	NLE	ND	ND	3 J	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**705**	**2494**	**474**
Arsenic	1.9	8*	89.3	1.425	2.625	ND
Barium	1.7	2000	699	47.4	584	124
Calcium	10.4	NLE	45400	33750	95600	122500
Cadmium	2.8	4	9.5	ND	2.825	ND
Cobalt	3.0	NLE	18.3	ND	2.075	ND
Chromium	2.9	100	191	9.05	20.1	7.75
Copper	1.9	1000	730[1]	2	22.7	ND
Iron	6.4	300	431000	**2965**	**89850**	**20500**
Mercury	0.2	2	0.26	ND	0.365	ND
Potassium	685	NLE	137000	7825	13300	10300
Magnesium	18.3	NLE	62700	4590	17950	28800
Manganese	1.8	50	480[1]	34.3	**1115**	**686**
Sodium	30.5	50000	197000[1]	13150	15800	34300
Nickel	10.8	100	187	4	ND	ND
Lead	1.6	10*	22.7	ND	**78.3**	**21.2**
Vanadium	2.3	NLE	108	3.3	12	3.625
Zinc	3.8	5000	233	17.85	234.05	62.05

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit was used as the NJDEP groundwater quality criteria.
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
[1] - Monmouth County maximum background concentration.

concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC, and above both site-specific and Monmouth County background concentrations established at the Main Post.

VOCs

Although chlorobenzene was detected below the laboratory quantitation limit but above the method detection limit in a sample collected at MW-5 from the March sampling round, the value slightly exceeds the NJDEP GWQC. As discussed in Subsection 4.1, the analytical results that are reported with a "J" are estimated values that are below the quantitation limit but above the method detection limit.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The levels of compounds that could be estimated (below the laboratory quantitation limit) were well below the NJDEP GWQC, where established.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-5, of the 18 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC. However, aluminum and iron were found in concentrations below those determined for site-specific and/or Monmouth County background. Manganese was detected (at MW-5 and MW-6) in concentrations greater than the site-specific and Monmouth County background levels. In addition, lead was found in concentrations greater than those determined for maximum background in MW-5 (Figure 4.2-11), but below background in MW-6. However, lead was not

detected in the filtered sample above NJDEP GWQC. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern. The relatively high sodium concentrations in groundwater samples from site M-3 are from saltwater intrusion from the Parkers Creek estuary via Lafetra Creek.

Cyanide

Cyanide was analyzed for but not detected in the site monitor wells from either sampling round.

4.2.3.7 Surface-Water Sampling Results

Two surface-water samples were collected at M-3: M10SW-1 and M6SW-1 (Figures 4.2-6 and 4.2-7). M10SW-1 is upgradient of M-3 and M6SW-1 is downgradient. Both samples were determined to be saltwater, based on conductivity results and field observations. Total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP saltwater criteria and background and are presented in Table 4.2-6.

VOCs

VOCs were analyzed for but were not detected in site surface-water samples.

SVOCs

SVOCs were analyzed for but were not detected in site surface-water samples.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface-water samples.

Table 4.2-6
Summary of Detected Compounds in Site Surface Water
Total and Soluble - Site M-3

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA[a] SALINE WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS (µg/L) 12/1/94			
					MP6SW-1 (Total)	MP6SW-1 (Soluble)	M10SW-1 (Total)	M10SW-1 (Soluble)
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	179	ND	69	ND
Barium	2.1	NLE	44.7	39.4	33.3	27.7	34.6	29.1
Calcium	12	NLE	31600	30900	32100	30400	30000	29400
Copper	2.4	NLE	32	4	ND	4.3	ND	3.9
Iron	4.7	NLE	6210	405	2940	465	2180	355
Lead	1.6	NLE	10	ND	4.8	ND	1.6	ND
Magnesium	38.2	NLE	5440	5120	9790	9030	5340	5160
Manganese	2.0	100 (h)	113	98.6	**102**	94.3	98.7	96.2
Potassium	821	NLE	5060	4280	6260	5840	4320	4280
Selenium	0.9	NLE	ND	ND	1.1	ND	ND	ND
Sodium	15.4	NLE	26700	26200	56500	52300	18200	17700
Zinc	2.8	NLE	35.1	23.8	12.2	7.8	16	7.9

[a] - NJDEP Surface Water Quality Standards (1993).

h -Non carcinogen effect-based human health criteria as a 30 day average.

ND - Indicates that the compound was not detected at the noted quantification limit.

NLE - No Level Established

Compounds dectected above NJDEP Surface Water Criteria are bolded.

Metals

As indicated in Table 4.2-6, of the 12 metals detected in site surface water, only one (manganese, unfiltered) was found in a concentration slightly exceeding the NJDEP surface-water criteria (saline) in sample MP6SW1. However, the concentration of manganese was detected below the maximum background levels established at the Main Post for total metals. In addition, manganese was found in a concentration below the established criteria and background in the filtered sample.

As presented in Table 4.2-6 (soluble), no soluble concentrations of contaminants detected in M6SW-1 surface-water were greater than NJDEP surface-water criteria.

None of the total or soluble concentrations of chemicals detected in M10SW-1 surface water exceeded NJDEP surface-water guidance (Table 4.2-6 total and soluble).

4.2.3.8 Recommendations

The geophysical surveys indicate that the extent of the identified waste material is within the suspected boundaries of the landfill and the monitor wells have been installed in appropriate locations to monitor shallow groundwater quality upgradient and downgradient of the site. In an isolated area of the site the GPR results indicated hyperbolic radar signatures typical of a buried drum or drums. A partially exposed drum was also observed at this location.

Groundwater quality results indicate that chlorobenzene was detected in one downgradient well below laboratory quantitation limits, but just above NJDEP GWQC and background from one sampling round. Lead was also detected at levels above NJDEP GWQC and background.

The surface-water quality results indicate that no organic or inorganic concentrations exceeded both NJDEP surface-water criteria and the maximum background concentration. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. The results from

the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

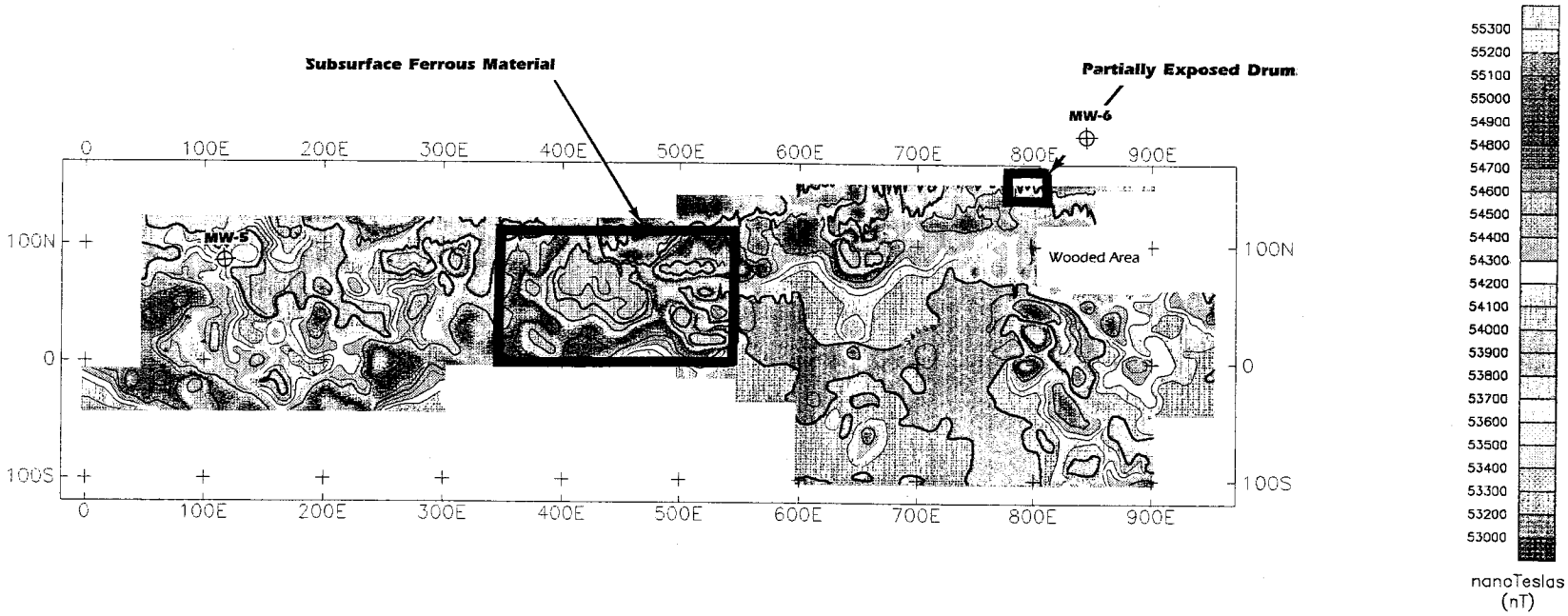
Although NJDEP groundwater criteria were exceeded for one VOC, immediate remedial action is not required for several reasons. First, the measured value for the VOC was below the quantitation limit and just slightly above the GWQC. In addition, the groundwater flows toward Lafetra Creek, and since the water table is higher than the creek bed and groundwater flow tends to follow surface topography, the shallow groundwater probably flows into Lafetra Creek. There are no uses of groundwater between the source and Lafetra Creek. Surface-water samples did not exceed NJDEP surface-water criteria. Therefore, there is no immediate threat to human health.

In addition, because surface-water sampling has been performed at this site since 1986, and the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be the targeted for the monitoring program.

The partially exposed drum will be excavated. The area immediately around and under the drum will be investigated for additional drums. Any excavated drums will be examined to determine if hazardous materials were present or still exist. The drum and the excavation will be monitored with a photoionization detector (PID). NJDEP will be requested to send a representative to

monitor the excavation. If there is no indication that the drum contained, or still contains, hazardous materials and if elevated readings are not observed on the PID, the excavation will be backfilled and no further action will be taken. If contamination is identified, additional sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993).



LEGEND

Monitor Well

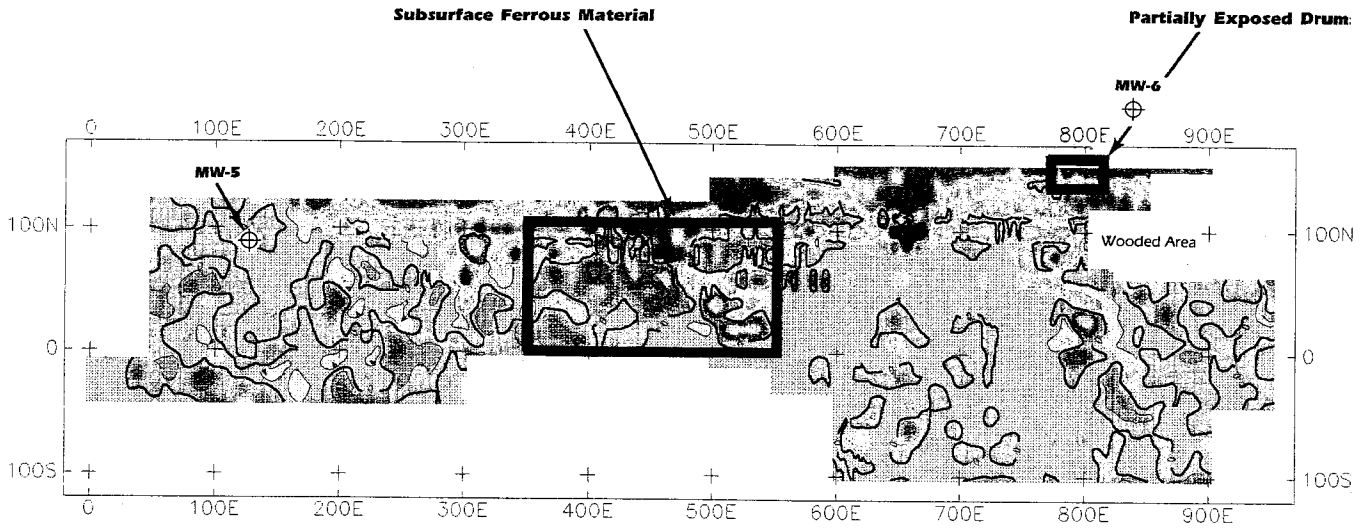
0 50 100 150 200

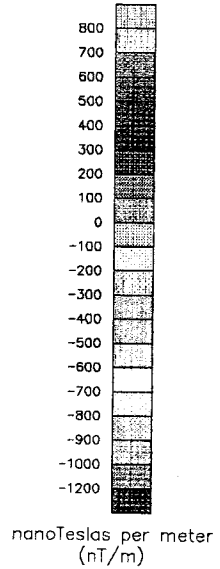
SCALE IN FEET

Fort Monmouth, Main Post Site M-3

FIGURE 4.2-8
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-3

95P-3233 6/26/95





LEGEND

Monitor Well

0 50 100 150 200
SCALE IN FEET

Fort Monmouth, Main Post Site M-3

FIGURE 4.2-9
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-3

95P-3234 6/27/95

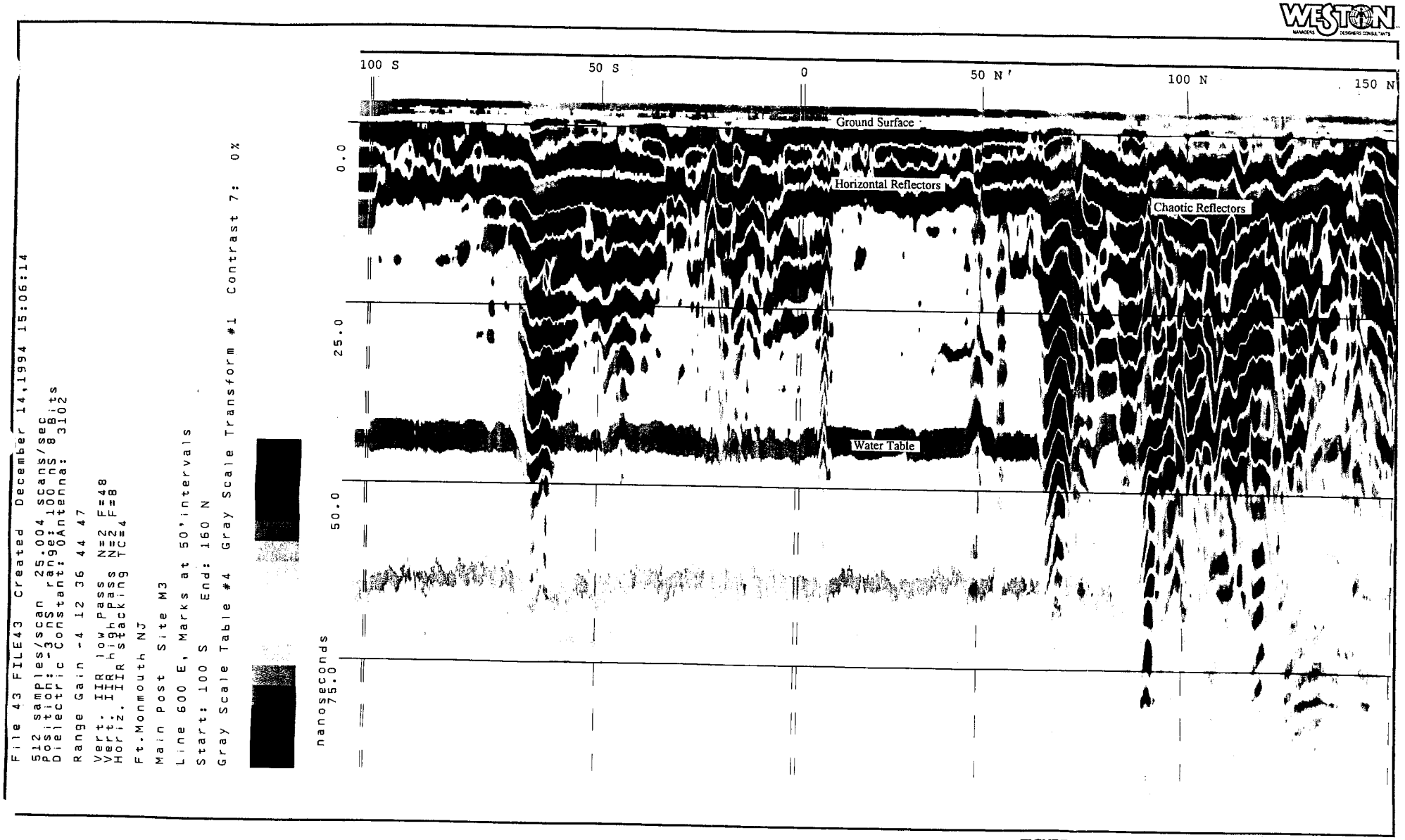


FIGURE 4.2-9A REPRESENTATIVE RADAR PROFILE DEPICTING LANDFILL BOUNDARY AT SITE M-3

File 12 FILE12 Created December 13,1994 17:27:44

512 samples/scan 25.004 scans/sec
Position: 0 nS range: 100 nS 8 Bits
Dielectric Constant: 0Antenna: 3102

Range Gain -4 12 36 44 47

Vert. IIR low pass N=2 F=48
Vert. IIR high pass N=2 F=8
Horiz. IIR stacking TC=4

Ft.Monmouth NJ

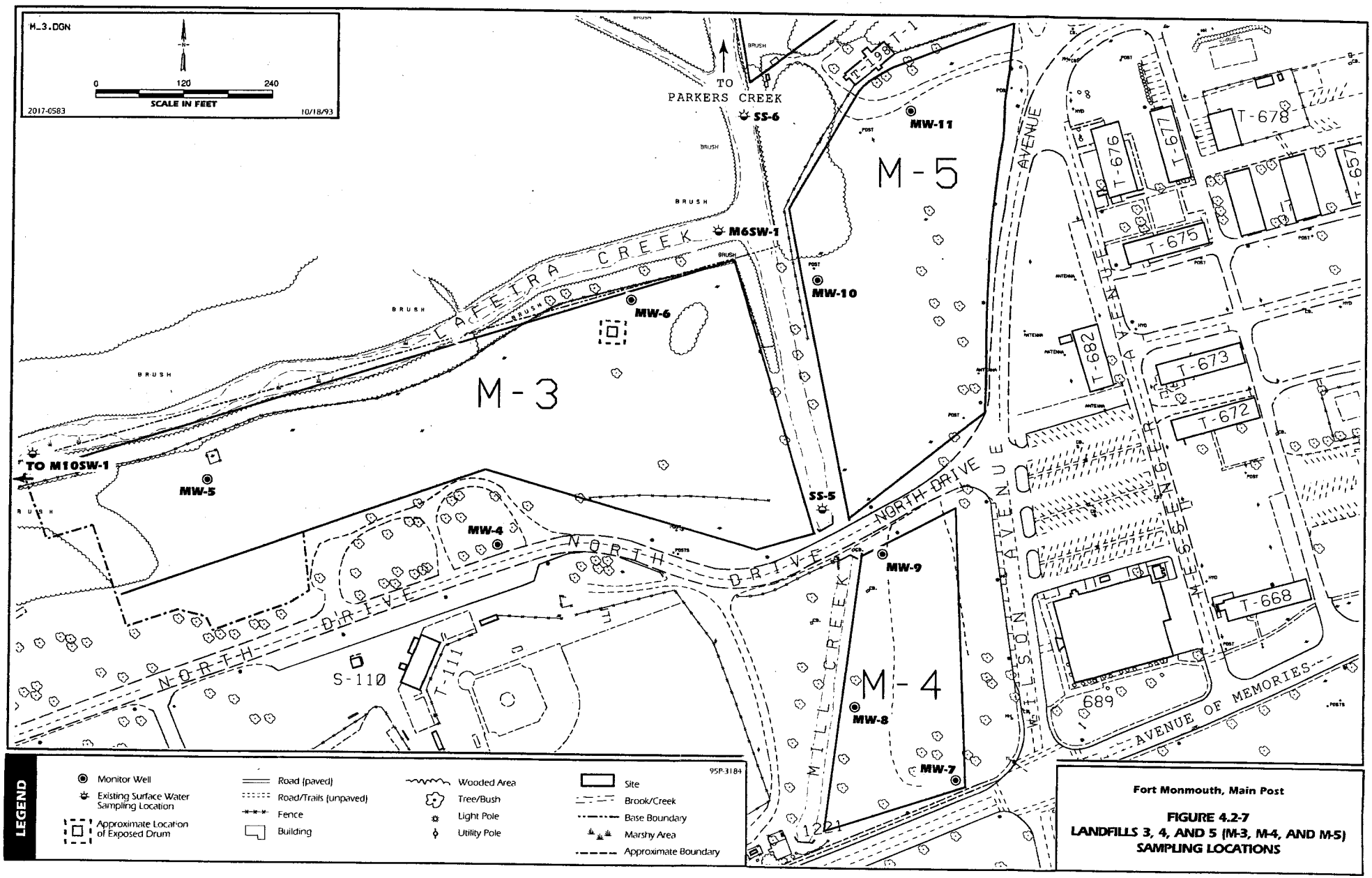
Main Post Site M3

Line 160 N, Marks at 50' intervals

Start: 750 E End: 850 E REPEAT

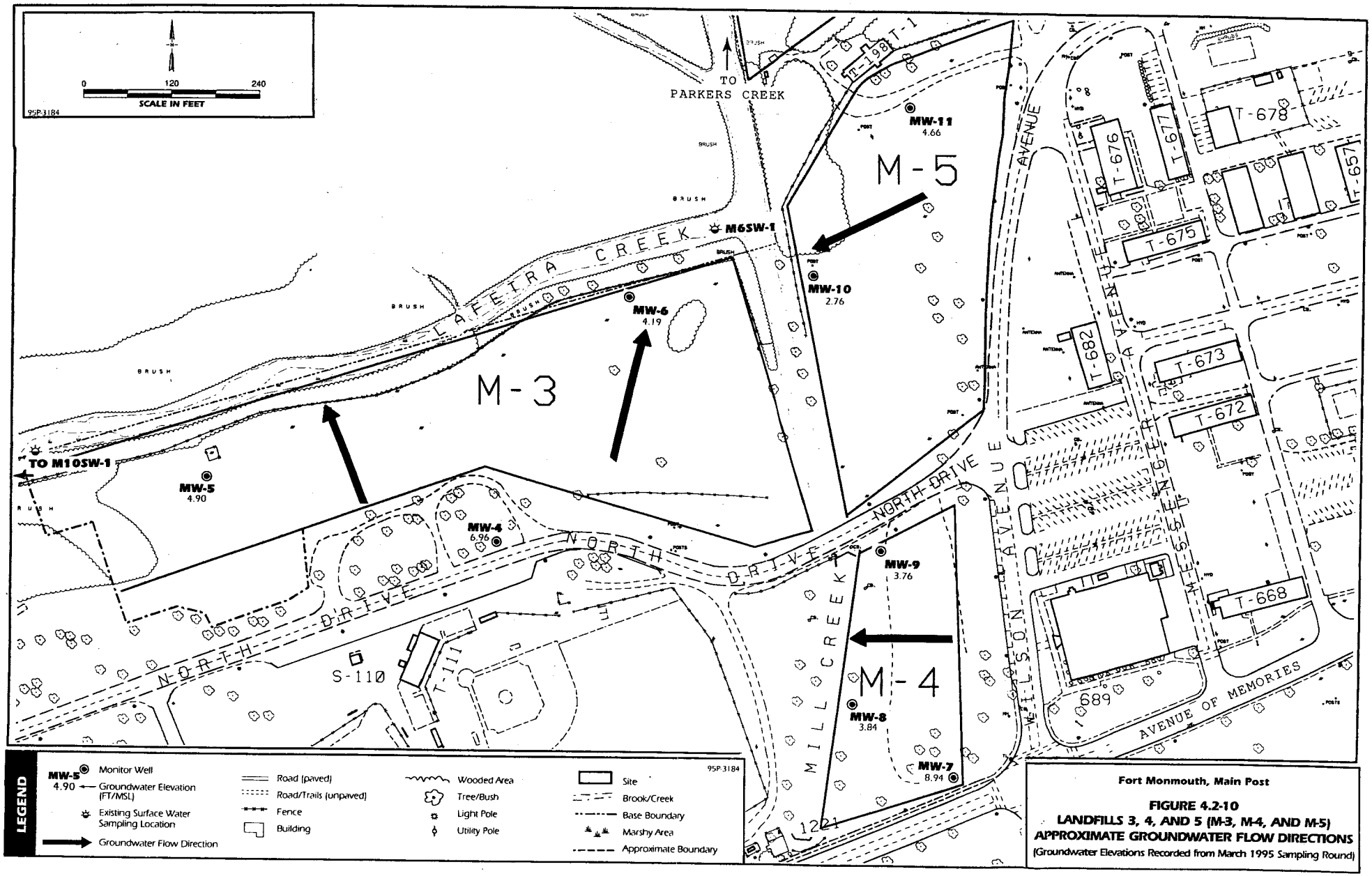
Gray Scale Table #4 Gray Scale Transform #1 Contrast 7: 0%

FIGURE 4.2-9B RADAR PROFILE SHOWING SURFACE DRUM AND HYPERBOLIC RADAR SIGNATURES AT SITE M-3



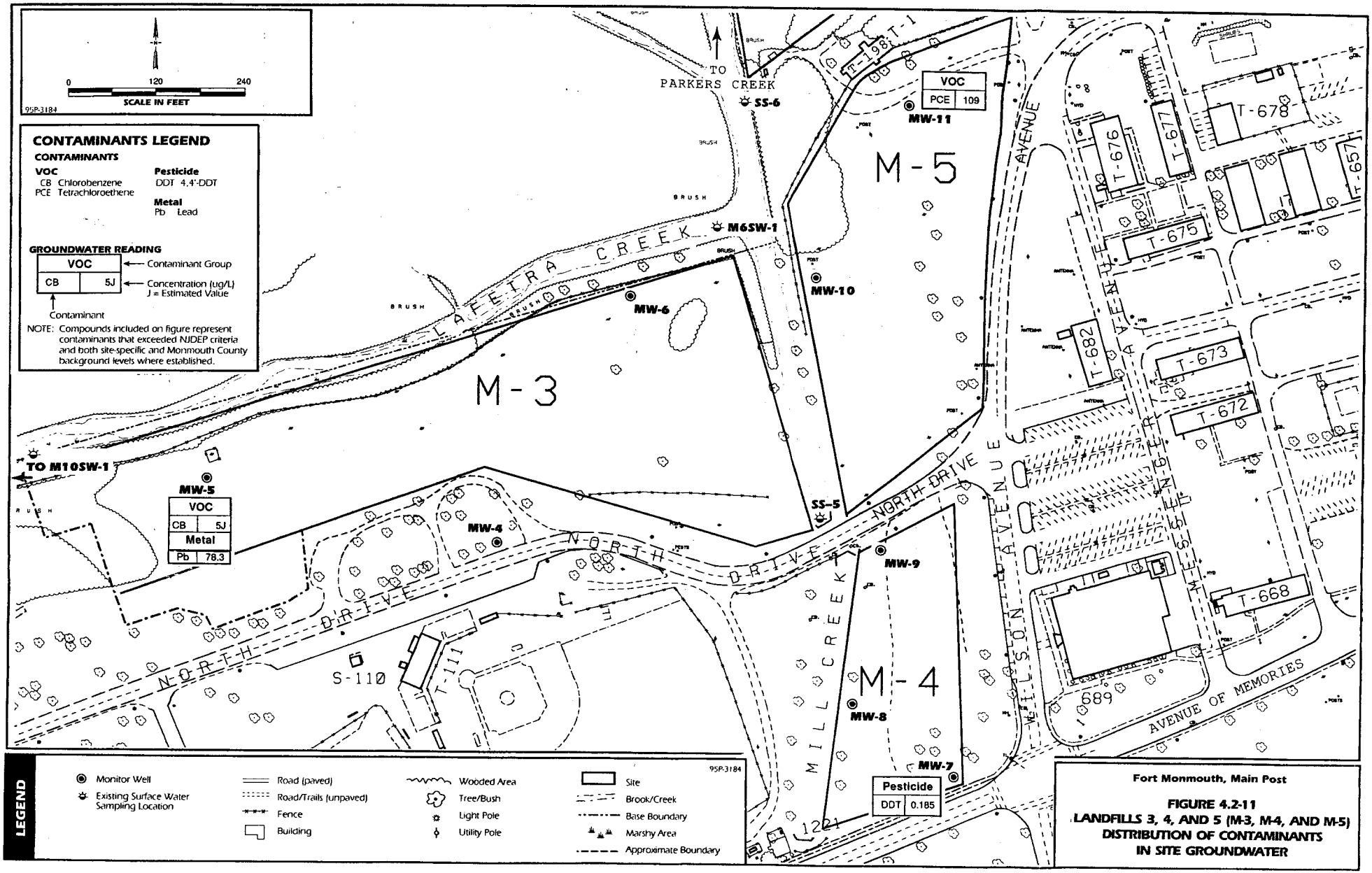
Fort Monmouth, Main Post

FIGURE 4.2-7
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
SAMPLING LOCATIONS



Fort Monmouth, Main Post

FIGURE 4.2-10
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-11
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
DISTRIBUTION OF CONTAMINANTS IN SITE GROUNDWATER

Site M-4

4.2.4 Landfill 4 (M-4)

4.2.4.1 Site Location

Landfill 4 (M-4) is located in the area bounded by the Avenue of Memories to the south, North Drive to the north, Mill Creek to the west, and Wilson Avenue to the east (Figure 4.2-7). The approximate area of site M-4 is 61,800 ft^2 (1.4 acres).

4.2.4.2 Site History

Landfill 4 was used in 1956 for the disposal of building demolition debris. The 1940 aerial photograph shows a swamp at this location. In the latter part of 1955 and during 1956, 72 World War II buildings were demolished on Main Post (*Concise History; History and Place Names*). Potential contaminants associated with demolition debris include lead from paints and piping and asbestos. At present, the surface is flat and grass covered. There are trees in the southeast corner.

As part of an NJPDES permit, surface-water samples have been taken upstream and downstream of this site on Mill Creek. The results are discussed in Subsection 4.2.2 (site M-2) and 4.2.5 (site M-5).

4.2.4.3 Sampling Effort

Three shallow monitor wells (MW-7 through MW-9) were installed around the landfill, and two rounds of groundwater sampling were conducted to evaluate groundwater quality. Monitor well MW-7 is an upgradient well and monitor wells MW-8 and MW-9 are downgradient wells. The monitor wells were sampled twice for TCL +30 parameters, TAL metals, and cyanide.

4.2.4.4 Hydrogeologic Interpretation

Lithologic logs from MW-8 and MW-9 indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by alternating layers of reworked sand, silt, and broken concrete gravel pieces,

with interbeds of plant-root fragments. Borehole logs from MW-7 indicate a lithology consisting of an orange-olive-brown fine-coarse sand with little silt.

Groundwater saturation was observed at approximately 7 ft bgs at each well location. The three monitor wells were screened across the unconfined water table, at total depths of 16, 18, and 22 ft bgs in MW-7, MW-8, and MW-9, respectively. Water elevation data, measured on 6 March 1995, indicate that local groundwater flow is west toward Mill Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor wells MW-8 and MW-9 are downgradient of the M-4 area.

4.2.4.5 Groundwater Sampling Results

Monitor wells at site M-4 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-7 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific background and/or Monmouth County background concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and the established maximum background concentrations at the Main Post.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The levels of compounds that could be estimated (below the laboratory quantitation limit) were well below the NJDEP GWQC.

Table 4.2-7
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-4

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW7 2/16/95, 3/9/95 (avg.)	MW8 2/16/95, 3/8/95 (avg.)	MW9 2/16/95, 3/9/95 (avg.)
SVOC's (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	5 J	ND	4J	ND
Pesticides/PCBs (µg/L)						
4,4'-DDT	0.1**	0.1	ND	**0.185**	ND	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**6550**	**1605**	129.1
Arsenic	1.9	8*	89.3	5.1	1.525	ND
Barium	1.7	2000	699	80.95	39.9	57.9
Beryllium	0.9	20*	7[1]	0.84	ND	ND
Calcium	10.4	NLE	45400	18800	33100	46500
Cobalt	3.0	NLE	18.3	4.7	3.3	ND
Chromium	2.9	100	191	62.55	17.25	4.175
Copper	1.9	1000	730[1]	5.75	2.5	ND
Iron	6.4	300	431000	**18435**	**17900**	**21700**
Potassium	685	NLE	137000	5020	7585	8925
Magnesium	18.3	NLE	62700	8400	6145	6245
Manganese	1.8	50	480[1]	**61.9**	**110.5**	**85**
Sodium	30.5	50000	197000[1]	**50950**	9500	10280
Nickel	10.8	100	187	7.9	ND	ND
Lead	1.6	10*	22.7	9	7.05	ND
Vanadium	2.3	NLE	108	34.95	6.95	ND
Zinc	3.8	5000	233	49.65	31.75	2.43

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL -Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
** - Method detection limit equals or exceeds NJDEP groundwater quality criteria.
[1] - Monmouth County maximum background concentration.

Pesticides/PCBs

One pesticide (4-4'-DDT) was detected in a concentration slightly exceeding the NJDEP GWQC in the upgradient well MW-7 from the February sampling round only (Table 4.2-7). This concentration was confirmed in a duplicate sample collected in MW-7 during the same sampling round. However, pesticides were not detected in a downstream surface-water location (SS-5) collected from a previous investigation (Figures 4.2-7 and 4.2-11). The results of that investigation are presented in WESTON, 1993. PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-7, of the 17 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum, iron, and manganese were found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although sodium in MW-7 was detected in a concentration greater than the level established as site-specific background, the concentration was well below the Monmouth County maximum background level.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.4.6 Recommendations

One pesticide compound was detected at a concentration just above the NJDEP GWQC and background in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells, and also was not detected during previous sampling at downgradient location SS-5 (WESTON, 1993).

Although NJDEP groundwater criteria were exceeded for one pesticide, no immediate remedial action is required. The measured value of the pesticide was just slightly above the GWQC. Shallow groundwater flows toward and discharges into Mill Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. The surface water was previously sampled downstream but was not analyzed for pesticides. Since Mill Creek flows on Fort Monmouth property between sites M-4 and M-8, access to this stream is restricted. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor well locations are adequately placed to monitor downgradient groundwater, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern (including pesticides) identified in the first two rounds of sampling would be targeted for the groundwater and surface-water monitoring program.

Site M-5

4.2.5 Landfill 5 (M-5)

4.2.5.1 Site Location

Landfill 5 (M-5) is located just north of Landfill 4 in the area bounded by North Drive to the south, an unpaved road south of Building T-198 to the north, Wilson Avenue to the east, and Mill and Parkers Creeks to the west (Figure 4.2-7). The approximate area of site M-5 is 138,200 ft^2 (3.2 acres).

4.2.5.2 Site History

According to the IA, Landfill 5 was in use between 1952 and 1959, and was reportedly used for the disposal of automobiles as well as for domestic and industrial wastes similar to those mentioned in Subsection 4.2.2.2. Like Landfill 4, this landfill was also constructed in a former swamp and is presently flat and grass covered.

As part of an NJPDES permit, surface-water samples have been taken at two locations (one upstream on Mill Creek and one downstream on Lafetra Creek) since February 1986. The results are summarized in the recent report (WESTON, 1993). One VOC (tetrachloroethene) was detected in concentrations above the NJDEP surface-water criteria.

4.2.5.3 Sampling Effort

Two shallow monitor wells (MW-10 and MW-11) were installed (Figure 4.2-7), and two rounds of groundwater sampling were conducted in an effort to further evaluate the presence of VOCs, metals, and inorganics detected from samples collected during a previous investigation. Monitor wells MW-10 and MW-11 were sampled twice for TCL +30 parameters, TAL metals, sulfate, and cyanide.

4.2.5.4 Hydrogeologic Interpretation

Borehole logs from MW-10 and MW-11 indicate that the lithology consists of a thin soil cover (0.5 ft) partially underlain by fill and interbedded sand with silt and clay laminae. The components of the fill materials observed in both borings consist of coal, glass, and plastic fragments found interspersed within a silty sand and clay matrix and overlie a dark-green-brown silty/clayey medium-coarse-grained sand with silt and clay laminae.

Groundwater saturation was encountered at approximately 4 ft bgs at both well locations. The two monitor wells were screened across the water table, with total depths of 15 ft bgs. Water-level elevation data, measured on 6 March 1995, indicate that approximate local groundwater flow is west toward Mill Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor well MW-10 is downgradient of the area under investigation.

4.2.5.5 Groundwater Sampling Results

Monitor wells at site M-5 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-8 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and the established maximum background concentrations.

VOCs

Tetrachloroethene (PCE) was the only VOC detected in site groundwater. However, the PCE concentrations exceeded the NJDEP GWQC and background from both sampling rounds in MW-11, the upgradient well (Figure 4.2-11). In addition, tetrachloroethene was detected in

Table 4.2-8
Fort Monmouth - Main Post
Summary of Average Concentration of Detected Compounds in Groundwater - Site M-5

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW10 2/17/95, 3/9/95 (avg.)	MW11 2/17/95, 3/9/95 (avg.)
VOC's (µg/L)					
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	ND	**109**
SVOCs (µg/L)					
bis-(2-Ethylhexyl)phthalate	9.7	30*	ND	ND	3.5J
METALS TOTAL (µg/L)					
Aluminum	24	200	121000	155.8	**1052.5**
Barium	1.7	2000	699	116	16.05
Calcium	10.4	NLE	45400	16500	11100
Chromium	2.9	100	191	3.925	12.9
Copper	1.9	1000	730[2]	7.05	2.9
Iron	6.4	300	431000	**9205**	**4685**
Potassium	685	NLE	137000	8850	3305
Magnesium	18.3	NLE	62700	13550	4220
Manganese	1.8	50	480[2]	**146.5**	14.5
Sodium	30.5	50000	197000[2]	**82800**	17950
Lead	1.6	10*	22.7	5.65	2.2
Vanadium	2.1	NLE	108	1.825	5.85
Zinc	3.8	5000	233	7.75	173
OTHER INORGANICS (µg/L)					
Sulfate	5.0	250000	NA	14.8	43.75

[1] - same compound as listed by NJDEP tetrachloroethylene

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

NLE - No Level Established

ND - Indicates that the compound was not detected above quantification limits

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

NA - Not Analyzed

** - Method detection limit exceeds NJDEP groundwater quality criteria

[2] - Monmouth County maximum background concentration.

exceedance of the established surface-water criteria in a surface-water sample (SS-6) collected downgradient of site M-5 from a previous investigation.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The level of bis(2-ethylhexyl) phthalate that could be estimated below the laboratory quantitation limit was well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-8, of the 13 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum, iron, and manganese were found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although sodium was detected in a concentration in MW-10 greater than the level established as site-specific background, the concentration was well below the Monmouth County maximum background level.

Cyanide and Sulfate

Cyanide and sulfate were analyzed in site groundwater samples. Cyanide was not detected in the site monitor wells from either sampling round. Sulfate was detected at low levels in MW-10 and MW-11 from both sampling rounds, well below the NJDEP GWQC.

4.2.5.6 Recommendations

PCE was detected in the upgradient well in concentrations exceeding NJDEP GWQC and background from both sampling rounds. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. During previous investigations, PCE was also detected at downgradient surface-water sampling location SS-6 (WESTON, 1993). Surface water was not sampled at site M-5 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at site M-2, which is upgradient. For site M-2, the results of the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Although groundwater sample results exceeded NJDEP criteria for one VOC, immediate remedial action is not required. Groundwater flows toward and discharges into Mill Creek and Lafetra Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater between the source and the streams. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that some VOC concentrations exceed NJDEP surface-water criteria in Mill Creek adjacent to site M-5. However, previous rounds of sampling have indicated that VOC concentrations do not exceed surface-water criteria at site M-8, which is downgradient of site M-5. Therefore, there is little immediate threat to human health.

In addition, since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and

surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

Site M-6

4.2.6 Burning Area (M-6)

4.2.6.1 Site Location

According to interviews with Fort Monmouth personnel, Burning Area M-6 consisted of open-air wood burning in small pits located on Landfill 3. Specific pit locations could not be discerned from aerial photograph review and site reconnaissance.

4.2.6.2 Site History

It is likely that the burning areas on Landfill 3 were used throughout the period when the landfill was in operation, 1959 through 1964. Specific burn areas have not been identified. At present, the surface in the eastern part of Landfill 3 is hummocky and grass covered.

4.2.6.3 Sampling Effort

This site was included in the Landfill 3 (M-3) investigation (see Subsection 4.3.3).

Site M-8

4.2.7 Landfill 8 (M-8)

4.2.7.1 Site Location

Landfill 8 (M-8) is located north of Buildings T-692 and S-697 in a bend of Parkers Creek (Figure 4.2-12). According to the *Phase I Engineering Study and Compliance Plan, Fort Monmouth Solid Waste Landfill* (Cosulich, 1981), a masonry dike was constructed around the landfill perimeter adjacent to Parkers Creek. The area within the dike is 9.5 acres, of which approximately 7.2 acres contain waste material. The approximate area of site M-8 is 315,000 ft^2 (7.2 acres).

4.2.7.2 Site History

Landfill 8 was operated from 1962 through 1981. In preparation for landfill operations, as mentioned previously, a masonry dike was constructed around the perimeter. According to Cosulich (1981), in the southern part of the landfill area, an approximately 0.9-acre area was excavated to 12 feet below grade prior to filling with solid waste. Waste material was deposited directly on the existing surface over the rest of the site. Cosulich found the bottom of fill to be 3 feet below sea level. The 1969 aerial photographs show an uneven surface with both pit-type disposal and piled-up debris. A number of drums stacked near the entrance just west of the STP are visible in the 1969 photos. The area just west of the stacked drums appears to have randomly strewn drums. In the western half of the site, there were two separate piles of telephone poles. One area in the south-central part of the landfill was used for the disposal of trees and brush.

The photos also show that soil was used to cover the trash. In 1969 part of the area was covered with vegetation.

At present, the landfill is covered with heavy brush and small trees. There is no visible evidence of the drums observed in the 1969 aerial photographs. Four monitor wells and several piezometers of unknown construction were found during the site walkover in 1993.

According to the IA in 1979, materials observed in Landfill 8 and determined from interviews, included unwashed pesticide/herbicide cans, batteries, fluorescent tubes, electronic components, garbage, asbestos wrappings from pipes, soot and boiler scale, sludge from STPs, small quantities of outdated drugs, outdated photographic chemicals in glass bottles, building rubble (including ACM), incinerator ash, sand from oil spill cleanups, and other debris. Cosulich reported that incinerator ash from the classified document incinerator (site M-7) ranging in thickness from 2.5 to 6.5 feet was found along the southern boundary of the landfill. Cosulich also reports that leaves and brush were placed in this landfill. From 1992 through the present, an adjacent area to the southeast of Landfill M-8 has been used for a leaf-composting operation. This operation has an NJDEP permit.

As part of an NJPDES permit, surface-water samples have been taken at two locations in Lafetra Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). No compounds were detected in concentrations above the NJDEP surface-water criteria.

4.2.7.3 Sampling Effort

Because of the poor recovery of the original Landfill 8 monitor wells and the highly turbid conditions in the wells, all existing wells and piezometers were abandoned. Four new monitor wells (MW-12 through MW-15), shown in Figure 4.2-12, were installed and sampled twice for TCL +30 parameters, TAL metals, sulfate, ammonia, and cyanide in an effort to evaluate the impacts of previous site activities on groundwater quality. The new wells were surveyed and tidal water-elevation monitoring was conducted in the four new monitor wells and at stilling well-7 (Figure 4.2-12).

4.2.7.4 Hydrogeologic Interpretation

Lithologic logs from downgradient wells MW-13, MW-14, and MW-15 indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of large wood chip fragments, amber glass chips, and traces of wires. Natural sandy silt with trace amounts of clay were intermixed with the manmade

materials. Monitor well MW-12, located upgradient of the landfill boundary, indicates a lithology consisting of an orange-brown medium-fine-grained sand with trace amounts of silt and clay.

Groundwater saturation observed during drilling operations ranged from 2 to 8 ft bgs, depending on the proximity to Parkers Creek. Monitor wells were screened across the water table and were drilled to 15 ft bgs at all well locations. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is generally north toward Parkers Creek (Figure 4.2-13). Based on groundwater elevation measurements, monitor wells MW-13, MW-14, and MW-15 are downgradient and MW-12 is upgradient of the area under investigation.

4.2.7.5 Groundwater Sampling Results

Monitor wells at site M-8 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-9 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.2-14 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and established maximum background at the Main Post.

VOCs

Three VOCs (tetrachloroethene, benzene, and chlorobenzene) were detected in site groundwater in one or both sampling rounds in concentrations exceeding the NJDEP GWQC. Tetrachloroethene was detected in MW-12, the upgradient well, from both sampling rounds. Benzene was detected below the laboratory quantitation limit in MW-15 from both sampling rounds; however, the level is estimated to be above the NJDEP GWQC of 1 µg/L. Chlorobenzene was detected in MW-15 from both sampling rounds and in MW-14 below laboratory quantitation limits, from the March sampling round only. VOC compounds were not detected in MW-13.

Table 4.2-9
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-8

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW12 2/17/95, 3/15/95 (avg.)	MW13 2/22/95, 3/15/95 (avg.)	MW14 2/16/95, 3/15/95 (avg.)	MW15 2/22/95, 3/15/95 (avg.)
VOC's (µg/L)							
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	**47**	ND	ND	ND
Benzene	3.3**	1*	ND	ND	ND	ND	**4.5J**
Chlorobenzene	2.7	4	ND	ND	ND	**6.5J**	**37.5**
Toluene	2.7	1000	ND	ND	ND	4.5J	ND
SVOCs (µg/L)							
1,4-Dichlorobenzene	4.8	75	ND	ND	ND	3J	4.5J
1,3-Dichlorobenzene	5.3	600	ND	ND	ND	ND	3.5J
1,2-Dichlorobenzene	5.7	600	ND	ND	ND	ND	3J
Naphthalene	8.4	NLE	ND	ND	ND	3J	3J
2-Methylnaphthalene	8.7	NLE	ND	ND	ND	1J	1.5J
Acenaphthene	6.7	400	ND	ND	ND	2J	15.5
Dibenzofuran	6.5	NLE	ND	ND	ND	ND	6J
Fluorene	6.3	300	ND	ND	ND	ND	8J
Carbazol	4.4	NLE	ND	ND	ND	ND	3J
METALS TOTAL (µg/L)							
Aluminum	24.0	200	121000	**738**	**512**	**2350**	**568**
Arsenic	1.9	8*	89.3	ND	ND	3.75	ND
Barium	1.7	2000	699	8.8	232	410	269
Beryllium	0.9	20*	7[1]	ND	ND	0.7	ND
Calcium	10.4	NLE	45400	8980	157500	159500	336000
Cadmium	2.8	4	9.5	ND	ND	2.95	ND
Cobalt	3.0	NLE	18.3	ND	ND	4.3	ND
Chromium	2.9	100	191	8.425	4.2	24	4.25
Copper	1.9	1000	730[2]	2.6	6.5	5.2	ND
Iron	6.4	300	431000	**2979.5**	**40000**	**57350**	**25800**
Mercury	0.2	2	0.26	ND	0.36	ND	ND
Potassium	685	NLE	137000	2815	19950	65150	35450
Magnesium	18.3	NLE	62700	2485	63950	77050	74000
Manganese	1.8	50	480[2]	10.25	**655**	**276**	**381**
Sodium	30.5	50000	197000[2]	21550	**156050**	**383500**	**229000**
Nickel	10.8	100	187	ND	ND	3.5	ND
Lead	1.6	10*	22.7	0.9	3.25	9.75	2.1
Vanadium	2.3	NLE	108	6.225	4.7	14.15	7.7
Zinc	3.8	5000	233	6.55	19.6	53.4	21.1
OTHER INORGANICS (µg/L)							
Ammonia as Nitrogen	0.2	500	NA	ND	2.75	36.3	30.25
Sulfate	5.0	250000	NA	40.9	24.15	11.4	81.35

[1] - same compound as listed by NJDEP tetrachloroethylene
Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
** - Method detection limit exceeds NJDEP groundwater quality criteria.
NA - Not Analyzed
[2] - Monmouth County maximum background concentrations.

SVOCs

One SVOC (acenaphthene) was detected above the laboratory quantitation limit in monitor well MW-15. Acenaphthene was detected in a concentration well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-9, of the 19 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum was found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although iron was found in concentrations well below site-specific maximum background levels, iron was detected in concentrations in MW-13 and MW-14 above Monmouth County maximum background levels. The presence of iron in exceedance of the criteria may be attributable to the high concentrations found in site background soils and is not a compound of concern. Manganese in MW-13 and sodium in MW-14 and MW-15 were detected in concentrations greater than both established background levels (Figure 4.2-14). Elevated sodium concentrations may be the result of saline water intrusion into the groundwater. These wells are near the Parkers Creek estuary. Saltwater has invaded the estuary (see Subsection 4.2.7.6.1) and intruded the aquifer monitored by these wells. Sodium is not a compound of concern. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

Cyanide, Sulfate, and Ammonia

Cyanide, sulfate, and ammonia as nitrogen were analyzed for in site M-8 groundwater. Cyanide was not detected in the site monitor wells from either sampling round. Sulfate was detected above the laboratory quantitation limit in both sampling rounds in MW-12, MW-13, MW-14, and MW-15. Ammonia as nitrogen was detected above the laboratory quantitation limit in both sampling rounds in MW-13 and MW-15. Ammonia, not detected from the February sampling round in MW-14, was detected in the March sampling round. Sulfate and ammonia were detected well below the NJDEP GWQC.

4.2.7.6 Tidal Monitoring

Tidal fluctuations in Parkers Creek were monitored at one station (stilling well-7) at Landfill 8 (M-8) (Figure 4.2-12). (Hydrographs are presented in Appendix E.) Changes in creek stage were compared to changes in water levels measured at the following monitor wells: MW-12, MW-13, MW-14, and MW-15. Wells MW-13, MW-14, and MW-15 are located within 100 feet of Parkers Creek, and well MW-12 is approximately 1,300 feet from Parkers Creek. The tidal monitoring station at Landfill 8 (M-8) records incoming and outgoing tides, but the lowest tidal effects are subdued. Peaks in creek levels corresponding to high tides are sharp, but peaks in creek levels corresponding to low tides are rounded because the elevation of the stream bed is higher than the elevation of sea level at low tide. The elevation of the stream bed is -1.02 ft msl at stilling well-7. The maximum change in creek levels at Landfill 8 (M-8) was 3.3 feet, and the maximum change in water level in the monitor well was 1.4 feet during the time of study. All site monitor wells were screened below sea level.

Data collected from well MW-12 are useful as baseline data during the tidal monitoring study conducted at Landfill 8 (M-8). There is no apparent relationship between water levels measured at well MW-12 and creek levels measured at stilling well-7. Well MW-12 is approximately 1,300 feet from the creek and is too distant to be influenced by changing creek levels. Water levels in the water-bearing unit and creek levels were slowly declining by about 0.1 foot during the tidal monitoring study in March 1995.

The response of water levels measured at well MW-14 is dampened, indicating a poor to moderate hydraulic connection between the water-bearing unit at MW-14 and the creek levels. The peak in water levels measured at well MW-14 occurs from 60 to 200 minutes after the peak in creek level at stilling well-7, and the water-level peaks at MW-14 are only about 10% of the tidal peak in creek levels.

There is an apparent hydraulic influence between the water-bearing unit at MW-13 and creek levels. Water levels measured at MW-13 respond quickly to high tides recorded in the creek. The response of water levels at MW-13 to low tides in the creek is subdued probably because low tides have less effect on Parkers Creek in the area of MW-13. This is expected because MW-13 is approximately 2,400 feet upstream from stilling well-7, and tidal changes in the creek diminish in the upstream direction, as documented at Landfill 2 (M-2). The ratio of change in water level in the water-bearing unit to change in creek levels was not calculated for this location because of the distance between the well and the tidal monitoring station.

There is an apparent hydraulic connection between the water-bearing unit at MW-15 and creek levels. Water levels measured at well MW-15 respond quickly to rising and falling creek levels. The peak in water levels measured at well MW-15 occurs at approximately the same time as the peak in creek levels at stilling well-7. The response of water levels at MW-15 to low tides in the creek is slightly subdued. At this location (stilling well-7, MW-15) water-level peaks at MW-15 are approximately 30 to 40% of the tidal peak in creek levels.

4.2.7.6.1 Conductivity and Salinity Results

Conductivity and salinity were measured at Parkers Creek and monitor wells (MW-12 through MW-15) at Landfill 8 (M-8) in January and March 1995. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site (see Tables E-1 through E-3 in Appendix E).

The results indicate the presence of brackish to salty water in Parkers Creek at Landfill 8 (M-8). Specific conductance measured in Parkers Creek at Landfill 8 (M-8) is consistently greater than

2,000 µmhos. In addition, salinity measured in Parkers Creek at Landfill 8 (M-8) is consistently greater than 1.5 ppth.

Groundwater sampled from monitor well MW-12 exhibited low conductivity and zero salinity. Monitor wells MW-13, MW-14, and MW-15 indicate possible brackish to saltwater intrusion in an area of the water-bearing unit close to Parkers Creek.

4.2.7.7 Recommendations

Due to highly turbid conditions and poor water-level recovery of the original monitor wells, all original monitor wells and piezometers were abandoned.

Groundwater sampling results indicate low concentrations of benzene and chlorobenzene were detected in two downgradient monitor wells, and PCE concentrations were detected in the upgradient well (MW-12) exceeding NJDEP GWQC. Additionally, PCE and other VOCs were previously detected in surface-water samples at location SS-7, downstream of site M-8.

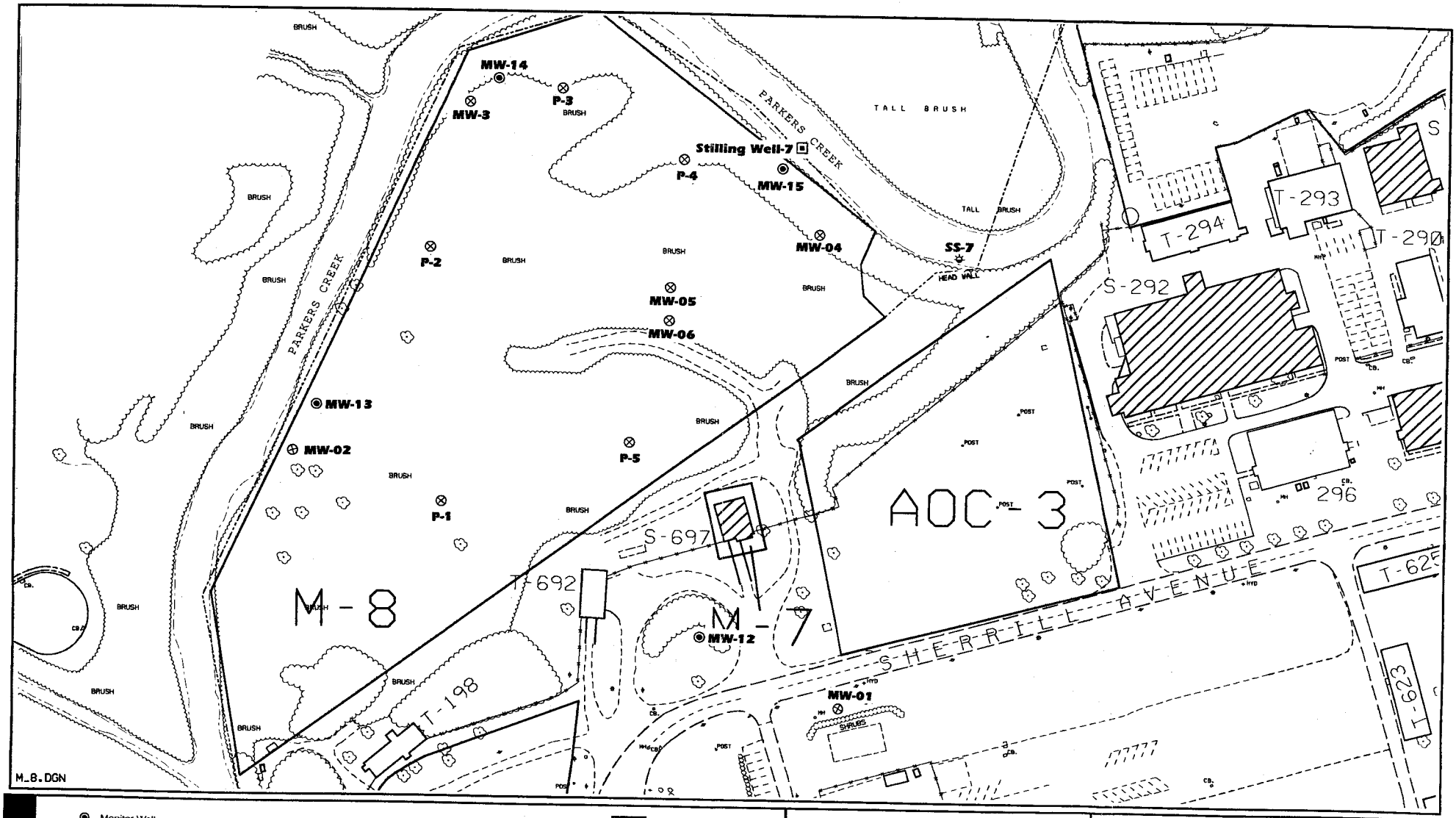
Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. However, surface water was not sampled at site M-8 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at sites M-2 and M-3, which are upstream. The concentrations of VOCs at site M-8 for previous rounds were less than the NJDEP surface-water criteria.

The results of the tidal monitoring indicate that there is no apparent relationship between creek levels and water levels in MW-12 because of its distance from the creek. A poor to moderate relationship was measured between MW-14 and creek levels. A direct relationship was observed between creek levels and MW-13 and MW-15. The conductivity and salinity measurements in Parkers Creek indicate the presence of brackish to salty water at site M-8. Groundwater sampled from MW-12 indicates freshwater. Monitor wells MW-13, MW-14, and MW-15 indicate brackish to salty water in an area of the water-bearing unit close to Parkers Creek.

Although groundwater sample results exceeded NJDEP criteria for three VOCs, immediate remedial action is not required. Shallow groundwater flows toward and discharges to Lafetra Creek, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater at or downgradient of the site. In fact, groundwater at three of the four monitor wells is brackish and unsuitable for drinking. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that VOC concentrations did not exceed NJDEP surface-water criteria in the stream. Therefore, there is little immediate threat to human health.

In addition, since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



LEGEND

- Monitor Well
- Existing Surface Water Sampling Location
- Abandoned Monitor Well/ Piezometer
- Stilling Well
- Road (paved)
- Road/Trails (unpaved)
- Fence
- Building
- Wooded Area
- Tree/Bush
- Light Pole
- Utility Pole
- Site
- Brook/Creek
- Base Boundary
- Marshy Area
- Approximate Boundary

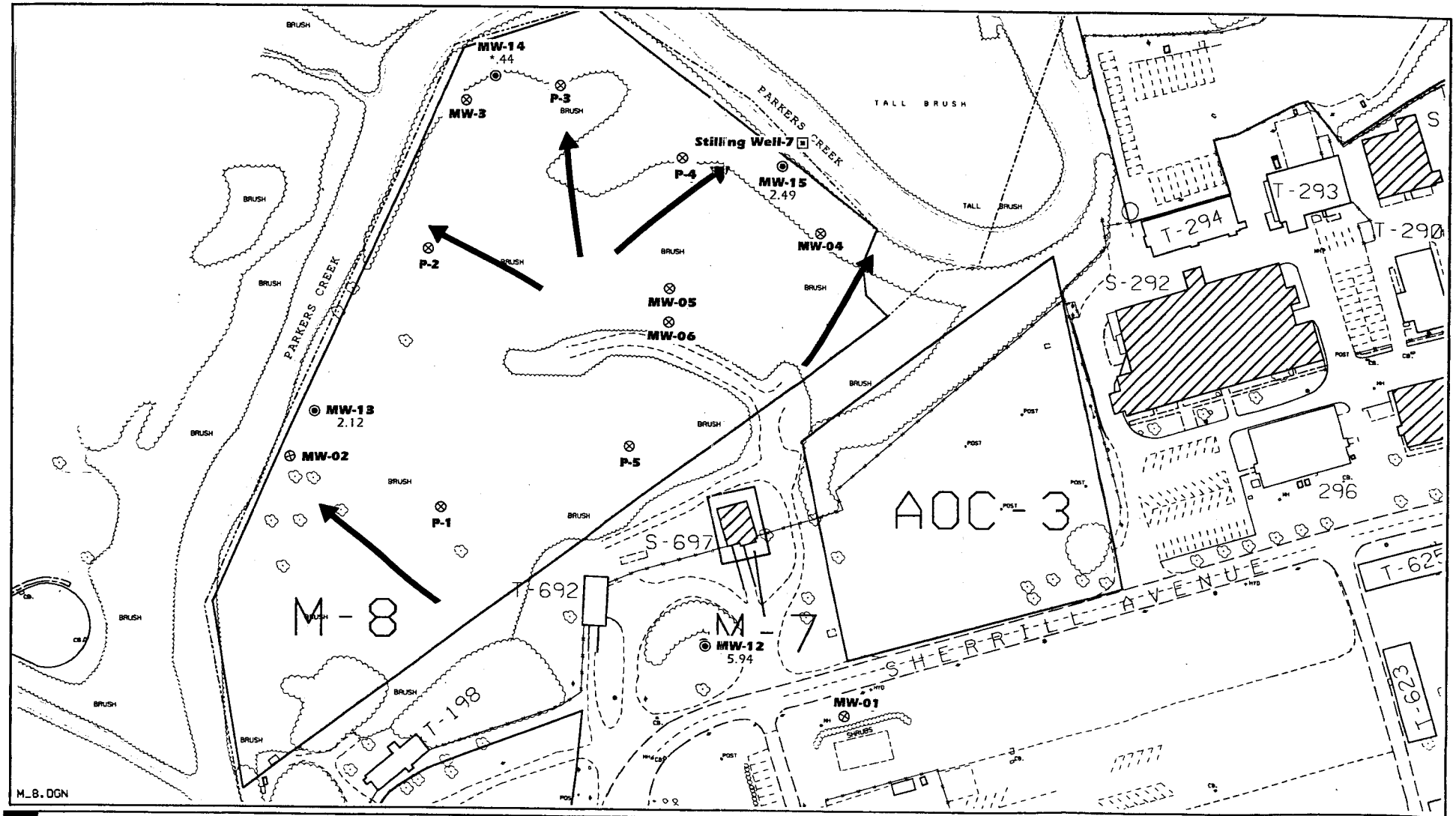
0 100 200
SCALE IN FEET

95P-3185 6/23/95

Fort Monmouth, Main Post

FIGURE 4.2-12

INCINERATOR (M-7) AND LANDFILL 8 (M-8) SAMPLING LOCATIONS



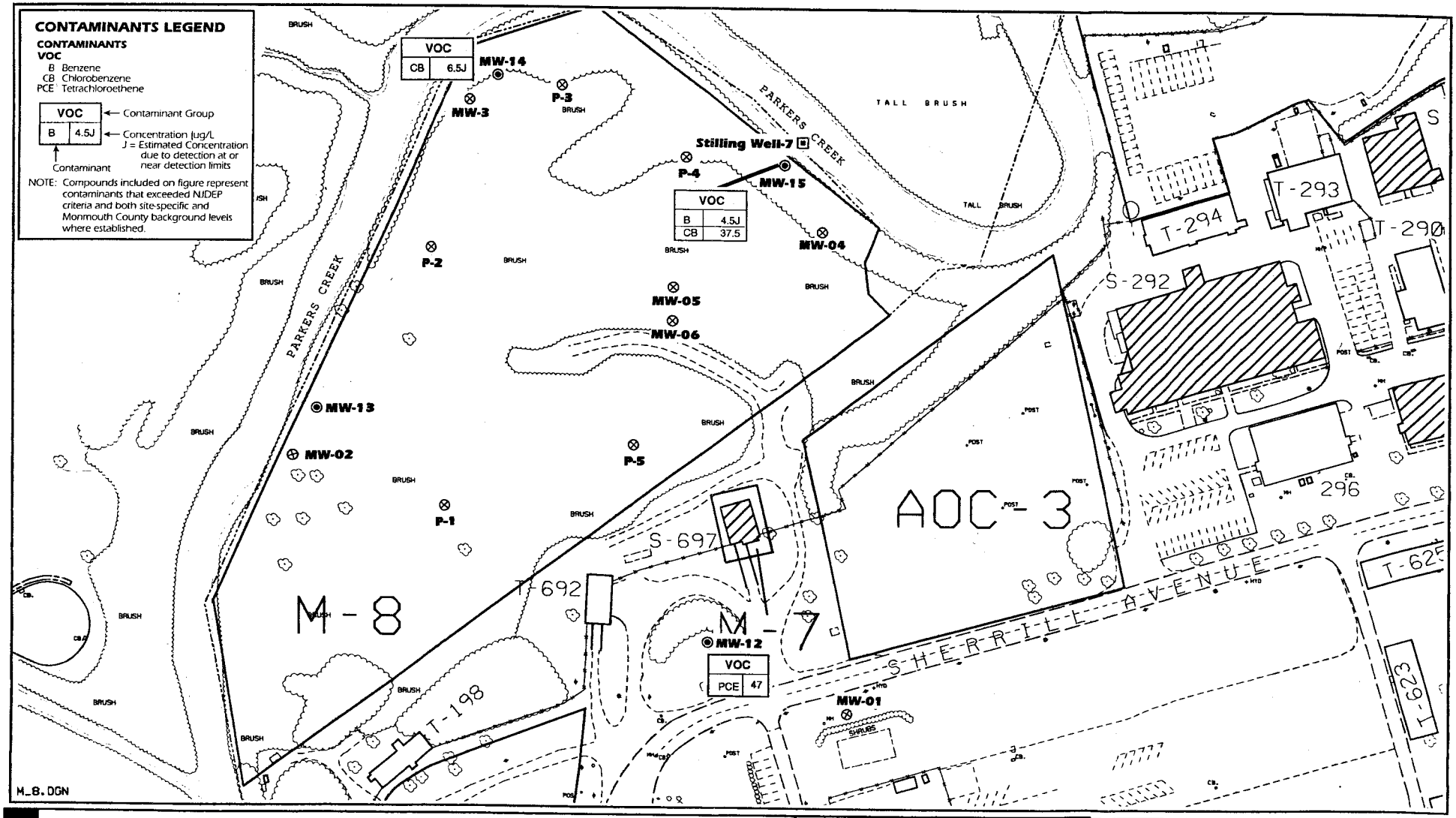
Fort Monmouth, Main Post

FIGURE 4.2-13

INCINERATOR (M-7) AND LANDFILL 8 (M-8)

APPROXIMATE GROUNDWATER FLOW DIRECTIONS

(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-14
INCINERATOR (M-7) AND LANDFILL 8 (M-8)
DISTRIBUTION OF CONTAMINANTS
IN SITE GROUNDWATER

Site M-12

4.2.8 Landfill 12 (M-12)

4.2.8.1 Site Location

Landfill 12 (M-12) is located on the south side of Husky Brook, west of Murphy Drive (Figure 4.2-15). The approximate northwest area of site M-12 is 60,100 ft^2 (1.4 acres) and the approximate southwest area is 29,200 ft^2 (0.7 acre).

4.2.8.2 Site History

The period of operation of Landfill 12 is unknown. Landfill 12 most likely contains domestic and industrial wastes similar to that found in other Main Post landfills. This landfill may also have been used for automobile disposal. At present, the southern bank of Husky Brook is flat and grass covered.

4.2.8.3 Sampling Effort

GPR and magnetometer surveys were conducted to locate the landfill boundaries. Three monitor wells, MW-16, MW-17, and MW-18, were installed at the locations shown in Figure 4.2-15. The original locations of monitor wells MW-16 and MW-18 were repositioned during the field investigation activities. Monitor well MW-16 was moved because of possible accessibility problems (the proposed location of the well was inside the locked boat yard parking lot). Monitor well MW-18 was moved based on geophysical interpretations.

These wells were sampled twice for TCL +30 parameters, TAL metals, and cyanide. Tidal monitoring was conducted at the same time as tidal monitoring for Landfill 14.

4.2.8.4 Geophysical Results

The magnetometer survey conducted at the northeast portion of site M-12, i.e., M-12NE, revealed elevated total magnetic field readings located at relative grid coordinates 40N to 70N/335E to 400E and 70N to 80N/175E to 225E. As shown in Figure 4.2-16, the high magnetometer

readings are represented by the violet contour interval and are indicative of buried ferrous material. Another anomalous area indicating ferrous material was revealed at the southwest corner of site M12NE and is located at approximate grid coordinates 0N to 60S/50W to 100E. Cultural features affecting the magnetometer survey are the tower and guy wires centered about coordinate 60N/100E and the chainlink fence to the south of the survey area. As shown in Figure 4.2-17, the magnetic gradient anomalies coincide with the total magnetic field results, also suggesting the presence of buried ferrous material within the suspected landfill boundary.

The GPR survey at M-12NE revealed chaotic radar reflectors throughout the area. These radar waveforms may be indicative of coarse-grained fill material or naturally occurring sands and gravel. However, the radar data collected collaborates the existing magnetometer anomalies at grid coordinates 30N to 70N/335E to 350E and 30N to 70N/390E to 400E, suggesting buried ferrous material within the suspected landfill boundary.

Hyperbolic radar signatures appear traversing the site from approximately 280E to 300E at a depth of 3 ft bgs. These hyperbolic waveforms are interpreted to be an 18-in. diameter drainage pipe that was observed discharging to the stream.

Site M-12SW contained many cultural features scattered throughout the site, including overhead power lines and metallic surface debris, prohibiting total site coverage and producing anomalous magnetic signatures. The magnetometer survey revealed anomalous total magnetic field and gradient anomalies at the northwest portion of the survey area. Located within grid coordinates 0N to 50N and 50E to 120E, the anomalies are probably due to metallic debris observed on the surface. As shown in Figure 4.2-18, total magnetic field anomalies exist at grid coordinates 0N to 20N/140E to 180E and centered about coordinate 10S/200E. The magnetic gradient contour plot (Figure 4.2-19) confirms these anomalous magnetic signatures and reveals smaller discrete high and low gradient readings indicative of buried ferrous material from 10N to 10S and 120E to 240E.

The GPR survey revealed hyperbolic diffraction patterns at 10N/160E and 10S/200E, confirming the presence of the magnetometer anomalies at a depth of approximately 2 ft bgs. These

hyperbolic radar signatures are typical of buried manmade metallic cyclindrical objects such as pipe, utilities, and other metallic objects, as well as naturally occurring cobbles and large gravel. Chaotic radar reflectors were also found at the northeast quadrant of the site within grid coordinates 10N to 50N/250E to 300E. These chaotic waveforms are indicative of coarse-grained materials such as sand and gravel or disturbed subsurface conditions.

The results of the geophysical survey at M-12NE and M-12SW indicate that fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells and surface-water sample locations are positioned to adequately monitor groundwater downgradient of these areas.

4.2.8.5 Hydrogeologic Interpretation

Lithologic logs from the wells installed at M-12 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay.

Saturation was observed at approximately 2 ft bgs across the site. The three monitor wells were screened across the water table and set at 14.5 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March sampling round, indicate that local groundwater flows north toward Husky Brook (Figure 4.2-20). Based on groundwater elevation measurements, monitor wells MW-17 and MW-18 are located downgradient of the M-12 area.

4.2.8.6 Groundwater Sampling Results

Monitor wells at site M-12 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-10 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results

Table 4.2-10
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-12

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW16 2/20/95, 3/10/95 (avg.)	MW17 2/20/95, 3/10/95 (avg.)	MW18 2/20/95, 3/10/95 (avg.)
SVOCs (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	ND	3 J	2J	4 J
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**961**	173.5	**733**
Arsenic	1.9	8*	89.3	4.05	ND	1.475
Barium	1.7	2000	699	47.1	184	133.5
Calcium	10.4	NLE	45400	7860	50200	6235
Cadmium	2.8	4	9.5	2.475	ND	3.4
Cobalt	3.0	NLE	18.3	2.025	ND	2.675
Chromium	2.9	100	191	12.025	4.425	7.675
Copper	1.9	1000	730[1]	ND	14.1	5.1
Iron	6.4	300	431000	**19650**	**31250**	**1795**
Mercury	0.2	2	0.26	0.205	ND	ND
Potassium	685	NLE	137000	3040	4380	5115
Magnesium	18.3	NLE	62700	6120	4405	3935
Manganese	1.8	50	480[1]	46.05	**256**	16.8
Sodium	30.5	50000	197000[1]	17150	10285	21050
Nickel	10.8	100	187	3.75	ND	7.8
Lead	1.6	10*	22.7	1.1	1.3	3.1
Vanadium	2.3	NLE	108	6.35	ND	2.775
Zinc	3.8	5000	233	20.75	9.6	45.3

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater criteria

NLE - No Level Established

ND - Indicates that the compound was not detected at noted quantification limit

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

[1] - Monmouth County maximum background concentration.

with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected in the site monitor wells above laboratory quantitation limits from either sampling round. The estimated value for bis(2-ethylhexyl) phthalate is below NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-10, of the 18 metals detected in site groundwater, 3 (aluminum, iron, and manganese) were found in concentrations exceeding the NJDEP GWQC. However, all metals were found in concentrations below those determined for site-specific or Monmouth County maximum background levels. Although the concentration of aluminum exceeded the Monmouth County background level in MW-17, the concentration was well below the site-specific background level established at the Main Post.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.8.7 Tidal Monitoring — Landfill 12 and Landfill 14 (M-12 and M-14)

Tidal fluctuations in Husky Brook were monitored at an upstream tidal monitoring station (stilling well-8) and at a downstream tidal monitoring station (stilling well-9) at Landfills 12 and 14 (Figure 4.2-15). The tidal monitoring stations are approximately 400 feet apart and tidal changes at both stations are similar. Changes in creek levels measured at station stilling well-8 were compared to changes in water levels measured at monitor wells MW-16 through MW-21 (see Appendix E).

Monitor wells MW-17, MW-18, MW-19, and MW-21 are located within 150 feet of the creek, and wells MW-16 and MW-20 are located 150 feet or more from the creek. The tidal monitoring station at Landfills 12 and 14 records high and low tides, but the lowest tidal peaks are slightly subdued. The stream bed elevation at Landfills 12 and 14 is the lowest of the three areas studied and is more affected by low tides. Stream bed elevation is -1.71 ft msl at stilling well-8 and -1.63 ft msl at stilling well-9. The maximum change in creek levels during the study was 3.3 feet. The maximum change in water level in the monitor well was approximately 1.6 feet during the time of study.

Data collected from wells MW-19 and MW-20 are useful as baseline data during the tidal monitoring study conducted at Landfills 12 and 14. There is no apparent relationship between water levels measured at wells MW-19 and MW-20 and creek levels measured at stilling well-8. Well MW-19 is approximately 150 feet from the creek, but is about 1,600 feet upgradient from stilling well-8. Well MW-20 is approximately 700 feet from the creek and is too distant to be influenced by changing creek levels. Water levels in the water-bearing unit and creek levels were fluctuating by less than 0.1 foot during the tidal monitoring study in March 1995.

The response of water levels measured at wells MW-16, MW-17, and MW-18 indicates a poor to moderate degree of hydraulic connection between the water-bearing unit in the area around these wells and the creek levels. There is a small lag time between tidal peaks in the creek and water-level peaks in each of the three wells. The magnitude of water-level changes in these three wells is small, between 5% and 15% of the magnitude of tidal changes in the creek.

There is an apparent hydraulic influence between the water-bearing unit at MW-21 and creek levels. Water-level data from monitor well MW-21 were compared with creek level data from station stilling well-8. The peak in water levels measured at well MW-1 occurs approximately 70 to 120 minutes after the peak in creek levels at stilling well-8, but the ratio of change in water level in the water-bearing unit to change in creek levels at this location (stilling well-8, MW-21) is approximately 40% to 50%. This high ratio indicates a high degree of hydraulic influence.

4.2.8.7.1 Conductivity and Salinity Results

Conductivity and salinity were measured in Husky Brook and in the monitor wells at Landfill 12 (M-12) and Landfill 14 (M-14) in January and March 1995 and are presented in Appendix E. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site.

The results indicate the presence of brackish to salty water in Husky Brook at Landfills 12 and 14 (M-12, M-14).

Specific conductance measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 2,000 µmhos. In addition, salinity measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 1.5 ppth. The results are consistent with the higher streambed elevation at Landfill 2 (M-2) compared to Landfill 8 (M-8) and Landfills 12 and 14 (M-12, M-14).

Groundwater sampled from monitor wells at each location generally exhibit low conductivity and zero salinity.

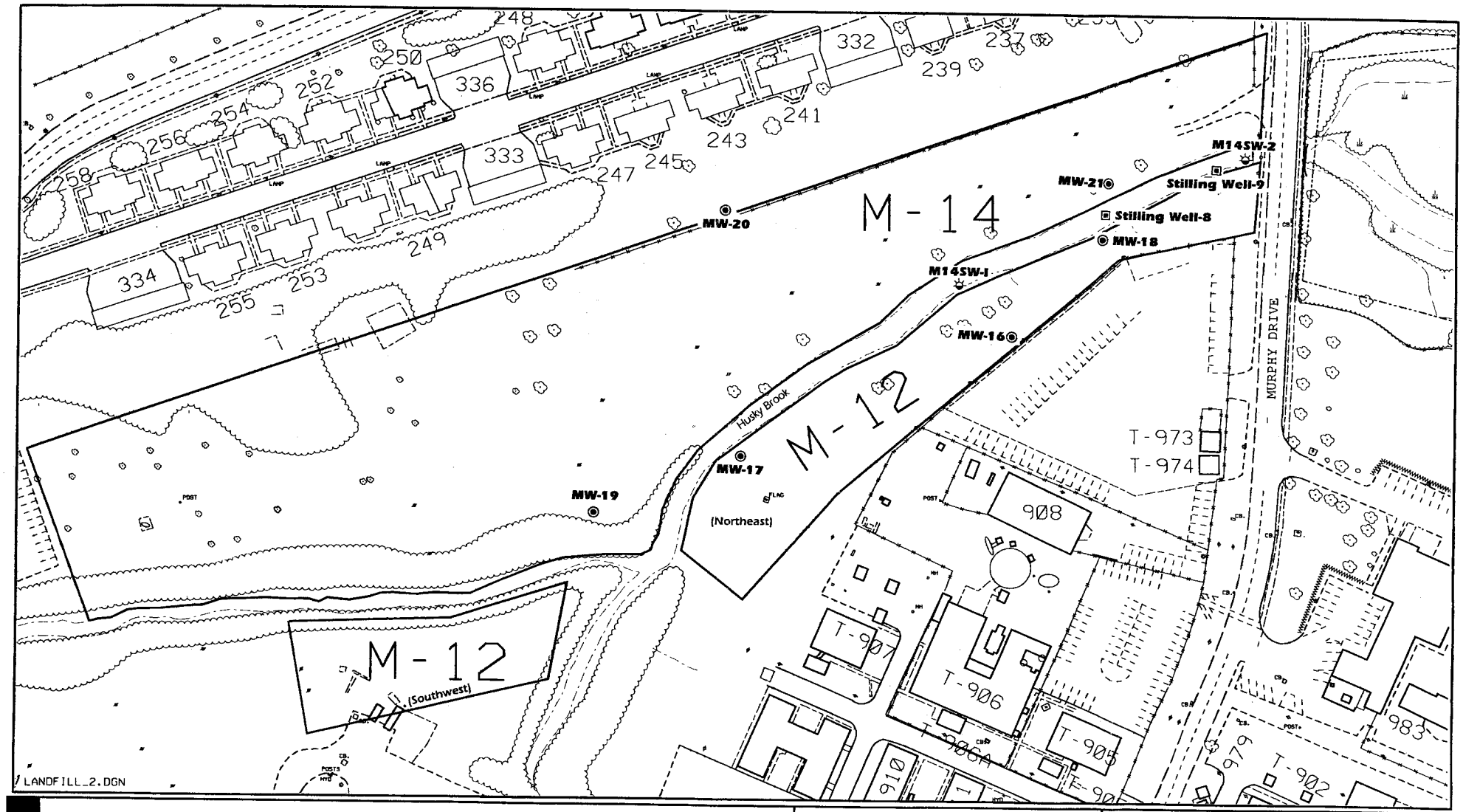
4.2.8.8 Recommendations

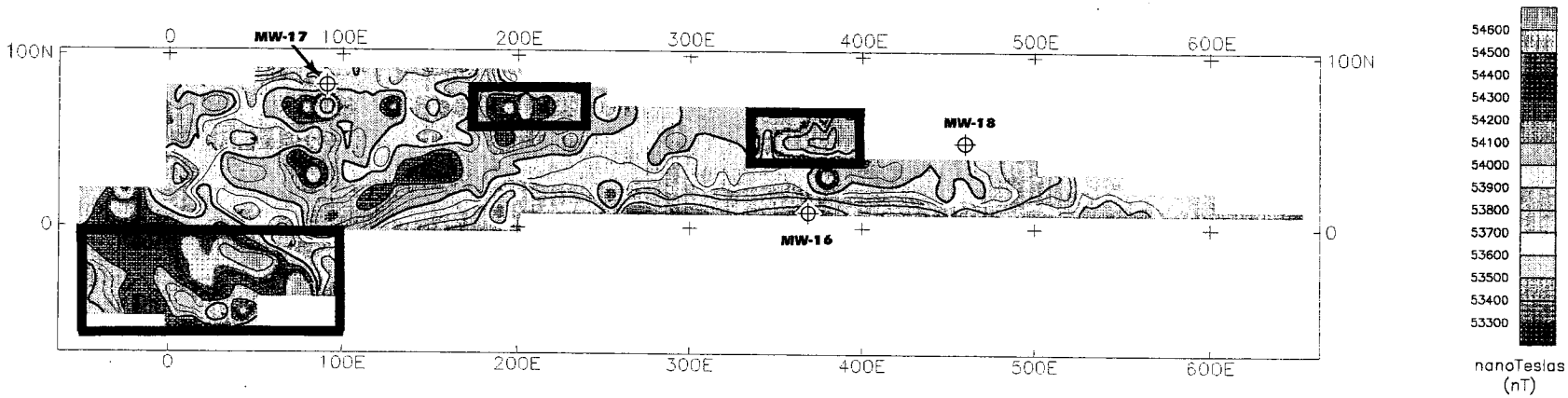
The results of the geophysical surveys indicate that the identified fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells are positioned to adequately monitor groundwater downgradient of these areas.

Groundwater sampling results indicate that no compounds of concern exceeded NJDEP GWQC from upgradient and downgradient wells.

The results of the tidal monitoring relate to both sites M-12 and M-14. The data indicate that there is no apparent relationship between creek levels and water levels in MW-19 and MW-20. A poor to moderate relationship was measured between MW-16, MW-17, and MW-18 and creek levels. A direct relationship was observed between creek levels and MW-21. The conductivity and salinity measurements in Husky Brook indicate the presence of brackish to salty water at sites M-12 and M-14. Groundwater sampled from monitor wells at each location indicates freshwater.

Although no compounds of concern were identified at site M-12, because of the site's history of being used as a landfill, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.


M-14
M-12
M-12
(Northeast)
(Southwest)
MW-20
MW-21
MW-18
MW-16
MW-17
MW-19
M14SW-1
M14SW-2
Stilling Well-8
Stilling Well-9
Husky Brook
MURPHY DRIVE
T-973
T-974
T-907
T-906
T-906A
T-905
T-902
908
910
976
983
LANDFILL_2.DGN
LEGEND
Monitor Well
Existing Surface Water Sampling Location
Stilling Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3186
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-15
LANDFILLS 12 (M-12) AND 14 (M-14)
SAMPLING LOCATIONS



LEGEND

Monitor Well

Buried Ferrous Material

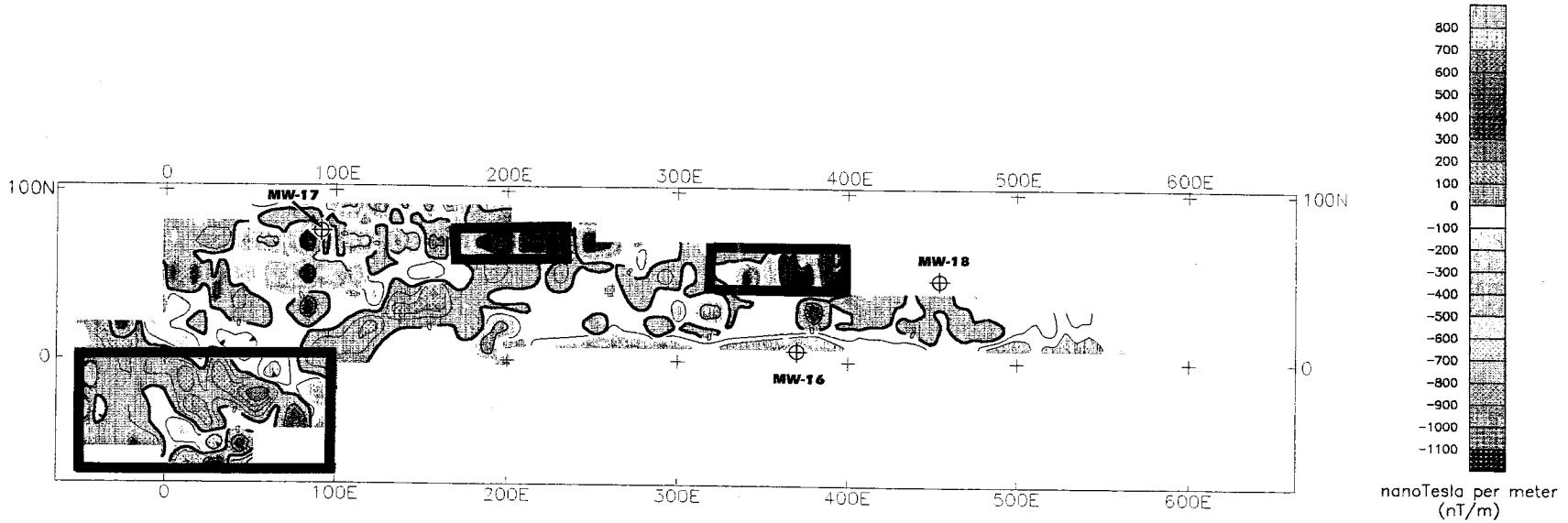
0 50 100 150

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 NE

FIGURE 4.2-16
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-12 NE

95P-3235 6/27/95



LEGEND

Monitor Well

Buried Ferrous Material

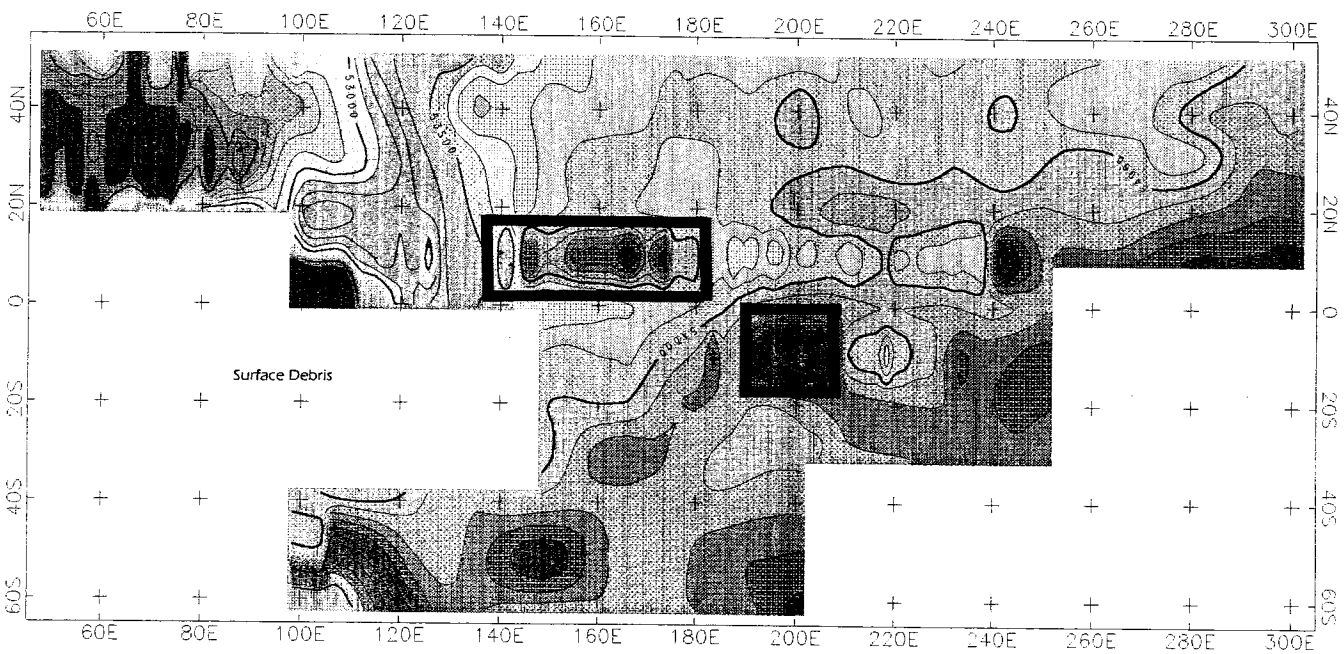
0 50 100 150

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 NE

FIGURE 4.2-17
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-12 NE

95P-3236 6/27/95



LEGEND

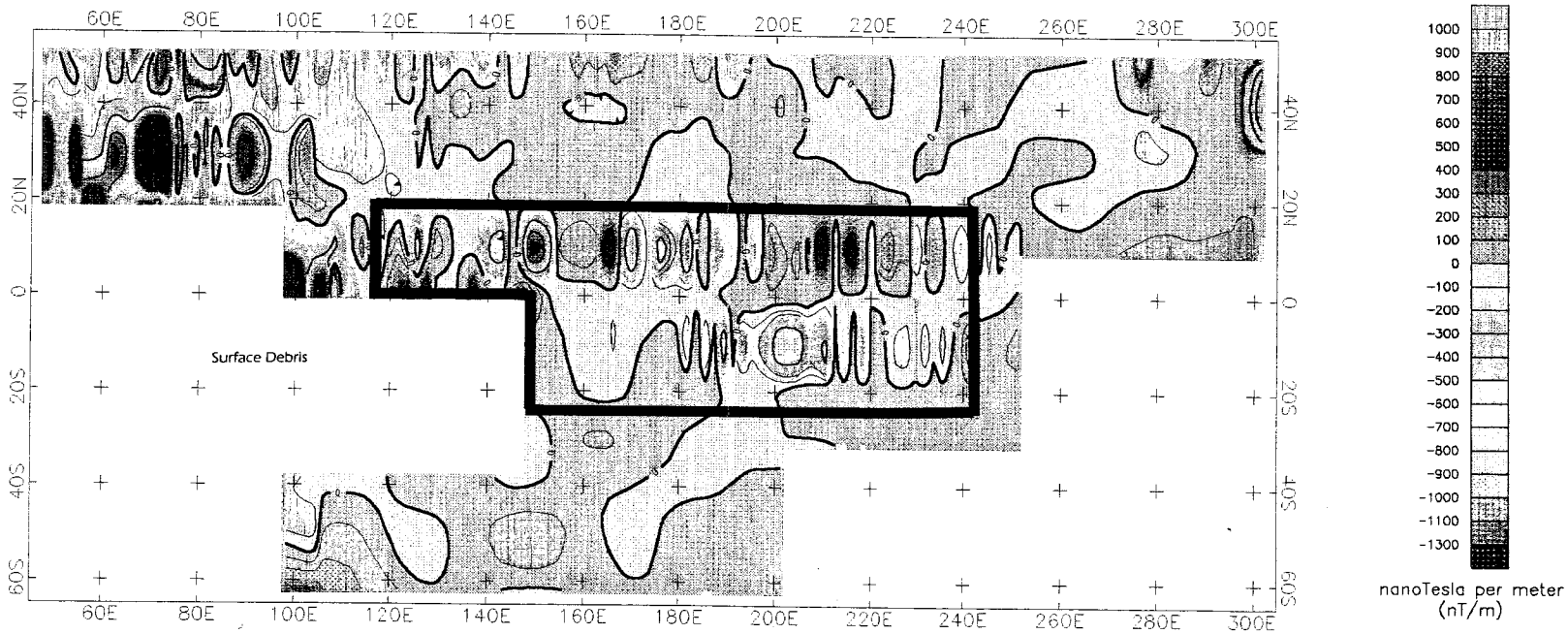
Possible Fill Area Boundary

0 10 20 30 40 50
SCALE IN FEET

Fort Monmouth, Main Post Site M-12 SW

FIGURE 4.2-18
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-12 SW

95P3737 6/27/95



LEGEND

Possible Fill Area Boundary

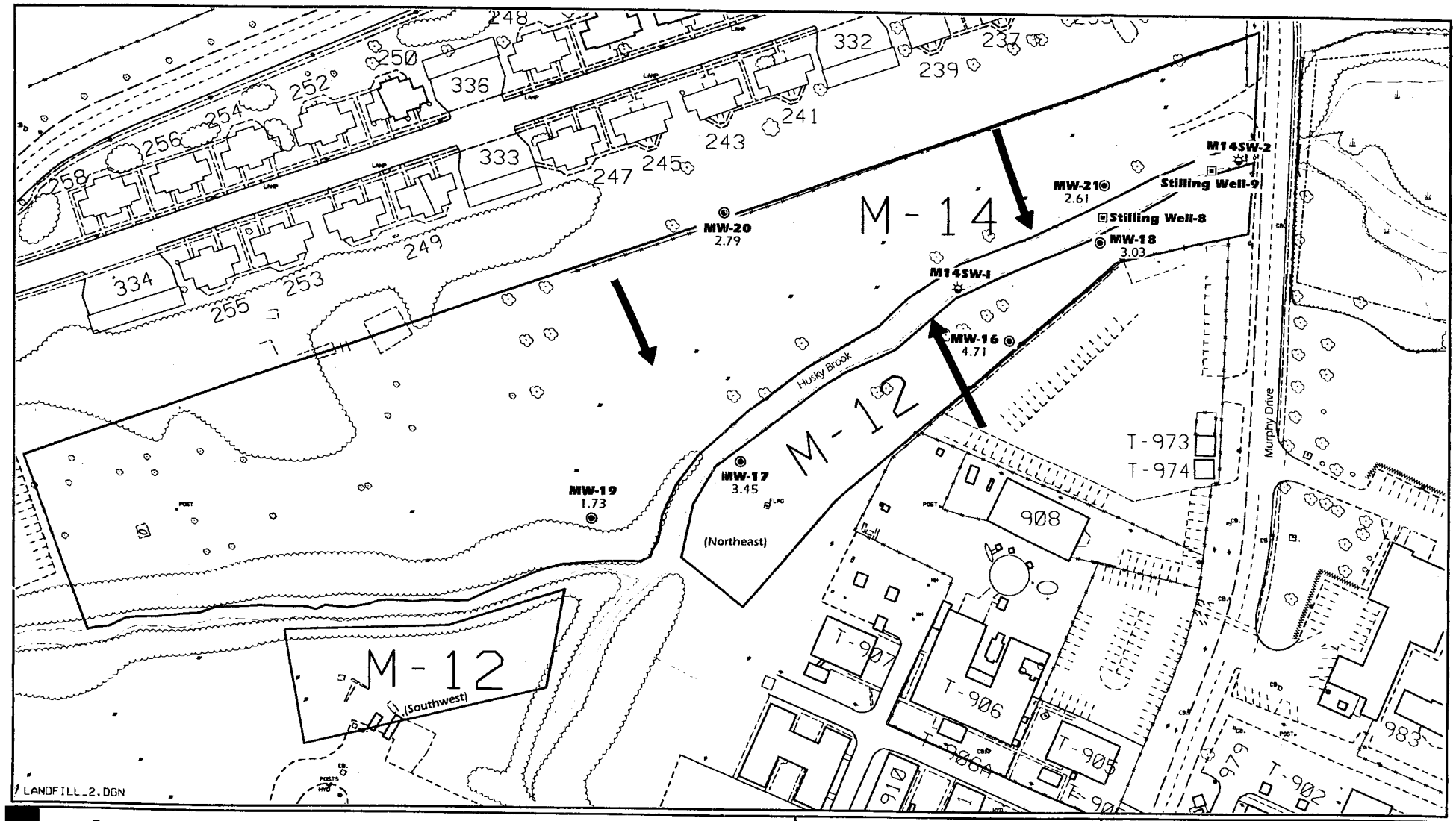
0 10 20 30 40 50

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 SW

FIGURE 4.2-19
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-12 SW

95P-323B 6/27/95



Fort Monmouth, Main Post

FIGURE 4.2-20
LANDFILLS 12 (M-12) AND 14 (M-14)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)

Site M-14

4.2.9 Landfill 14 (M-14)

4.2.9 1 Site Location

Landfill 14 (M-14) is located on the north bank of Husky Brook in the area west of Murphy Drive (Figure 4.2-15). This area is north of the suspected location of Landfill 12. The approximate area of site M-14 is 300,000 ft^2 (6.9 acres).

4.2.9.2 Site History

Both a 1935 Fort Monmouth map and the 1940s aerial photograph show a marshy area in this location. According to the IA, Landfill 14 was used in 1965 and 1966 for the disposal of building rubble that was covered by dredgings from Husky Brook Lake. A figure in Cosulich shows a 1940s-era landfill in the western part of the area. This 1940s landfill may have contained general domestic and industrial wastes similar to that found in other Main Post landfills.

As part of an NJPDES permit, surface-water samples have been taken at two locations in Husky Brook since February 1986. The results are summarized in the recent report (WESTON, 1993). No compounds were detected in concentrations above the NJDEP surface-water criteria.

4.2.9.3 Sampling Effort

GPR and magnetometer surveys were conducted in the western half of this site to ascertain whether the landfill extends into this area. Three monitor wells (MW-19 through MW-21), shown in Figure 4.2-15, were installed and sampled twice for TCL +30 parameters, TAL metals, and cyanide. Tidal monitoring was conducted at the same time as the tidal monitoring at Landfill 12. Surface-water samples were taken at M14SW-1 and M14SW-2.

4.2.9.4 Geophysical Results

The magnetometer survey at site M-14 shows the majority of the site to have background total magnetic field readings of approximately 54,000 nT, as shown on the total magnetic field contour plot in Figure 4.2-21. However, anomalous readings exist at grid coordinates along the 100N traverse from 0E to 700E, 20N/100E, 40N/760E, 40N/810E, and 0 to 90S/300E to 700E. These anomalies, mostly represented by the blue contour interval or approximately 48,000 nT, can be attributed to cultural features such as a buried gas main, a fence, playground apparatus, and overhead power lines, respectively. The magnetic gradient component confirms the total field anomalies as shown in Figure 4.2-22. A smaller discrete anomaly exists at grid coordinate 40N from 420E to 470E, which is indicative of buried ferrous material.

The overhead power lines could be masking the magnetic response that any potential buried ferrous material may have, however, the GPR survey was conducted to identify any subsurface "disturbances" such as metallic fill material. Chaotic radar reflectors, indicative of fill material, coarse-grained soils, or disturbed soils, were found mainly along the treeline at grid coordinates 0 to 60S/150E to 250E, and 75S to 120S/400E to 475E. Chaotic radar reflectors, corresponding to a magnetic gradient anomaly, exist at 0 to 20N/450E to 575E, and are indicative of ferrous material. Hyperbolic radar signatures, identified as the gas main, were revealed along the 100N traverse at a depth of approximately 3 ft bgs.

While magnetometer and GPR anomalies exist throughout the site, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material, as described in the lithologic logs, and the lack of metallic material.

4.2.9.5 Hydrogeologic Interpretation

Lithologic logs from site monitor wells indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of concrete rubble, charcoal, wood, and glass fragments intermixed with a gray-green silty fine-coarse-grained sand with little clay and gravel.

Groundwater saturation was observed in the boreholes during activities between 4 and 6 ft bgs. The three monitor wells were screened across the water table, with total depths of 14, 15, and 16 ft bgs in MW-19, MW-20, and MW-21, respectively. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is south toward Husky Brook (Figure 4.2-20). Based on groundwater elevation measurements, monitor wells MW-19 and MW-21 are downgradient of the M-14 area.

4.2.9.6 Groundwater Sampling Results

Monitor wells at site M-14 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-11 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentration, where appropriate.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected in the site monitor wells from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells in either sampling round.

Table 4.2-11
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-14

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW19 2/20/95, 3/10/95 (avg.)	MW20 2/22/95, 3/13/95 (avg.)	MW21 2/22/95, 3/9/95 (avg.)
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**393**	**903.5**	**1380**
Arsenic	1.9	8*	89.3	ND	6.3	2.33
Barium	1.7	2000	699	214.5	48.7	35.2
Beryllium	0.9	20*	7[1]	ND	0.245	ND
Calcium	10.4	NLE	45400	38700	31850	32800
Cobalt	3.0	NLE	18.3	2.03	ND	ND
Chromium	2.9	100	191	4.925	9.625	12.65
Copper	1.9	1000	730[1]	8.15	8.3	2.35
Iron	6.4	300	431000	**41400**	**7960**	**5685**
Potassium	685	NLE	137000	4660	5316	7490
Magnesium	18.3	NLE	62700	5185	4270	4060
Manganese	1.8	50	480[1]	**550.5**	**199.5**	**64.45**
Sodium	30.5	50000	197000[1]	8815	22600	6700
Nickel	10.8	100	187	3.35	5.65	ND
Lead	1.6	10*	22.7	**18.75**	4.65	3.45
Vanadium	2.3	NLE	108	ND	6.25	8.75
Zinc	3.8	5000	233	89.5	14.5	13.5

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected at the noted quantification limits

NLE - No Level Established

[1] - Monmouth County maximum background concentration.

Metals

As indicated in Table 4.2-11, of the 17 metals detected in site groundwater, 4 (aluminum, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC. In addition, manganese was found in a concentration greater than both the site-specific and the Monmouth County maximum background level in MW-19 only. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern. Aluminum and lead were found in concentrations below those determined for site-specific and Monmouth County maximum background levels.

Although the concentration of iron exceeded the Monmouth County background level in MW-19, the concentration was well below the site-specific background level established at the Main Post.

The lower reaches of Husky Brook are tidal. The sodium content of surface water is saline (Subsection 4.2.9.7), suggesting that saltwater has encroached upon this section of Husky Brook. The relatively high sodium content of the monitor wells in the vicinity of Husky Brook is caused by the saltwater encroachment.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.9.7 Surface-Water Sampling Results

Two surface-water samples, M14SW-1 and M14SW-2 were collected at M-14 (Figure 4.2-15). Both samples were determined to be saltwater based on conductivity and salinity results, and total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP saltwater criteria and background (Table 4.2-12).

Table 4.2-12
Fort Monmouth - Main Post
Summary of Detected Compounds in Surface Water
Total and Soluble - Site M-14

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA[a] SALINE WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS SAMPLING DATE - 12/1/1994			
					M14 (Total)		M14 (Soluble)	
					SW-1	SW-2	SW-1	SW-2
VOC's (µg/L)								
1,2-Dichloroethene (total)	4.4	NLE	ND	ND	4 J	5 J	NA	NA
SVOCs (µg/L)								
bis-(2-Ethylhexyl)phthalate	9.7	5.92 (hc)	ND	ND	ND	2 J	NA	NA
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	188	205	ND	26.7
Barium	2.1	NLE	44.7	39.4	30	33.1	27.2	31.2
Calcium	12	NLE	31600	30900	16200	20400	16300	20300
Cobalt	2.4	NLE	8.1	4.1	ND	ND	ND	ND
Copper	2.4	NLE	3.2	4	2.9	5.3	5.6	4.9
Iron	4.7	NLE	6210	405	1920	2070	839	999
Lead	1.6	NLE	10	ND	3.4	2.8	3.1	3.2
Magnesium	38.2	NLE	5440	5120	9770	21400	9540	21600
Manganese	2.0	100 (h)	113	98.6	65.6	68.4	63.6	66.1
Nickel	12.8	NLE	22.9	16.1	14.2	ND	ND	ND
Potassium	821	NLE	5060	4280	4840	8320	4240	8220
Sodium	15.4	NLE	26700	26200	70100	168000	69100	171000
Zinc	2.8	NLE	35.1	23.8	23.7	23.4	14.4	13.2

[a] - NJDEP Surface Water Quality Standards (1993).
h -Non carcinogen effect-based human health criteria as a 30 day average.
hc - Carcinogen effect-based human health criteria as 70 year average.
ND - Indicates that the compound was not detected at the noted quantification limit.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limit.
NLE - No Level Established
NA - Not Analyzed.
Compounds dectected above NJDEP Surface Water Criteria are noted by bold numbers.

VOCs

VOCs were analyzed for but were not detected above the laboratory quantitation limit in site surface-water samples.

SVOCs

SVOCs were analyzed for but were not detected above the laboratory quantitation limit in site surface-water samples.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface-water samples.

Metals

As indicated in Table 4.2-12, no metals were found in concentrations exceeding the NJDEP surface-water criteria (saline).

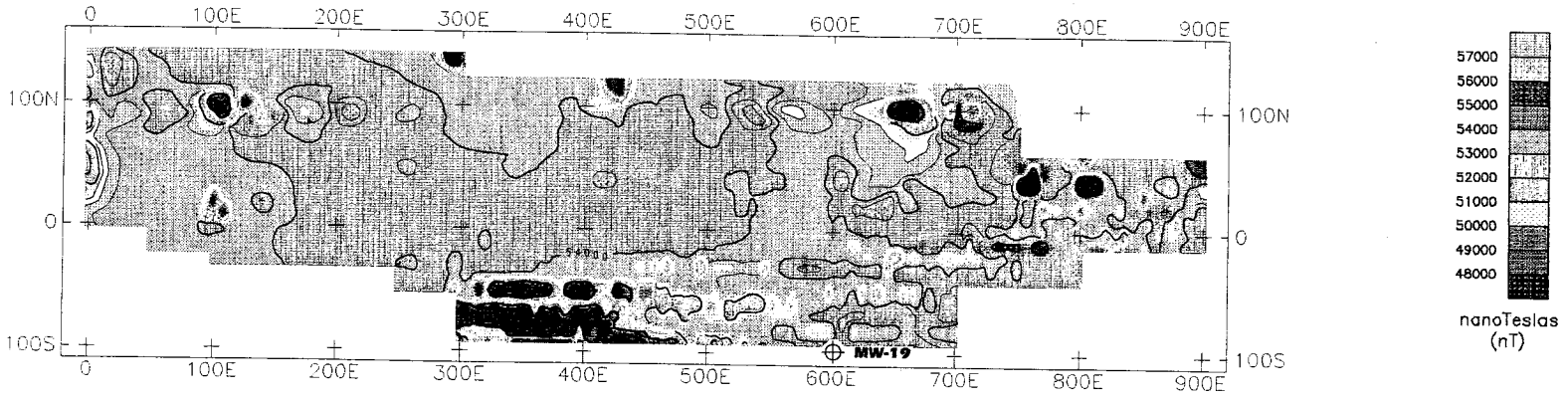
4.2.9.8 Recommendations

The results of the geophysical surveys indicate that fill and some metallic debris exist throughout the site; however, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material and the small amount of subsurface metallic material present at the site.

The groundwater and surface-water sampling results indicate that no compounds of concern were detected above NJDEP GWQC and surface-water criteria.

Tidal monitoring was conducted at site M-12 and site M-14 simultaneously. The results of the tidal monitoring are discussed in Subsection 6.1.6.

Although no compounds of concern were identified at site M-14, because of the site's history of being used as a landfill, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.



LEGEND

Monitor Well

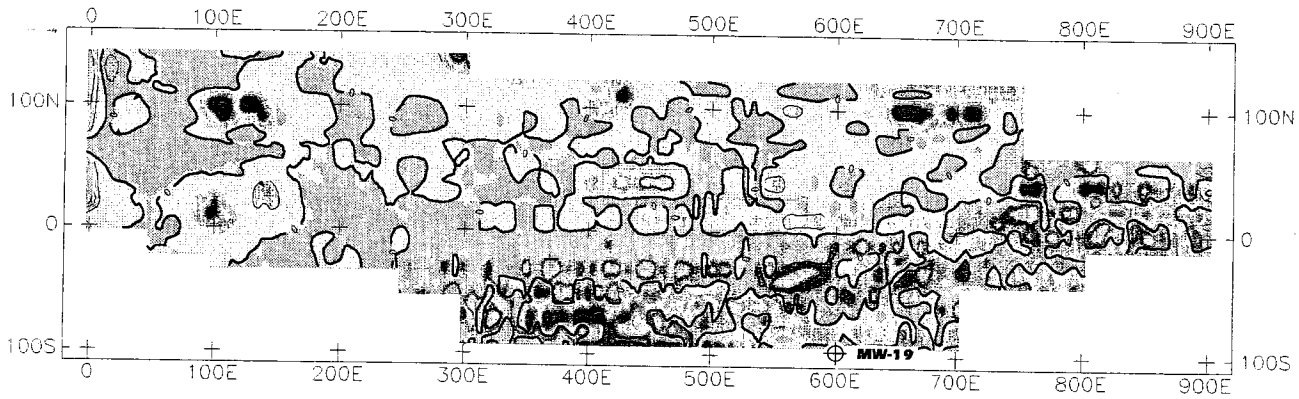
0 50 100 150 200

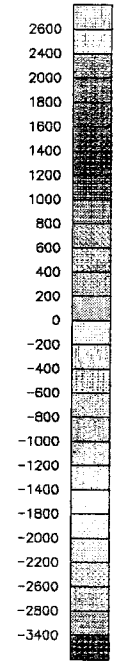
SCALE IN FEET

Fort Monmouth, Main Post Site M-14

FIGURE 4.2-21
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-14

95P-3239 6/27/95





nanoTeslas per meter
(nT/m)

LEGEND

Monitor Well

0 50 100 150 200
SCALE IN FEET

Fort Monmouth, Main Post Site M-14

FIGURE 4.2-22
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-14

95P-3240 6/27/95

Site M-15

4.2.10 Water Tank (M-15)

4.2.10.1 Site Location

The water tank is located on the eastern portion of the Main Post (Figure 4.2-23). The tank is a vertical aboveground tank mounted on a concrete pad. The approximate area of site M-15 is 3,000 ft^2 (0.07 acre). There are soil patches without vegetation along the eastern circumference of the tank and visible paint chips.

4.2.10.2 Site History

Interviews with site personnel indicate that the tank was constructed in the 1940s and was always used as a water tank. The IA described the site as the "Water Tank," but did not discuss why the tank was identified as a hazardous waste site.

4.2.10.3 Sampling Effort

There is no evidence that the water tank or its contents are potential sources of contamination; however, the stressed vegetation may have been caused by the use of herbicides and the paint chips may contain lead. Therefore, two surface soil samples (0 to 6 inches) were collected, one at the bottom of the grade and one halfway up the grade, and were analyzed for TCL SVOCs, TAL metals, and pesticides (Figure 4.2-23). The SVOCs were analyzed for even though this was not proposed in the original scope of work (CDAP).

4.2.10.4 Soil Sampling Results

Two surface soil samples were collected (0 to 0.5 ft bgs), one at the bottom of the grade and one halfway up the grade, and were analyzed for the parameters listed in Table 3.6-1. The analytical results are listed in Appendix D. Table 4.2-13 compares the detected compounds in site soil with the NJDEP Residential Direct Contact Soil Cleanup Criteria (SCC), and then compares the results to the subsequent site-specific and Monmouth County background levels, where appropriate. In

Table 4.2-13
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soils at Site M-15

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SAMPLE DATE	
				SS01-A01 11/29/94	SS02-A01 11/29/94
SVOCs (mg/kg) - Sample Interval (6"to 12" bgs)					
Anthracene	0.152	10,000	0.1 J	0.041 J	ND
Phenathrene	0.165	NLE	0.39	0.37 J	0.17 J
Fluoranthene	0.198	2300	0.46	0.53	0.36 J
Pyrene	0.178	1700	1.5	0.72	0.43
Benzo(a)anthracene	0.162	0.9	0.65	0.31 J	0.18 J
Chrysene	0.145	0.9	0.65	0.33 J	0.23 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	.069 J	.077 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.45	0.35 J
Benzo(k)fluoranthene	0.205	0.9	0.43	0.13 J	0.110 J
Benzo(a)pyrene	0.162	0.66	0.6	0.27 J	0.200 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.16 J	0.120 J
Dibenzo(a,h)anthracene	0.198	0.66	0.079 J B	.041 J	ND
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.16 J	0.11 J
PESTICIDES AND PCBs (mg/kg) Sample Interval (0" to 6" bgs)					
4,4'-DDE	0.0038	2	0.096 P	**6.6 CD**	1.0 CD
4,4'-DDT	0.0037	2	.110 D	**7.9 CD**	1.0 CD
METALS TOTAL (mg/kg) Sample Interval (0" to 6"bgs)					
Aluminum	3.9	NLE	15200	5300	5030
Arsenic	0.35	20	22.9	8.3	8.9
Barium	0.17	700	32.3	68.4	101
Beryllium	0.1	1	2	0.6	0.69
Calcium	2.2	NLE	921	815	1860
Cadmium	0.86	1	0.116[1]	**2.9**	**4.5**
Cobalt	0.71	NLE	2.5	6.1	7.8
Chromium	1.6	500	269	109	95.5
Copper	2.2	600	8	34	66.5
Iron	0.58	NLE	55800	33400	37700
Lead	0.49	400[2]	25.9[1]	**5340**	**6130**
Magnesium	9.6	NLE	7230	1560	1600
Manganese	0.18	NLE	90.7	159	187
Nickel	1.4	250	8.4	8.3	6.9
Potassium	(12.3-25.8)	NLE	15400	2990	2770
Sodium	3.8	NLE	51.6	23.4	33.1
Silver	0.54	110	1.1	1.4	1.5
Selenium	0.36	63	1.9	0.45	2.1
Vanadium	0.53	370	94.1	27.5	25.9
Zinc	0.41	1500	81.4	**7750**	**12800**

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
bgs - Below Ground Surface
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
C- Pesticide identification was confirmed by GC/MS
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
B - Compound was observed in the sample and associated laboratory blank.
D - surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
ND - Indicates that the compound was not detected at or below the quantification limits
NLE - No Level Established
Note:MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability
[1] Monmouth County maximum background concentration.
[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

addition, compounds that exceed the SCC are subsequently compared to the impact to groundwater SCC because there were no monitor wells installed at the site.

SVOCs

Three SVOCs were detected above laboratory quantitation limits in site soils, but were well below NJDEP SCC. In addition, all other detected compounds with established SCC were found in concentrations below their respective criteria. The detected compounds did not exceed the impact to groundwater SCC.

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected in concentrations above NJDEP SCC and background in SS-01. The concentrations of 4,4'-DDE and 4,4'-DDT were well below the respective impact to groundwater criteria (Figure 4.2-24). Pesticides were not detected above criteria in SS-02. PCBs were not detected in site surface soil samples.

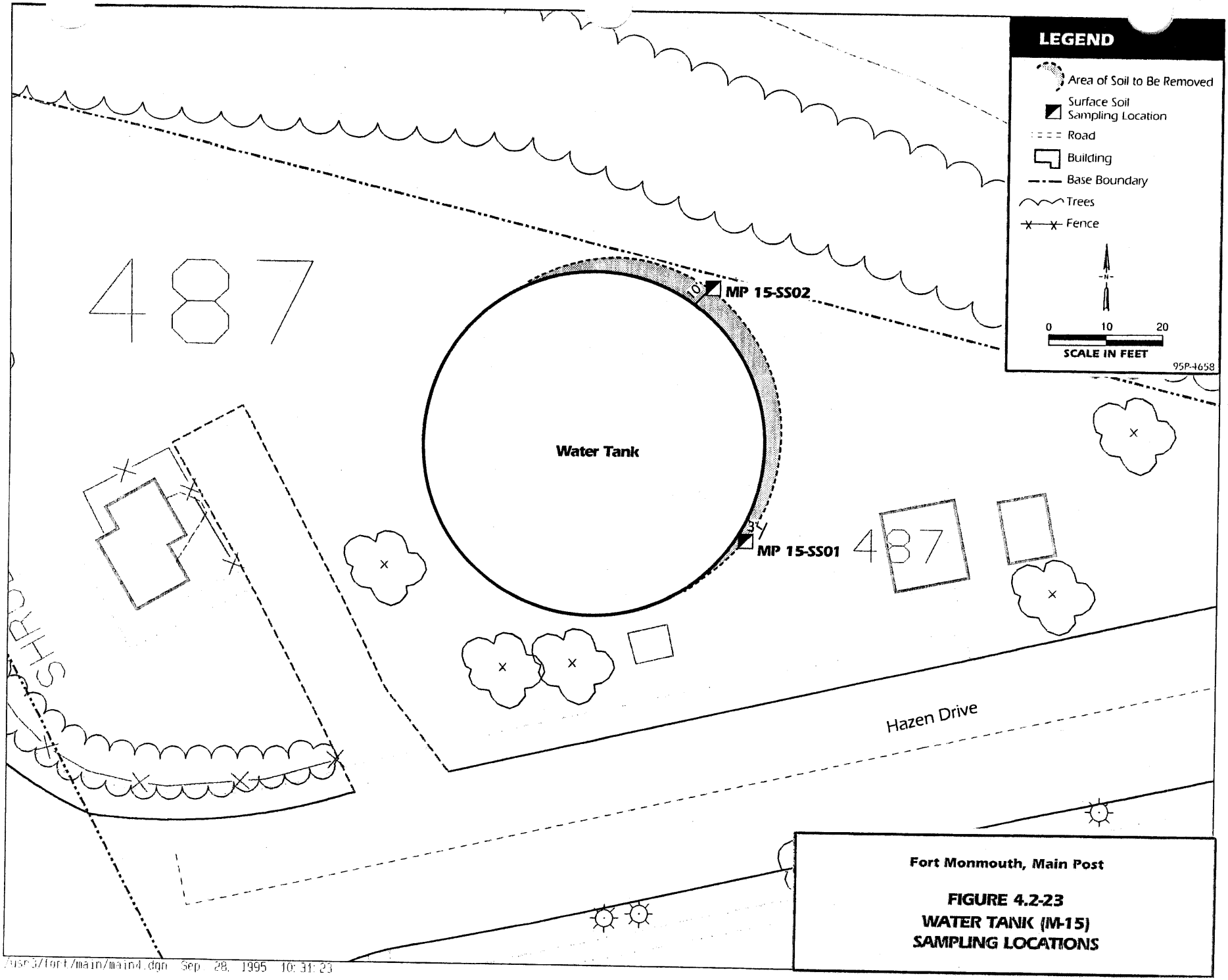
Metals

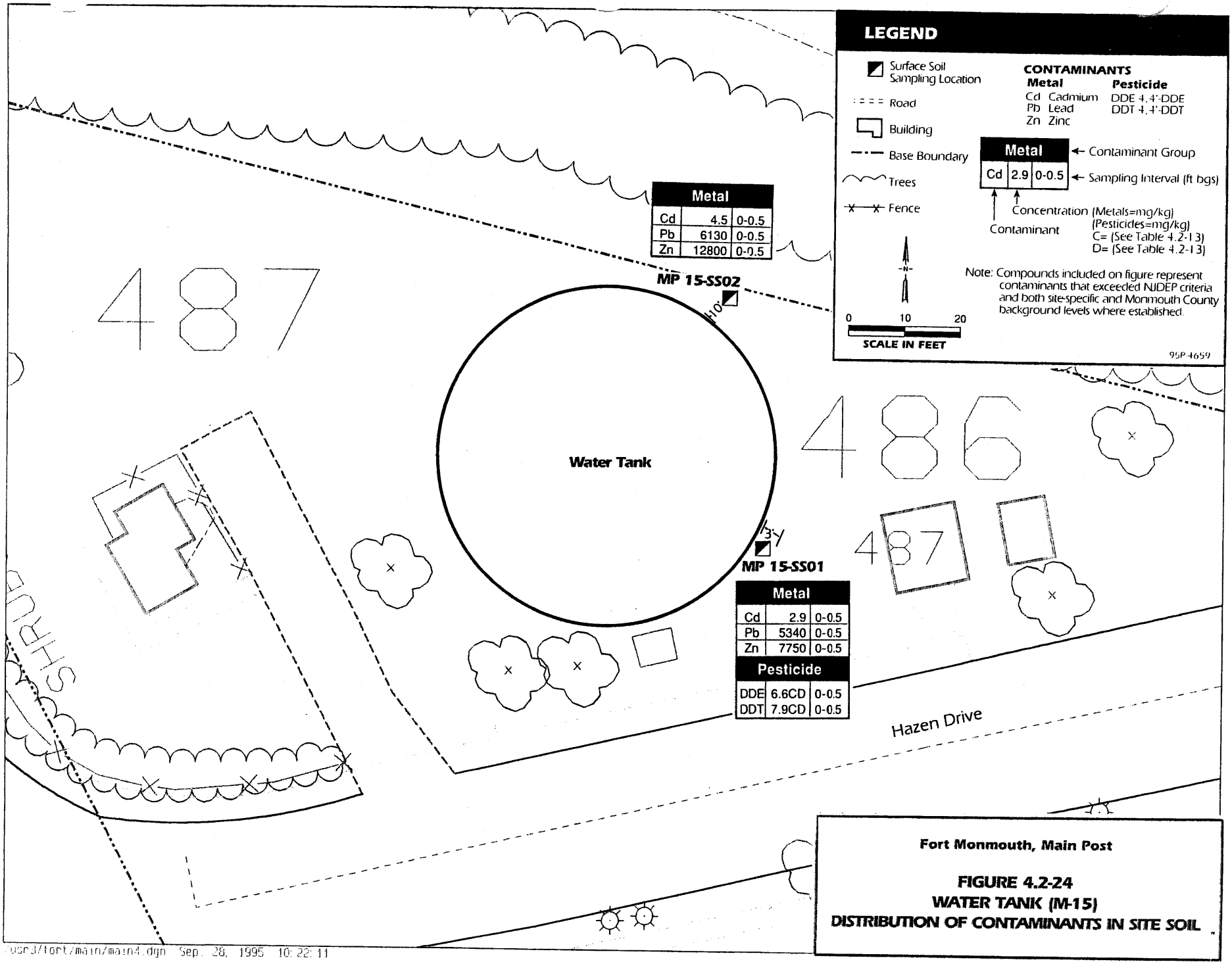
As indicated in Table 4.2-13, of the 20 metals detected in site soil, 3 (cadmium, lead, and zinc) were found in concentrations exceeding the NJDEP SCC. In addition, these metals were found in concentrations greater than those determined for site-specific and Monmouth County maximum background at the Main Post. Figure 4.2-24 presents the locations of compounds detected above the SCC and the established maximum background concentrations at the Main Post.

4.2.10.5 Recommendations

Two pesticide compounds and three metals, cadmium, zinc, and lead, were detected in surface soil at levels that exceeded NJDEP SCC and maximum background.

DPW has submitted the necessary documentation to Headquarters, Army Materiel Command/Army Environmental Center (HQAMC/AEC) to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination encompasses the perimeter of the tank, about 10 feet at the widest point. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 13 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 6 inches. NJDEP will be requested to send a representative to observe the excavation.


LEGEND
Area of Soil to Be Removed
Surface Soil Sampling Location
Road
Building
Base Boundary
Trees
Fence
N
0
10
20
SCALE IN FEET
95P-4658
487
MP 15-SS02
Water Tank
MP 15-SS01
487
Hazen Drive
SHAW
Fort Monmouth, Main Post
FIGURE 4.2-23
WATER TANK (M-15)
SAMPLING LOCATIONS
/usr3/fort/main/main4.dgn Sep 28, 1995 10:31:23



Fort Monmouth, Main Post

FIGURE 4.2-24
WATER TANK (M-15)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL

Site M-16

4.2.11 Former Pesticide Storage Building (M-16)

4.2.11.1 Site Location

The former Pesticide Storage Building (M-16) was misidentified as Building 167 in the IA. The building actually used for pesticide storage was Building S-498, which is located on the south-side of Riverside Avenue, north of the marina (Figure 4.2-25). The approximate area of site M-16 is 1,400 ft^2 (0.03 acre).

4.2.11.2 Site History

Building S-498 was built in 1939. According to long-term Fort Monmouth employees, this building was used as a pesticide control shop in the 1940s and 1950s, before this function was moved to Building T-65. Building S-498 is currently used for miscellaneous storage. During the 1993 site visit, workers were bricking in the windows. The front of the building has a tile floor and was most likely used for office space. The back wing of the building has a cement floor with a centrally located floor drain. The southeast corner of the floor has sunk 2 to 3 inches, breaking away from the foundation and creating a crack in the area of the door. The cracks and floor drain could have allowed the release of spilled pesticides. Pesticide mixing reportedly took place inside the building with rinse water dumped in a sink that went to the sanitary sewer.

4.2.11.3 Sampling Effort

Four soil samples were collected from 6 to 12 inches bgs from areas that are not paved south of the building and analyzed for TCL +30 parameters (Figure 4.2-25). Soil samples were collected from two discrete intervals in the monitor well boring and analyzed for TCL +30 parameters and TAL metals. TAL metal analysis was not proposed in the CDAP but samples were collected at SB-01. One monitor well (MW-22) was south of Building S-498. Two rounds of groundwater samples from the monitor well were analyzed for TCL +30 parameters. In addition, an attempt was made to determine whether the floor drain discharges to the sanitary sewer at Building S-498. However, because the original floor in the building was reconstructed as a result of past

flooding problems, the original drainage line was no longer accessible and, consequently, could not be traced from Building S-498 to the sanitary sewer.

4.2.11.4 Hydrogeologic Interpretation

The lithologic log from MW-22 indicates that the lithology consists of a thin (0.4 ft) soil cover with crushed asphalt (to 2 ft bgs) underlain by interbedded green-brown fine-coarse sandy clay and fine-coarse sand with little clay.

Saturation was observed at 1 ft bgs. Monitor well MW-22 was screened in the saturated zone and was completed to a depth of 14.5 ft bgs. The site-specific groundwater flow direction is estimated to be south toward Oceanport Creek (Figure 4.2-26).

4.2.11.5 Soil Sampling Results

One shallow soil boring (SB-01) was installed in the MW-22 borehole to a depth of 6 ft bgs. Soil samples were collected in the borehole from two discrete intervals, i.e., 0 to 2 ft bgs and 2 to 4 ft bgs. In addition, four surface soil samples were collected from the 0 to 0.5 ft bgs interval. Soil samples were sampled for the analytical parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.2-14 compares detected compounds with the NJDEP SCC, and then compares the results to the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

VOCs were not detected in site soils.

SVOCs

Three SVOCs were detected slightly above laboratory quantitation limits in site soils. The compounds were detected well below their respective NJDEP SCC. In addition, SVOCs

Table 4.2-14 (1 of 2)
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soil at Site M-16

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A01 12/15/94 (0-2 ft bgs)	SB01-A02 12/15/94 (2-4 ft bgs)	SS01-A01 11/29/94 (1)	SS02-A01 11/29/94 (1)	SS03-A01 11/29/94 (1)	SS04-A01 11/29/94 (1)
SVOCs (mg/kg)									
bis(2-ethylhexyl)phthalate	0.32	49	0.19J	ND	0.23J	0.084 J	1.1 J	0.26 J	0.64
Phenathrene	0.165	NLE	0.39	0.140 J	ND	ND	ND	0.045 J	ND
Di-n-octylphthalate	0.185	1100	ND	ND	ND	0.845	1.1 J	0.26 J	0.64
Fluoranthene	0.198	2300	0.46	0.330 J	ND	0.046 J	ND	0.1 J	0.073 J
Pyrene	0.178	1700	1.5	0.220 J	ND	0.060 J	ND	0.14 J	0.096 J
Benzo(a)anthracene	0.162	0.9	0.65	0.092 J	ND	ND	ND	0.069 J	0.039 J
Chrysene	0.145	9	0.65	0.150 J	ND	ND	ND	0.063 J	0.043 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.150 J	ND	ND	ND	0.12 J	0.065 J
Benzo(k)fluoranthene	0.205	0.9	0.43	0.069 J	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.162	0.66	0.6	0.084 J	0.43	ND	ND	0.575	0.046 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.067 J	ND	ND	ND	0.049 J	0.04 J
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.063 J	ND	ND	ND	ND	ND
PESTICIDES AND PCBs (mg/kg)									
Aldrin	0.0021	0.04	ND	ND	ND	ND	**0.17 C**	ND	ND
gamma-BHC (Lindane)	0.0021	0.52	ND	ND	ND	0.0034	0.17	0.0059	ND
Heptachlor	0.0021	0.15	ND	ND	ND	ND	**2.5 CD**	0.0099	ND
Dieldrin	0.0042	0.042	ND	**0.12**	ND	0.017	**2.0 CD**	**0.21 D**	**0.37 C**
4,4'-DDE	0.0037	2	0.091 D	1 C	0.1	0.35 CD	**3.5 CD**	0.48 CD	0.57 CD
4,4'-DDD	0.0037	3	0.0096 P	1.5 C	0.2	0.13 D	ND	0.22 D	1.7 CD
4,4'-DDT	0.00037	2	0.11 D	.71 C	0.072	1.1 CD	**23 CD**	**2.0 C D**	1.6 CD
Endrin Ketone	0.0037	NLE	ND	ND	ND	ND	0.092	ND	ND
alpha-Chlordane	0.0018	NLE	ND	0.042	0.0096	0.05	11 CD	0.2 D	0.86 CD
gamma-Chlordane	0.0018	NLE	ND	0.033 P	0.0088 P	0.05	13 CD	0.2 D	0.92 CD

Note: See page (2 of 2) for Table 4.2-14 Text, etc.

Table 4.2-14 (2 of 2)
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soil at Site M-16

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A01 12/15/94 (0-2 ft bgs)	SB01-A02 12/15/94 (2-4 ft bgs)	SS01-A01 11/29/94 (1)	SS02-A01 11/29/94 (1)	SS03-A01 11/29/94 (1)	SS04-A01 11/29/94 (1)
METALS TOTAL (mg/kg)									
Aluminum	3.9	NLE	15200	6840	11900	NA	NA	NA	NA
Arsenic	0.35	20	22.9	8.8	16	NA	NA	NA	NA
Barium	0.17	700	32.3	36.3	29.7	NA	NA	NA	NA
Beryllium	0.1	1	2	0.84	0.8	NA	NA	NA	NA
Calcium	2.2	NLE	921	1500	1200	NA	NA	NA	NA
Cobalt	0.7	NLE	2.5	5.0	2.8	NA	NA	NA	NA
Chromium	1.6	500	269	54.6	59.5	NA	NA	NA	NA
Copper	2.2	600	8	24.2	11.7	NA	NA	NA	NA
Iron	0.58	NLE	55800	21300	36200	NA	NA	NA	NA
Lead	0.4	400[3]	25.9[2]	35.3	16.3	NA	NA	NA	NA
Magnesium	9.6	NLE	7230	1670	2340	NA	NA	NA	NA
Manganese	0.18	NLE	90.7	74.5	37.7	NA	NA	NA	NA
Nickel	1.4	250	8.4	8.0	5.4	NA	NA	NA	NA
Potassium	(12.3-25.8)	NLE	15400	2990	3660	NA	NA	NA	NA
Sodium	3.8	NLE	51.6	283	232	NA	NA	NA	NA
Selenium	0.3	63	1.9	0.67	0.96	NA	NA	NA	NA
Vanadium	0.53	370	94.1	37.6	43.5	NA	NA	NA	NA
Zinc	0.41	1500	81.4	93	42.1	NA	NA	NA	NA

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
C- Pesticide identification was confirmed by GC/MS
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis.
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
B - Compound was observed in the sample and associated laboratory blank
NA- Not Analyzed - Not Proposed ; NLE - No Levels Established
ND - Indicates that the compound was not detected at or below the quantification limits
ft bgs. - feet below ground surface.
[1] - VOC's/SVOC's were collected from sample interval 6" to 12" bgs; Pesticide/PCB's were collected from sample interval 0.0" to 6" bgs.
Note: Metal analysis was not proposed or analyzed at surface soil locations. Metals analysis was not proposed at SB-01,but was analyzed.
Note: MDL's for metal analysis are actually the highest detection limit with potassium given as a range due to high variability.
[2] Monmouth County maximum background concentration.
[3] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

detected below laboratory quantitation limits were found in levels well below their respective criteria where established.

Pesticides/PCBs

A total of 10 pesticide compounds were detected above laboratory quantitation limits in site soil. Five pesticides (dieldrin, heptachlor, aldrin, 4,4'-DDE, and 4,4'-DDT) were found in concentrations exceeding the NJDEP SCC. Dieldrin was detected in soil boring SB-01 (0 to 2 ft bgs) and in surface soil samples SS-01 through SS-04. Heptachlor, aldrin, 4,4'-DDE, and 4,4'-DDT were detected at or above criteria in SS-01, SS-02, SS-03, and SS-04. None of the pesticides were detected above their respective impact to groundwater criteria. PCBs were not detected in site soil (Figure 4.2-27).

Metals

As indicated in Table 4.2-14, no metals were detected in concentrations above either the NJDEP SCC or established maximum background concentrations at the Main Post.

4.2.11.6 Groundwater Sampling Results

Monitor well MW-22 was sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-15 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in MW-22 from either sampling round.

Table 4.2-15
Fort Monmouth -Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater
Site M-16

COMPOUND	METHOD DETECTION LIMIT	NJDEP GW QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW22A01 2/17/95	MW22A02 3/9/95	MW22A02 (avg)
SVOCs (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	5 J	ND	1J	0.5 J

Compounds detected above NJDEP standards are noted by bold numbers.
GW - Ground water
NJDEP groundwater quality criteria consist of the higher number between the PQL or the STANDARD.
*PQL - Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
ND - Indicates that the compound was not detected at or below the quantification limits

SVOCs

SVOCs were not detected above laboratory quantitation limits in MW-22 from either sampling round. The SVOC bis(2-ethylhexyl) phthalate was detected below the laboratory quantitation limit and well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in MW-22 from either sampling round.

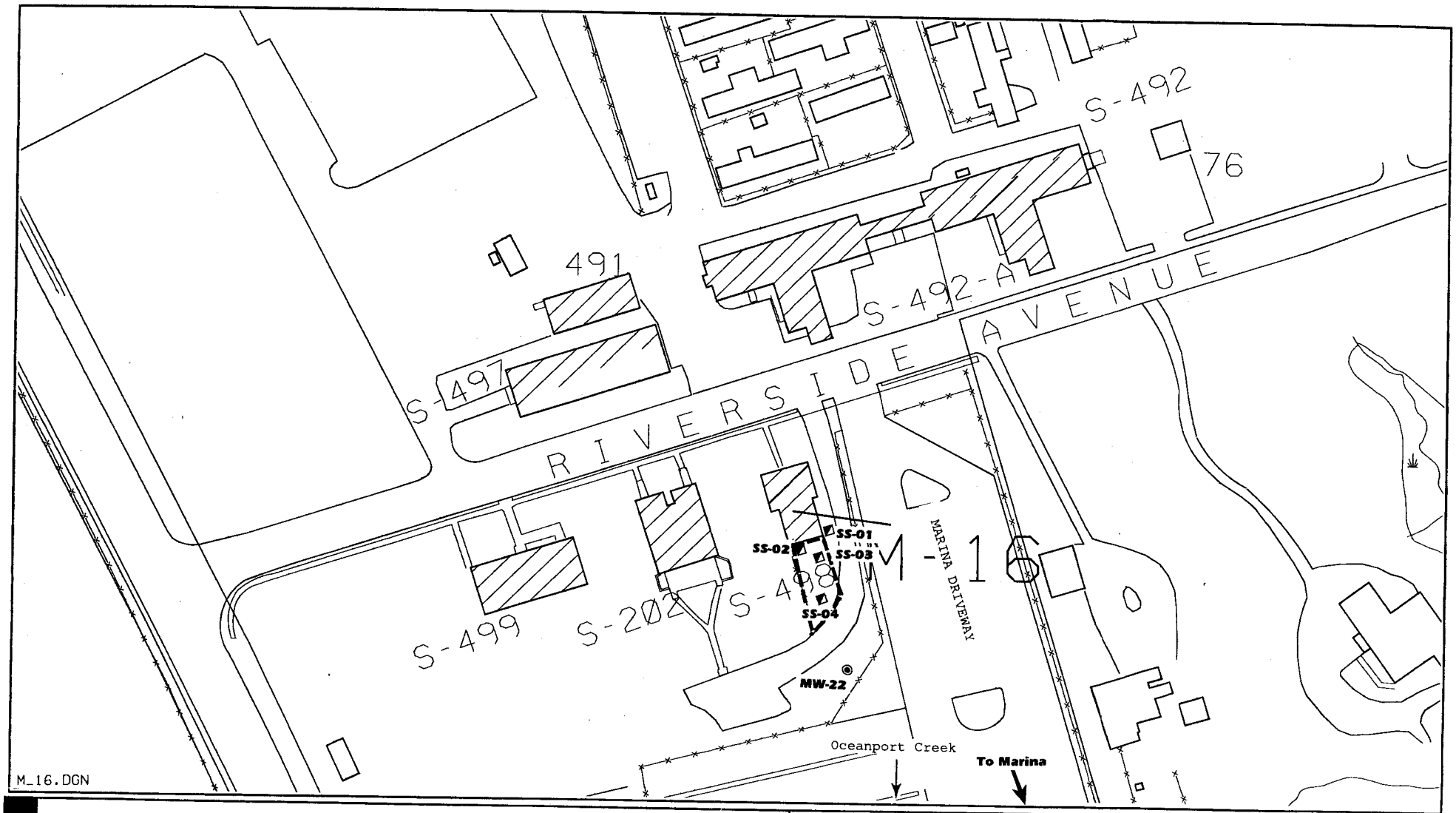
4.2.11.7 Recommendations

Pesticide compounds were detected at four surface soil sampling locations and in one soil boring sample (0 to 2-foot interval) in concentrations above NJDEP criteria and background.

No compounds of concern were detected in the groundwater above NJDEP criteria.

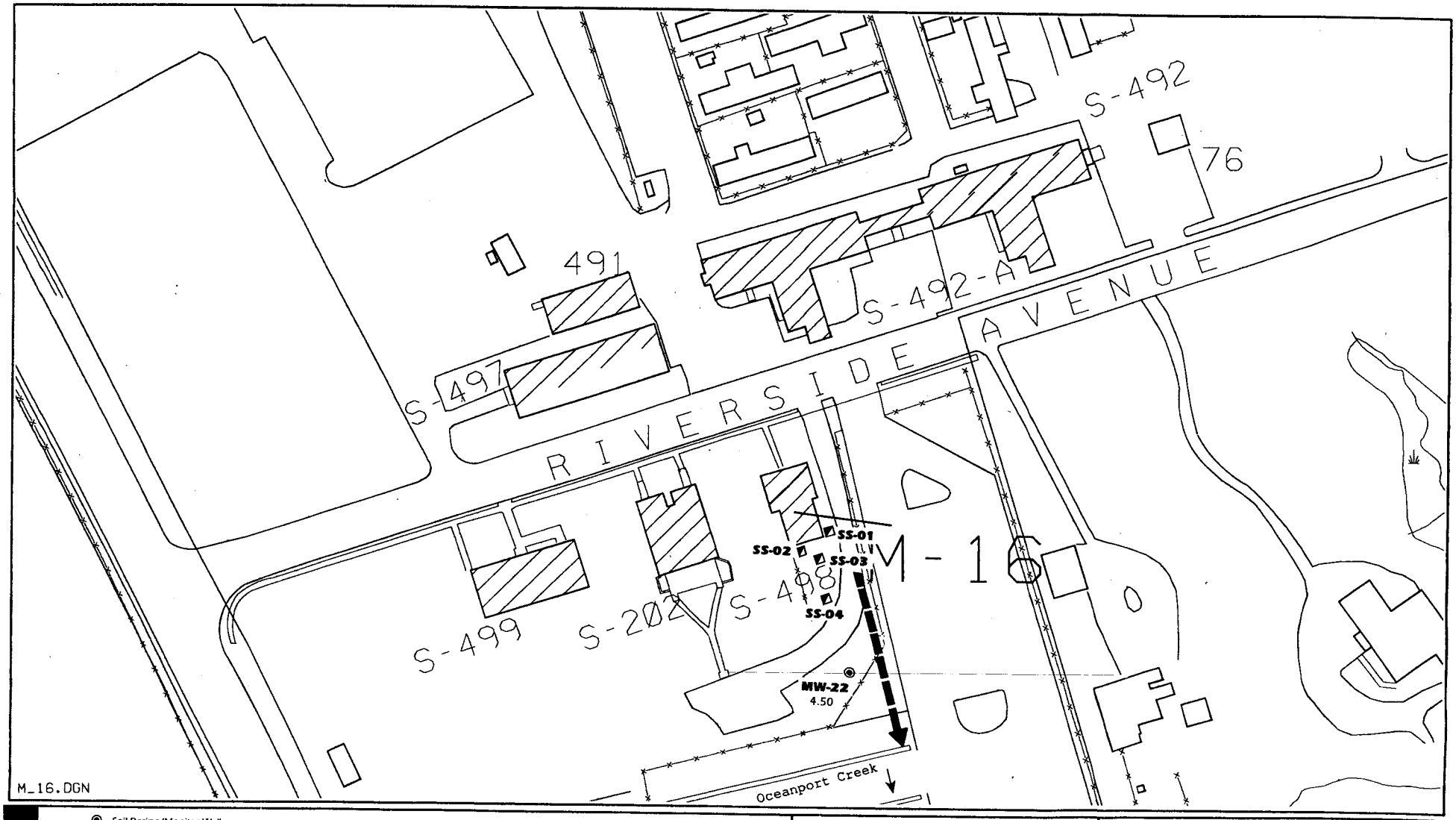
DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination is approximately 50 feet by 20 feet. The depth of contamination is assumed to be 12 inches. Excavation will be conducted in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 56 yd^3 of soil will be excavated, assuming that soil will be excavated to a depth of 12 inches. NJDEP will be requested to send a representative to observe the excavation.

The site monitor well will be properly abandoned due to the nondetection of compounds of concern in groundwater. The remedial activities proposed will remediate potential source areas of pesticides detected in soil.



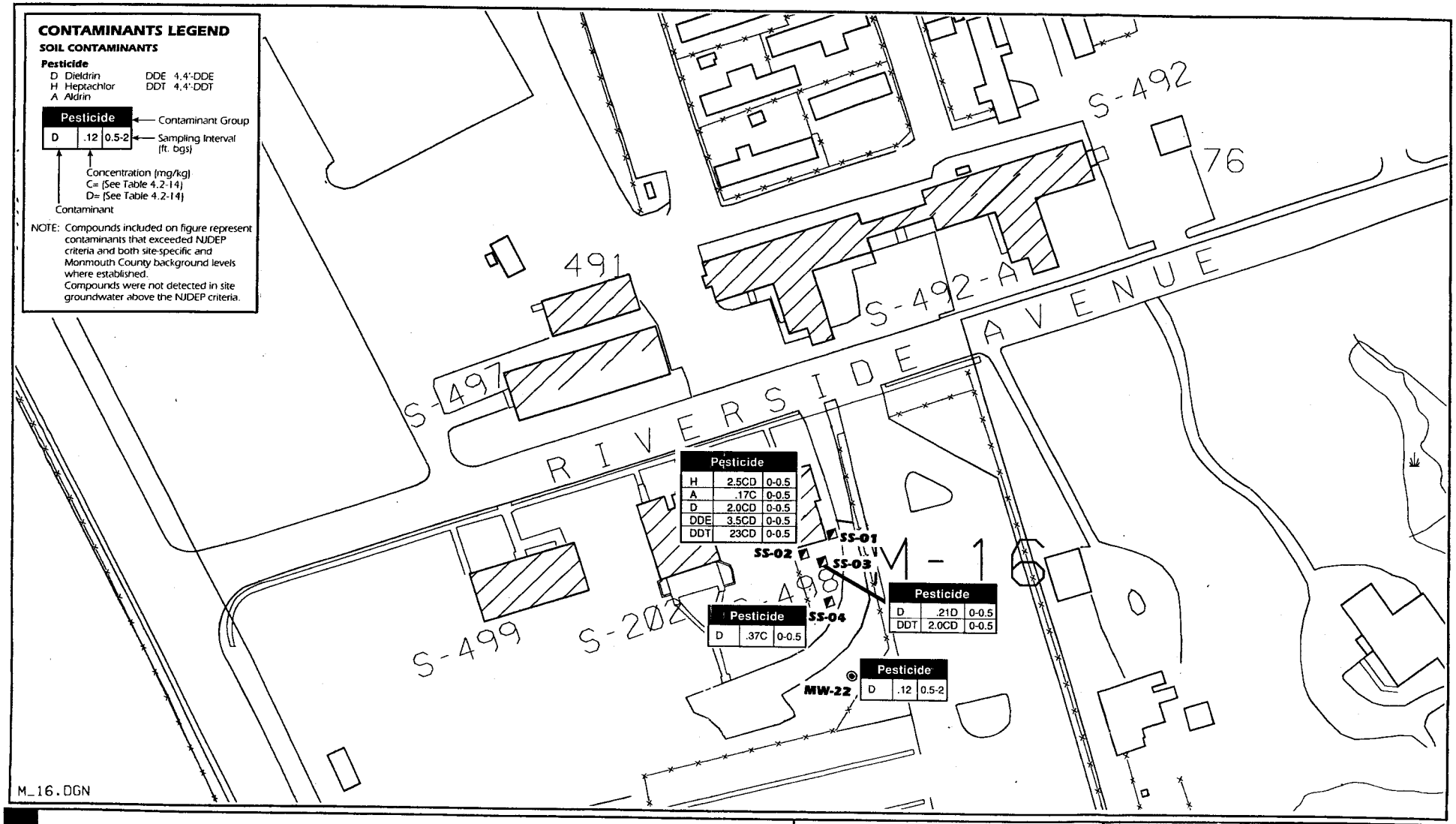
Fort Monmouth, Main Post

FIGURE 4.2-25
FORMER PESTICIDE STORAGE BUILDING (M-16)
SAMPLING LOCATIONS



Fort Monmouth, Main Post

FIGURE 4.2-26
FORMER PESTICIDE STORAGE BUILDING (M-16)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-27
FORMER PESTICIDE STORAGE BUILDING (M-16)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL

Site M-18

4.2.12 Former Training Area (M-18)

4.2.12.1 Site Location

The Army Signal School Training Area (M-18) is located in the northern part of the Main Post, between Parkers Creek to the north and Buildings 283, T-294, T-293, S-289, and S-145 to the south (Figure 4.2-28). The approximate area of site M-18 is 177,300 ft^2 (4.1 acres).

4.2.12.2 Site History

The Army Signal School Training Area has been used for military training exercises since 1919. Diesel and gasoline generators used to support these field exercises were reported in the IA to have been used 150 meters from Lafetra Creek, although the location shown in Figure 7 of the IA is closer to Parkers Creek. The IA reports that numerous fuel spills occurred in the generator area. A riot control agent was also used in this area for troop protective mask training for a limited period of time. During the 1993 site inspection, military training area exercises were being conducted in the M-18 area. Part of the area is paved. Based on the presence of concrete at the surface, there is a suspected debris disposal area used for the disposal of building rubble in the area north of Building 289.

4.2.12.3 Sampling Effort

GPR and electromagnetic (EM) surveys were conducted to investigate the extent of debris disposal north of Building 289. Nine soil borings in a grid pattern were drilled in this area (Figure 4.2-28). The original scope of work included the installation of 12 soil borings. However, because of difficult drilling locations in marshy areas, the borings were repositioned and fewer borings were installed. Soil samples were analyzed for VOCs and TPHs and were collected from either 6 to 12 inches or 12 to 18 inches below the bottom of the asphalt (to avoid bias from the asphalt that covers about half of this area) and either from intervals with visible staining or from just above the water table. If staining was observed, samples were collected for SVOC analysis. If staining or high HNu, organic vapor analyzer (OVA), or organic vapor monitor (OVM) readings were recorded, a sample was collected for TCL +30 parameters and

TAL metals. Due to soil staining and elevated PID readings at SB-06, TCL +30 parameters and TAL metals were sampled. No evidence of contamination was present at the other soil sampling locations. Monitor wells were installed in two of the borings (MW-24 and MW-25), and two rounds of groundwater samples were collected for TCL +30 parameters, TAL metals, and TPHs. In addition, two rounds of groundwater samples were collected from previously installed monitor well MW-3.

4.2.12.4 Geophysical Results

The EM survey conducted at site M-18 reveals apparent background conductivities in the range of 25 to 40 mS/m, which are represented by the green to yellow color contour intervals as shown in Figure 4.2-29. These conductivities are indicative of silty soils. High conductivity readings exist toward the north and perimeter of the site (70 + mS/m). This is probably due to marsh deposits and partially to cultural features such as the chainlink fence surrounding the site.

Anomalous conductivity signatures located at 0N to 60S/65E to 95E contain both high conductivity and low conductivity (positive and negative) readings. This may be indicative of buried metallic objects or abrupt changes in subsurface materials.

The in-phase component reveals a strong discrete anomaly located at approximately 0N to 10S/80E to 100E (represented by the blue color contours). This anomaly is adjacent to the quadrature anomalies. Also, discrete in-phase anomalies located within grid coordinates 0N to 60N/170E to 250E are indicative of buried metallic objects (Figure 4.2-30). The strongest of these point source anomalies is located at 15N to 25N/180E to 195E. Other discrete anomalies indicative of buried metallic objects are located at 50N/350E, 30N/360E, and on the east side of the fence at 60N/415E.

The GPR survey at site M-18 revealed anomalous radar signatures (including a hyperbolic diffraction pattern) located at 0N to 10S/100E. Figure 4.2-30A shows this anomaly, which coincides with the EM anomaly in Figure 4.2-30 and may be indicative of an underground storage tank (UST) or UST component (i.e., foundation) at a depth of approximately 5 or 6 ft

bgs. The 100E line traverse on Figure 4.2-30A indicates that the suspected UST is approximately 4 feet in length. Figure 4.2-30A reveals that the three areas contain chaotic reflectors, which are indicative of coarse-grained or disturbed subsoil. The areas, centrally located at grid coordinates 50N/250E, 10N/250E, and 50N/350E, coincide with EM anomalies and may contain buried metallic objects. The radar profiles also reveal low amplitude chaotic reflectors, indicative of coarse-grained soils in the area that encompasses low apparent conductivity at the western portion of the site (green contour interval), as shown in Figure 4.2-29.

Although the geophysical survey results indicated areas that may contain buried ferrous material and fill, these areas are within the suspected boundary of the landfill. Monitor wells and soil borings were appropriately located to evaluate subsurface conditions downgradient and within the landfill boundaries.

4.2.12.5 Hydrogeologic Interpretation

Lithologic logs from SB-01 through SB-07 and MW-24 and MW-25 indicate that the lithology consists of fill intermixed with a poorly sorted gray-olive-brown silty fine-coarse-grained sand with trace amounts of clay. The manmade components of the filled materials observed in the borings consisted of asphalt, wood fragments, and roof shingles.

Saturation was observed in monitor wells MW-24 and MW-25 at approximately 6 ft bgs. Both monitor wells were screened across the water table and were completed to 15 ft bgs. Local groundwater flows toward and discharges into Parkers Creek (Figure 4.2-31), as indicated by water-level measurements from site monitor wells and land surface topography. Monitor wells MW-24 and MW-25 are positioned downgradient of the M-18 area.

4.2.12.6 Soil Sampling Results

A total of nine shallow soil borings (Figure 4.2-32) were completed at selected locations at site M-18 to depths ranging from 2 to 10 ft bgs. Two soil borings (SB-24 and SB-25) were completed at the new monitor wells (MW-24 and MW-25) locations. Locations were selected

for seven of the borings based on the results of the geophysical surveys. Soil samples were collected from two discrete intervals (1 to 1.5 ft bgs and 2 to 10 ft bgs, depending on the depth to water), and based on field observations, were sampled for the analytical parameters listed in Table 3.6-1. The analytical results for soils at specific sampling intervals are listed in Appendix D. Tables 4.2-16 and 4.2-17 compare the detected compounds with the NJDEP SCC, and then compare the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate. Stained soil was observed below ground surface, but in the 0 to 2-ft bgs sampling interval at boring SB-06. In accordance with the work plan, samples were also taken for BNAs (SVOCs), pesticides/PCBs, and metals analysis at this location.

VOCs

VOCs were not detected above the laboratory quantitation limit in site soils. VOCs detected below quantitation limits were well below their respective criteria (Table 4.2-16).

SVOCs

A total of 13 SVOCs were detected above laboratory quantitation limits in SB-06. Four of the compounds [benzo(a)anthracene, chrysene, benzo(k)fluoranthene, and ideno(1,2,3-cd)pyrene] were detected in concentrations above laboratory quantitation limits and above the NJDEP SCC at SB-06 in the 2- to 5-ft bgs sampling interval. In addition, two compounds [benzo(b)fluoranthene and benzo(a)pyrene], detected below laboratory quantitation limits in SB-06, were also found in concentrations exceeding the NJDEP SCC from the 2- to 5-ft bgs sampling interval. All other detected SVOCs were found in concentrations below the established criteria. All six of the compounds that exceeded the NJDEP criteria also exceeded the site and Monmouth County background. Although the SVOCs were found in concentrations above NJDEP SCC and maximum background in SB-06, the concentrations were well below the impact to groundwater SCC. Monitor wells downgradient of this location did not detect these particular SVOCs. Figure 4.2-32 presents the locations of the compounds detected above the NJDEP SCC and the established maximum background levels at the Main Post.

Table 4.2-16
Fort Monmouth - Main Post
Summary of Detected Compounds
in Soils from Site M-18
(VOC's and TPH only)

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS							
				SB01-A01 1/12/95 1-1.5 ft bgs	SB01-A02 1/12/95 2 ft bgs	SB02-A01 1/12/95 1-1.5 ft bgs	SB02-A02 1/12/95 4-6 ft bgs	SB03-A01 1/12/95 1-1.5 ft bgs	SB03-A02 1/12/95 4-7.5 ft bgs	SB04-A01 1/11/95 1-1.5 ft bg	SB04-A02 1/11/95 4-6 ft bgs
VOC's (mg/kg)											
Ethylbenzene	0.0031	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.0027	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	0.0038	410	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH (mg/kg)	26.8	NLE	NA	367	84.9	188	612	6330*	1100*	ND	ND

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS								
				SB05-A01 1/11/95 1-1.5 ft bgs	SB05-A02 1/11/95 2-5 ft bgs	SB06-A01 1/11/95 1-1.5 ft bgs	SB06-A02 1/11/95 2-5 ft bgs	SB07-A01 1/12/95 1-1.5 ft bgs	SB24-A01 1/12/95 1-1.5 ft bgs	SB24-A02 1/12/95 2-4 ft bgs	SB25-A01 1/13/95 1-1.5 ft bgs	SB25-A02 1/13/95 2-4 ft bgs
VOC's (mg/kg)												
Ethylbenzene	0.0031	1000	ND	ND	ND	ND	0.002 J	ND	ND	ND	ND	ND
Toluene	0.0027	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002 J
Xylene	0.0038	410	ND	ND	ND	ND	0.013 J	ND	ND	ND	ND	0.006 J
TPH (mg/kg)	26.8	NLE	NA	117	ND	221	2300*	29.9	695	993	311	2500*

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
NA- Not Analyzed
*Quantification limit was increased during analysis for the associated sample
ft bgs. - feet below ground surface.

Table 4.2-17
Fort Monmouth - Main Post
Summary of Detected Compounds in
Soils from Site M-18 Sample SB06-A02

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SB06-A02 1/11/95 2-5 ft bgs
SVOCs (mg/kg)				
Naphthalene	0.277	230	ND	1.2
2-Methylnaphthalene	0.287	NLE	ND	0.18 J
Acenaphthene	0.221	3400	0.1 J	52
Dibenzofuran	0.215	NLE	0.06 J	31
Fluorene	0.208	2300	0.074 J	40
Phenanthrene	0.165	NLE	0.39	140
Anthracene	0.152	10000	0.10 J	16
Carbazole	0.145	NLE	ND	4.8 J
Fluoranthene	0.198	2300	0.46	46
Pyrene	0.178	1700	1.5	48
Butylbenzylphthalate	0.175	1100	ND	0.45 J
Benzo(a)anthracene	0.162	0.9	0.65	**11**
Chrysene	0.145	9	0.65	**10**
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	0.17 J
Benzo(b)fluoranthene	0.188	0.9	0.9	**7.6 J**
Benzo(k)fluoranthene	0.205	0.9	0.43	**2.3**
Benzo(a)pyrene	0.162	0.66	0.6	**3.8 J**
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	**2.1**
Dibenzo(a,h)anthracene	0.198	0.66	0.079 J B	0.45 J
Benzo(g,h,i)perylene	0.224	NLE	0.079 J B	1.5
TPH (mg/kg)	26.8	NLE	NA	2300
PESTICIDES AND PCBs (mg/kg)				
Heptachlor epoxide	0.0021	NLE	ND	0.030 P
4,4'-DDE	0.0037	2	0.096 P	0.11
4,4'-DDD	0.0037	3	0.096 P	0.46 UX
4,4"-DDT	0.0037	2	0.11 D	0.032
alpha-Chlordane	0.0021	NLE	ND	0.0078
gamma-Chlordane	0.0021	NLE	ND	0.02 P
METALS TOTAL (mg/kg)				
Aluminum	3.9	NLE	15200	6130
Arsenic	0.35	20	22.9	5.8
Barium	0.17	700	32.3	31
Calcium	2.2	NLE	921	11100
Cobalt	0.71	NLE	2.5	6.3
Chromium	1.60	500	269	35.3
Copper	2.2	600	8	218
Iron	0.58	NLE	55800	17700
Lead	0.4	400[2]	25.9[1]	127
Magnesium	9.6	NLE	7230	3380
Manganese	0.18	NLE	90.7	168
Mercury	0.49	14	ND	0.61
Nickel	1.4	250	8.4	12.6
Potassium	(12.3-25.8)	NLE	15400	2190
Sodium	3.8	NLE	51.6	181
Selenium	0.3	63	1.9	0.78
Vanadium	0.53	370	94.1	27.3
Zinc	0.41	1500	81.4	72.6

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers.
ft bgs - Feet below ground surface
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
B - Compound was observed in the samples and associated laboratory blank
NA- Not Analyzed
C- Pesticide identification was confirmed by GC/MS
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
U - Compound was not detected at or above the reporting limit.
X - Other specific flags may be required to properly qualify the result.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Pesticides/PCBs

Five pesticides were detected in concentrations above laboratory quantitation limits in SB-06 from the 2- to 5-ft bgs sampling interval. However, all pesticide compounds were detected below the NJDEP SCC. PCBs were analyzed for but were not detected in any of the boring locations.

Metals

As indicated in Table 4.2-17, metals detected in SB-06 were found in concentrations below the NJDEP SCC.

Total Petroleum Hydrocarbons (TPHs)

TPH concentrations were detected above laboratory quantitation limits in one or both sampling intervals in all but soil boring SB-04 in concentrations ranging from 29.9 milligrams per kilogram (mg/kg) to 6,330 mg/kg.

4.2.12.7 Groundwater Sampling Results

Monitor wells at site M-18 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. The existing monitor well, MW-3, was sampled in May 1995. Table 4.2-18 compares the average concentrations from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background, where appropriate.

VOCs

Acetone was the only VOC detected in site groundwater samples. Acetone was detected in concentrations below the NJDEP GWQC in groundwater samples collected from MW-24 and

Table 4.2-18
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-18

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW24 2/17/95, 3/10/95 (avg.)	MW25 2/17/95, 3/10/95 (avg.)	MW03 5/10/95, 5/27/95 (avg.)
VOC's (µg/L)						
Acetone	6.9	700	ND	10 J	12.5	ND
SVOCs (µg/L)						
4-Methylphenol	12.9	NLE	ND	3.5J	ND	ND
PETROLEUM HYDROCARBONS (µg/L)						
Petroleum Hydrocarbons	0.26	NLE	NA	1.12	0.43	ND
PESTICIDES/PCBs (µg/L)						
4,4'-DDD	0.97	0.1	0.050 JP	**0.145P**	ND	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**5615**	**4103**	**8310**
Arsenic	1.9	8*	89.3	**16.8**	**11.4**	4.8
Barium	1.7	2000	699	267	92.9	13.7
Beryllium	0.9	20*	7[1]	1.65	0.53	0.6
Calcium	10.4	NLE	45400	747000	169000	5470
Cadmium	2.8	4	9.5	2.775	3.625	ND
Cobalt	2.3	NLE	18.3	1.975	1.825	4.1
Chromium	2.9	100	191	48.15	23.2	54.2
Copper	1.9	1000	730[1]	8.45	2.6	2.9
Iron	6.4	300	431000	**40000**	**28620**	**39950**
Potassium	685	NLE	137000	19200	29900	10735
Magnesium	18.3	NLE	62700	49750	69050	6145
Manganese	1.8	50	480[1]	**712**	**940**	38.3
Sodium	30.5	50000	197000[1]	42000	**363500**	**55950**
Nickel	10.8	100	187	6.75	8.35	7.3
Lead	1.1	10*	22.7	**34.7**	**11.2**	8.2
Selenium	1.5	50	29.6	1.575	ND	ND
Vanadium	2.3	NLE	108	29.15	24.85	44.8
Zinc	3.8	5000	233	90.75	33.55	88.9

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at noted quantification limit
NA - Not analyzed
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
P - The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported.
[1] - Monmouth County maximum background concentration.

MW-25. The source of the acetone is not known, however, acetone is a common laboratory contaminant.

SVOCs

One SVOC (4-methylphenol) was detected in MW-24 below the laboratory quantitation limit. SVOCs were not detected in MW-25 or MW-3.

Pesticides/PCBs

One pesticide (4,4'-DDD) was detected in a concentration that slightly exceeds the NJDEP GWQC in MW-24. 4,4'-DDD was detected in concentrations above the criteria in MW-24 from both sampling rounds. PCB compounds were not detected in site monitor wells from either sampling round (Figure 4.2-32).

Metals

As indicated in Table 4.2-18, of the 19 metals detected in site groundwater, only 6 (aluminum, arsenic, iron, manganese, sodium, and lead) were found in concentrations exceeding the NJDEP GWQC. In addition, manganese in MW-24 and MW-25, lead in MW-24, and sodium in MW-25 were found in concentrations greater than those determined for site-specific and Monmouth County maximum background at the Main Post. Lead was not detected in the filtered sample. However, aluminum and arsenic were found in concentrations below both maximum background levels where established. Although iron was detected in concentrations greater than the regional maximum background, iron was detected well below the site-specific background levels in the Main Post and is not a compound of concern. Sodium in MW-3 was found in a concentration greater than the site-specific background, but was well below the Monmouth County level. The elevated sodium levels in MW-25 may be caused by saline water intrusion from the Parkers Creek estuary. Sodium is not a compound of concern (Figure 4.2-32). As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant

manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

TPHs

TPH concentrations were detected just above the laboratory quantitation limit in MW-24 and MW-25 from both the February and March sampling rounds.

4.2.12.8 Recommendations

The geophysical surveys identified several anomalies indicative of buried waste and fill material within the suspected boundaries of the site M-18 area. One anomaly was indicative of a UST or storage tank component. The geophysical results indicate that soil borings and monitor wells were appropriately located to evaluate subsurface conditions downgradient and within landfill boundaries.

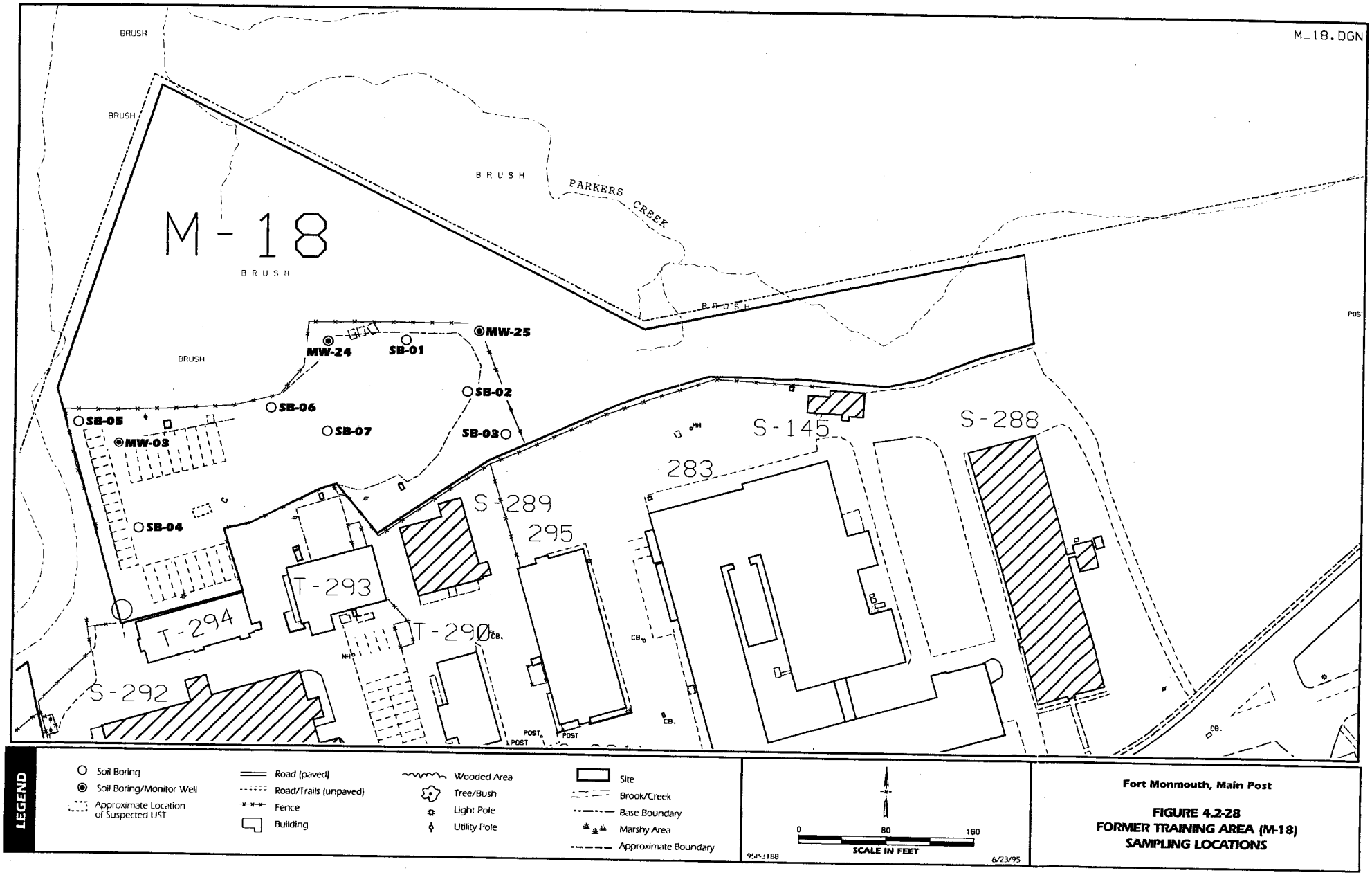
The soil sampling results indicated that six SVOCs were detected at SB-06 in concentrations that exceeded the NJDEP criteria and established background concentrations.

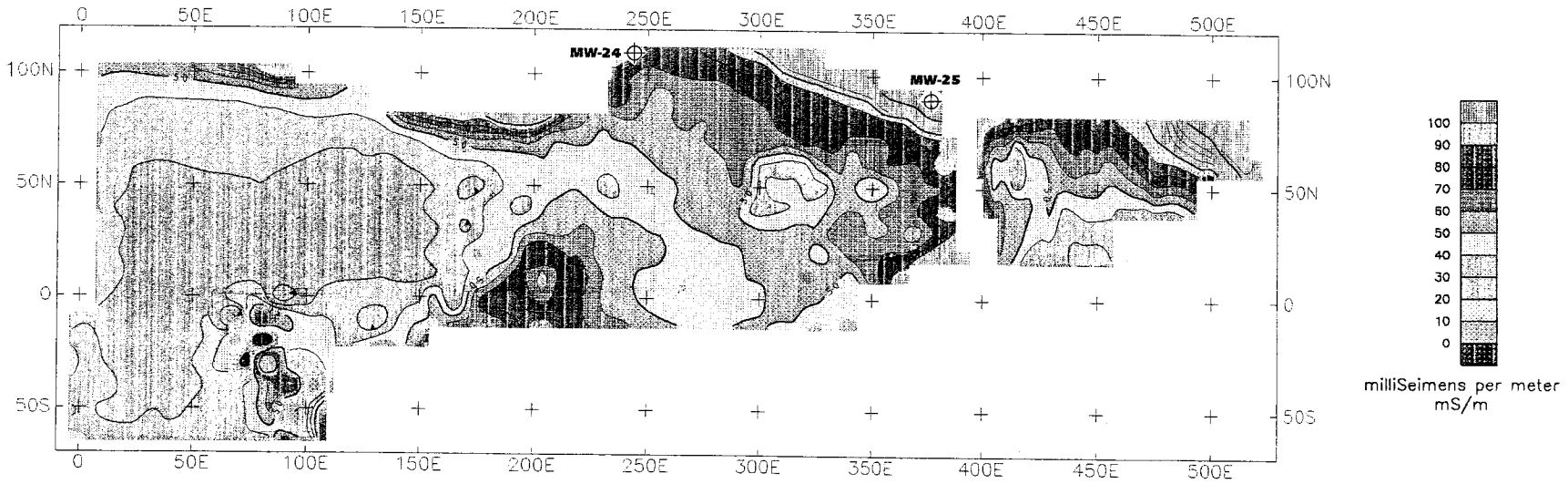
The groundwater sampling results indicate that 4,4-DDD was detected at a concentration just above the NJDEP GWQC in one well (MW-24) from both sampling rounds. Lead was detected in one location above NJDEP GWQC and background. TPH concentrations were also detected just above laboratory quantitation limits in MW-24 and MW-25 in both sampling rounds.

Trenching will be performed at the suspected UST or UST component location to confirm the geophysical results and to excavate if necessary. A PID will be used to conduct field screening during the excavation. The excavation will be performed in conjunction with confirmatory sampling, in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993), if a UST is encountered to ensure that NJDEP SCC are achieved. NJDEP will be requested to send a representative to observe the excavation.

Additionally, soil at soil boring SB-06 will be excavated. If it is determined that the suspected UST is the source of contamination at SB-06, this location will be remediated in conjunction with the UST. Confirmatory sampling will also be conducted.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.


M_18.DGN
BRUSH
BRUSH
BRUSH
PARKERS CREEK
M-18
BRUSH
BRUSH
MW-25
MW-24
SB-01
SB-02
SB-06
SB-05
SB-07
SB-03
MW-03
SB-04
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
CB.
POST
POST
POS
LEGEND
Soil Boring
Soil Boring/Monitor Well
Approximate Location of Suspected UST
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
80
160
SCALE IN FEET
95P-3188
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-28
FORMER TRAINING AREA (M-18)
SAMPLING LOCATIONS



LEGEND

Monitor Well

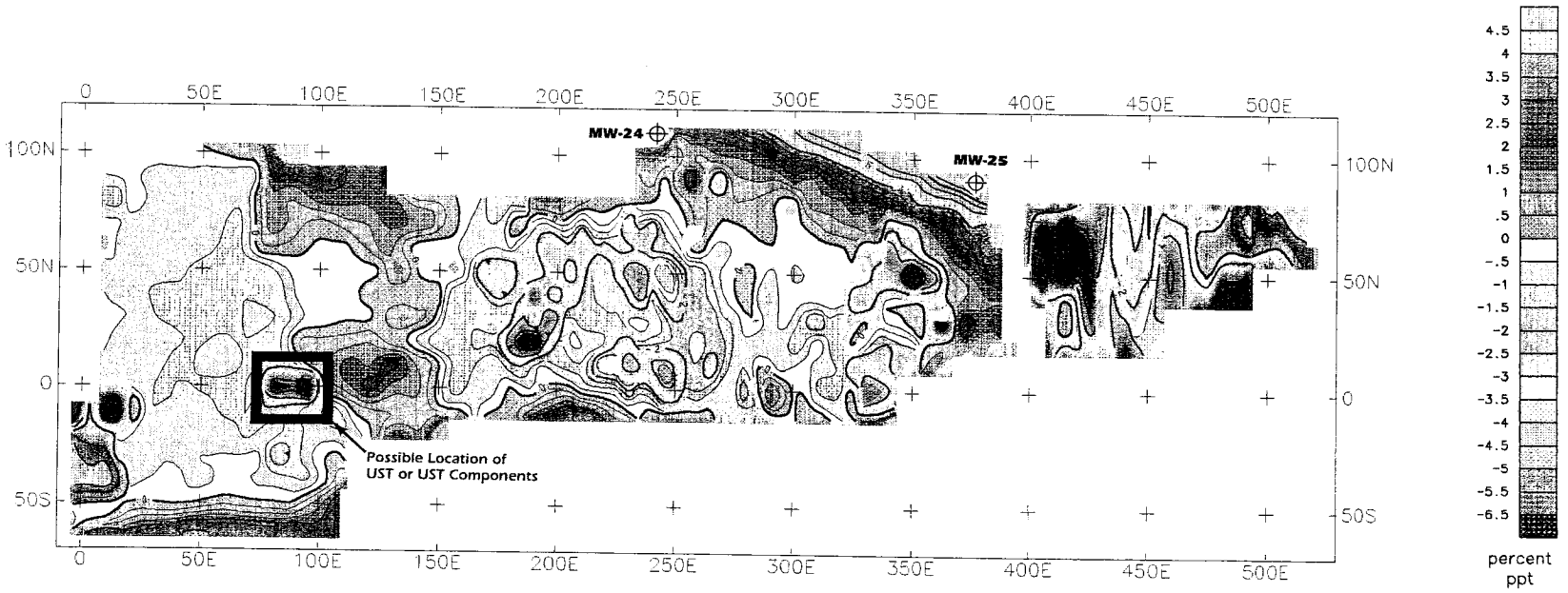
0 25 50 75 100

SCALE IN FEET

Fort Monmouth, Main Post Site M-18

FIGURE 4.2-29
ELECTROMAGNETIC SURVEY
QUADRATURE COMPONENT – SITE M-18

95P-3241 6/27/95



LEGEND

Monitor Well

0 25 50 75 100

SCALE IN FEET

Fort Monmouth, Main Post Site M-18

FIGURE 4.2-30
ELECTROMAGNETIC SURVEY
IN PHASE COMPONENT – SITE M-18

95P-3242 6/27/95

File 39 FILE39 Created November 30,1994 17:06:26

512 samples/scan 25.004 scans/sec
Position: -6 nS range: 75 nS 8 Bits
Dielectric Constant: 0Antenna: 3102

Range Gain 4 9 25 44 51

Vert. IIR low pass N=2 F=38
Vert. IIR high pass N=2 F=8
Horiz. IIR stacking TC=4

Ft.Monmouth NJ

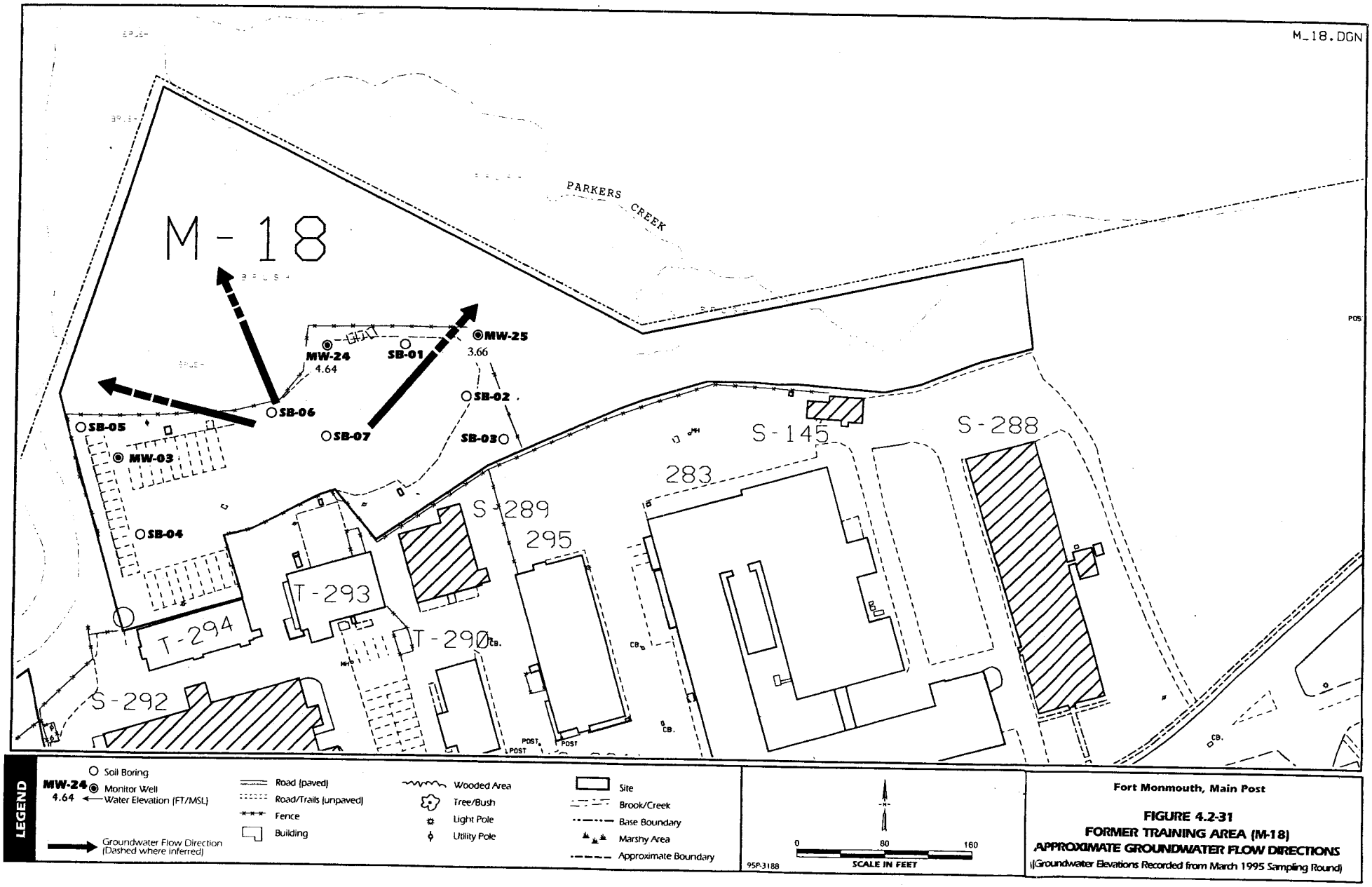
Main Post Site M18

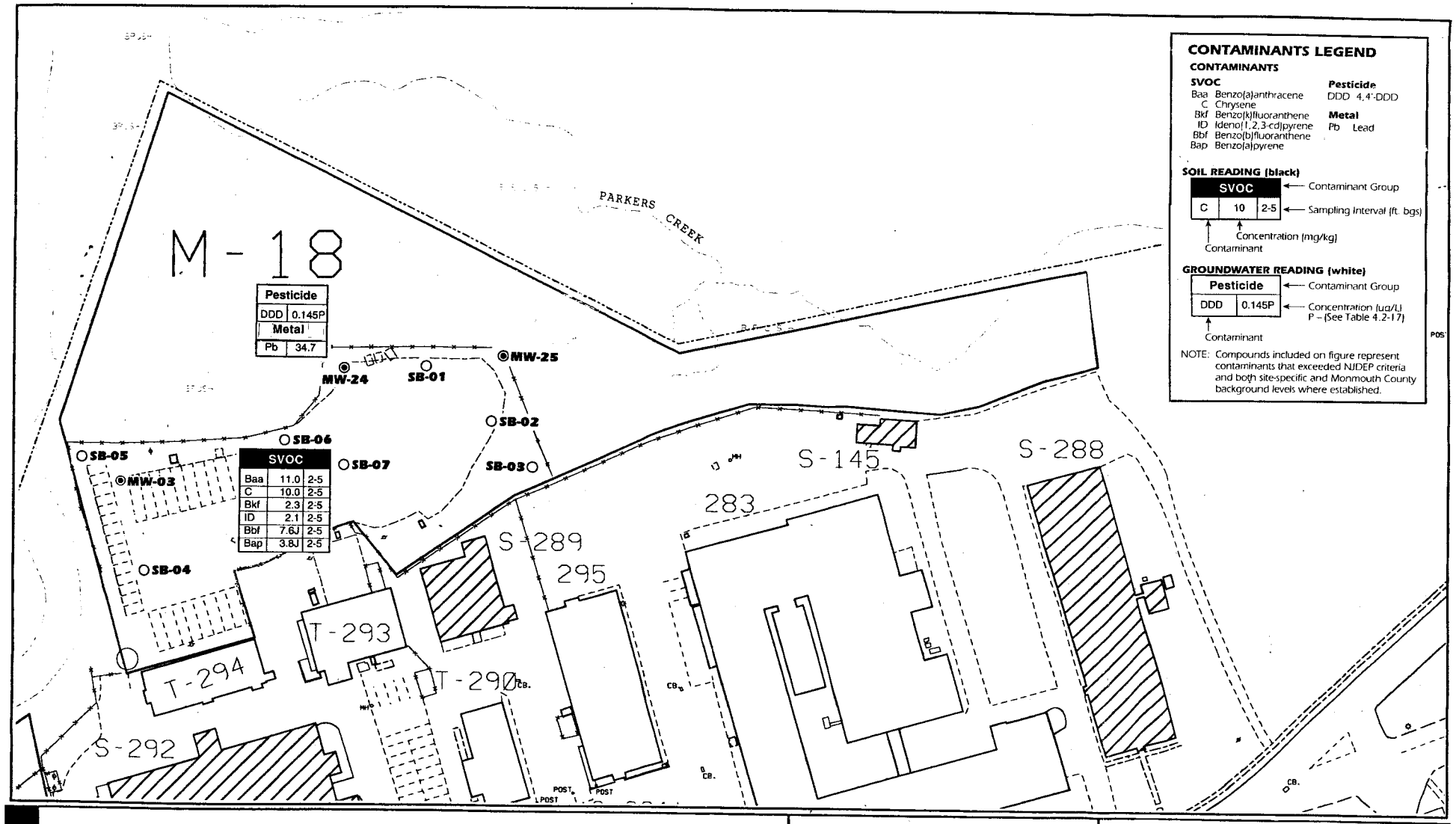
Line 100E, Marks at 20'intervals

Start: 95N End: 80S

Gray Scale Table #4 Gray Scale Transform #1 Contrast 7: 0%

FIGURE 4.2-30A RADAR PROFILE DEPICTING POTENTIAL UST AT SITE M-18


M_18.DGN
M-18
PARKERS CREEK
MW-24
4.64
SB-01
MW-25
3.66
SB-02
SB-03
SB-05
SB-06
SB-07
MW-03
SB-04
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
POST
CB.
LEGEND
Soil Boring
MW-24 Monitor Well
4.64 Water Elevation (FT/MSL)
Groundwater Flow Direction (Dashed where inferred)
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
95P-3188
0
80
160
SCALE IN FEET
Fort Monmouth, Main Post
FIGURE 4.2-31
FORMER TRAINING AREA (M-18)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)


M-18
PARKERS CREEK
Pesticide
DDD 0.145P
Metal
Pb 34.7
MW-24
SB-01
MW-25
SB-02
SB-03
SB-04
SB-05
SB-06
SB-07
MW-03
SVOC
Baa 11.0 2-5
C 10.0 2-5
Bkf 2.3 2-5
ID 2.1 2-5
Bbf 7.6J 2-5
Bap 3.8J 2-5
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
CONTAMINANTS LEGEND
CONTAMINANTS
SVOC
Baa Benzo(a)anthracene
C Chrysene
Bkf Benzo(k)fluoranthene
ID Ideno(1,2,3-cd)pyrene
Bbf Benzo(b)fluoranthene
Bap Benzo(a)pyrene
Pesticide
DDD 4,4'-DDD
Metal
Pb Lead
SOIL READING (black)
SVOC
C 10 2-5
Contaminant Group
Sampling Interval (ft. bgs)
Concentration (mg/kg)
Contaminant
GROUNDWATER READING (white)
Pesticide
DDD 0.145P
Contaminant Group
Concentration (ug/L)
P – (See Table 4.2-17)
Contaminant
NOTE: Compounds included on figure represent contaminants that exceeded NJDEP criteria and both site-specific and Monmouth County background levels where established.
LEGEND
Soil Boring
Soil Boring/Monitor Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0 80 160
SCALE IN FEET
95P-3188
5/23/95
Fort Monmouth, Main Post
FIGURE 4.2-32
FORMER TRAINING AREA (M-18)
DISTRIBUTION OF CONTAMINANTS IN
SITE SOIL AND GROUNDWATER

Site AOC-3

4.2.13 Former Main Post Sanitary Treatment Plant (AOC-3)

4.2.13.1 Site Location

The former Sanitary Treatment Plant (STP, AOC-3) was located on Parkers Creek north of Sherrill Avenue, between Buildings S-292 to the east and S-697 to the west (Figure 4.2-33). The approximate area of site AOC-3 is 96,000 ft^2 (2.2 acres).

4.2.13.2 Site History

This site was identified by the NJDEP as an area of concern (AOC) in the 8 June 1990 letter. The Main Post STP was built in 1941 to handle 700,000 gallons of sewage per day. As described in the IA, this STP consisted of a bar screen and grit chamber, comminutor, primary and secondary settling tanks, a mixing and aeration tank, and a baffled contact chlorination tank. Effluent from the STP was discharged to Parkers Creek. Sludge was treated in a three-stage anaerobic digester and discharged to underdrained sandbeds for drying. According to the IA and DEH employees, sludge was transported to the Charles Wood golf course and to landfills. This STP was closed on 3 September 1975 when the Main Post sewer system was connected to the Northeast Monmouth County Regional Sewerage Authority (NMCRSA) system. In 1981, all sludges and supernatant liquids were removed from the STP and the facility was cleaned and disinfected. The removal contractor was Modern Transportation Co. of Kearny, New Jersey. The physical facility was demolished in 1983. At present, this area is flat and grass covered.

4.2.13.3 Sampling Effort

Sediments from one location in the Parkers Creek outfall area were analyzed for TCL +30 parameters, TAL metals, and cyanide. Two soil borings were completed in the area of the former sludge-drying beds to identify the original land surface and collect soil samples from an interval just below the original surface for TCL +30 parameters, TAL metals, and cyanide (Figure 4.2-33).

4.2.13.4 Soil Sampling Results

Borings were drilled to depths of 12 ft bgs (depth where saturation was encountered). Samples were collected from one sampling interval (6 to 9.5 ft bgs) and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils at specific sampling intervals, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-19 compares the compounds detected in site soils with the NJDEP Residential Direct Contact SCC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. In addition, compounds were also compared to the impact to groundwater SCC because no monitor wells were installed at the site.

VOCs

VOCs were not detected in site soils from either boring location.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soils. SVOCs detected below laboratory quantitation limits were found in concentrations well below their respective criteria.

Pesticides/PCBs

Of the six pesticides detected in site soil, none were detected above the NJDEP SCC or the impact to groundwater SCC (Table 4.2-19).

One PCB (Aroclor-1248) was detected in SB-02 above the laboratory quantitation limit. However, Aroclor-1248 was found in a concentration below both the NJDEP residential direct contact and impact to groundwater SCC.

Table 4.2-19
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soils at Site AOC - 3

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/14/94 (6-9.5 ftbgs)	SB02-A02 12/14/94 (6-9.5 ft bgs)
SVOCs (mg/kg)					
Phenanthrene	0.165	NLE	0.39	0.09 J	ND
Fluoranthene	0.198	2300	0.46	0.11 J	ND
Pyrene	0.178	1700	1.5	0.15 J	ND
Benzo(a)anthracene	0.162	0.9	0.65	0.077 J	ND
Chrysene	0.145	9	0.65	0.099 J	ND
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	0.057 J	0.053 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.077 J	ND
Benzo(a)pyrene	0.162	0.66	0.6	0.055 J	ND
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.046 J	ND
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.049 J	ND
PESTICIDES AND PCBs (mg/kg)					
4,4'-DDE	0.0037	2	0.096 P	0.044	0.022
4,4'-DDD	0.0037	3	0.096 P	0.024	0.016
4,4'-DDT	0.0037	2	0.11 D	0.035 P	0.085
alpha-Chlordane	0.0017	NLE	ND	ND	0.0052
gamma-Chlordane	0.0017	NLE	ND	ND	0.0035 P
Aroclor-1248	0.036	0.49	ND	ND	0.2 P
METALS TOTAL (mg/kg)					
Aluminum	3.9	NLE	15200	3000	4020
Arsenic	0.35	20	22.9	2.8	4.2
Barium	0.17	700	32.3	14.4	12.5
Beryllium	0.10	1	2	0.34	0.63
Calcium	2.2	NLE	921	310	226
Cobalt	0.86	NLE	2.5	0.72	1.5
Chromium	0.71	500	269	39.9	61
Copper	2.2	600	8	1.9	1.7
Iron	0.58	NLE	55800	15000	21700
Lead	0.40	**400**[2]	25.9[1]	8.3	11.5
Magnesium	9.6	NLE	7230	690	1490
Manganese	0.18	NLE	90.7	13.8	15.6
Nickel	1.4	250	8.4	1.9	3
Potassium	(12.3-25.8)	NLE	15400	1760	4240
Sodium	3.8	NLE	51.6	17.4	18.6
Selenium	0.3	63	1.9	ND	ND
Vanadium	0.53	370	94.1	28	32.9
Zinc	0.41	1500	81.4	19.1	30.8

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
ft bgs. - feet below ground surface.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.2-19 all of the metals detected in site soil were found in concentrations below the NJDEP SCC.

Cyanide

Cyanide was not detected in site soils from either soil boring.

4.2.13.5 Sediment Sampling Results

Sample location M8SD-1 appears to be tidally influenced, and based on conductivity results and field observations, was determined to be saltwater.

One sediment sample, M8SD-1, was collected at AOC-3 (Figure 4.2-33). Table 4.2-20 presents a comparison of detected sediment concentrations at sampling location M8SD-1 to marine/ estuarine sediment criteria (Long et al., 1995), and maximum detected background concentrations.

VOCs

2-Butanone was the only VOC detected above the laboratory quantitation limit in a site sediment sample. 2-Butanone is a common laboratory contaminant.

SVOCs

Two SVOCs were detected below the laboratory quantitation limit in site sediment from location M8SD1.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in the site sediment sample.

Table 4.2-20
Fort Monmouth - Main Post
Summary of Detected Compounds in Sediment
Site AOC-3

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[a] (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION	ANALYTICAL RESULTS M8SD-1 12/1/94
VOC's (mg/kg)				
2-Butanone	0.0041	NLE	0.1	0.02
SVOCs (mg/kg)				
Di-n-butylphthalate	0.215	NLE	0.26 JB	0.68 J
2,2'-oxybis(1-Chloropropane)	0.231	NLE	ND	0.061 J
PAHs (mg/kg)				
Benzo(a)pyrene	0.162	0.43	1.2	0.079 J
METALS TOTAL (mg/kg)				
Aluminum	18.1	NLE	9060	8830
Arsenic	2.5	8.2	14.5	**13.2**
Barium	1.4	NLE	87.6	13
Beryllium	1.0	NLE	3.2	1.4
Calcium	8.1	NLE	3180	1290
Chromium	4.3	81	88.1	74
Cobalt	1.9	NLE	119	5.5
Copper	1.6	34	48.4	3.1
Iron	3.2	NLE	61900	40300
Lead	9.9	46.7	64.1	6.5
Magnesium	25.8	NLE	3280	3670
Manganese	1.4	NLE	70.2	51.7
Nickel	8.7	20.9	131	14
Potassium	555	NLE	10200	6640
Selenium	0.56	NLE	1.7	0.42
Sodium	10.4	NLE	189	3090
Vanadium	2.0	NLE	49.1	39.3
Zinc	1.9	150	162	68.8

Compounds detected above NJDEP Sediment Guidance are noted by bold numbers.

[a] - Value from Long et al. (1995).

ND - Compound was not detected at or above the quantification limit.

NLE - No Level Established

B - Compound was found in the sample and associated laboratory blank

J - Concentration was estimated due to detection at or below the quantification limit

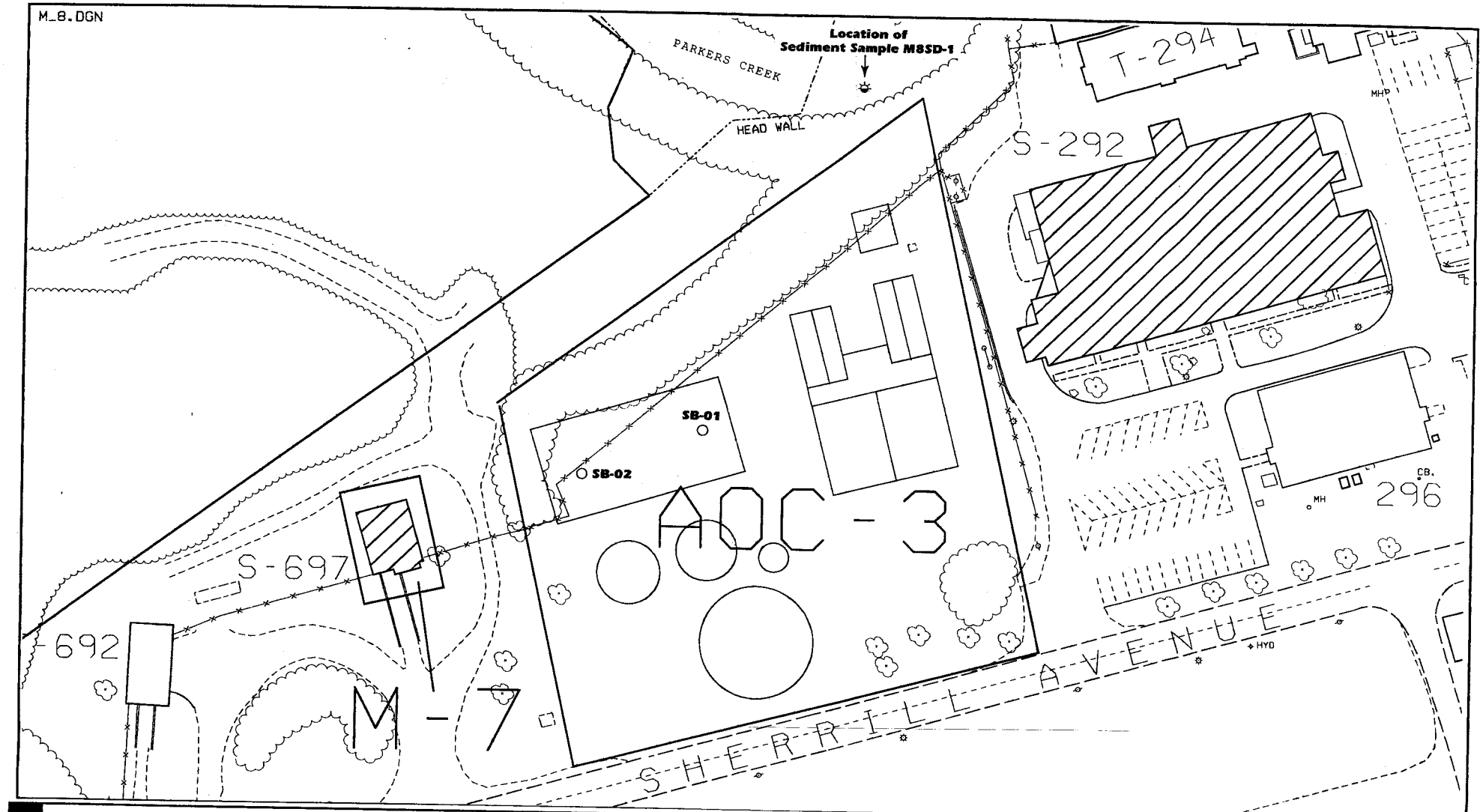
Metals

As indicated in Table 4.2-20, of the 18 metals detected above laboratory quantitation limits, only one (arsenic) was found in a concentration slightly exceeding the established criteria. However, the concentration of arsenic was found at a level below the maximum detected background concentration.

4.2.13.6 Recommendations

The results of the soil and sediment sampling indicated that compounds of concern were not detected above the NJDEP criteria and established background concentrations.

No further action will be taken.


M_8.DGN
Location of
Sediment Sample M8SD-1
PARKERS CREEK
HEAD WALL
T-294
S-292
MHP
SB-01
SB-02
AOC-3
S-697
692
M-7
CB.
MH
296
HYD
SHERRILL AVENUE
LEGEND
Soil Boring Location
Sediment Sampling Location
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3189
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-33
FORMER SANITARY TREATMENT PLANT (AOC-3)
SOIL AND SEDIMENT SAMPLING LOCATIONS

Former Sanitary Treatment Plant (STP)

Former Sanitary Treatment Plant (STP)

4.2.14 Pre-1941 Sanitary Treatment Plant (STP)

4.2.14.1 Site Location

The pre-1941 STP for the Main Post was located on Parkers Creek in an area north of Allen Avenue in approximately the same location as current Building 259 (Figure 4.2-34). The approximate area of the STP is 130,000 ft^2 (2.9 acres).

4.2.14.2 Site History

This STP is shown on a 1935 Fort Monmouth map. The date of construction and period of operation are unknown, although the STP presumably operated until the Main Post STP (AOC-3) came on line in 1941.

4.2.14.3 Sampling Effort

The former STP is presented in Figure 4.2-34. Sediment coring was conducted at the former outfall and a sample was collected for TAL metals analysis.

4.2.14.4 Sediment Sample Results

Sediment at the STP was determined to be saltwater based on conductivity results and field observations. Therefore, detected concentrations of contaminants in the STP sediment were compared to marine/estuarine biological effects levels (Long et al., 1995) (Table 4.2-21).

One sediment sample, STPSD-1, was collected at the former STP (Figure 4.2-34).

Metals

As indicated in Table 4.2-21, of the 21 metals detected above laboratory quantitation limits, nine (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were found in concentrations exceeding their respective established criteria. In addition, arsenic, cadmium,

Table 4.2-21
Fort Monmouth - Main Post
Summary of Detected Compounds in Sediments
Site - Pre-1941 Sanitary Treatment Plant

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[a] (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION	ANALYTICAL RESULTS STPSD-1 12/1/94
METALS TOTAL (mg/kg)				
Aluminum	18.1	NLE	9060	9240
Arsenic	2.5	8.2	14.5	**24.2**
Barium	1.4	NLE	87.6	27.6
Beryllium	1.0	NLE	3.2	1.3
Cadmium	2.3	1.2	ND	**4.2**
Calcium	8.1	NLE	3180	1010
Chromium	4.3	81	88.1	**93.5**
Cobalt	1.9	NLE	119	13.5
Copper	1.6	34	48.4	**35.2**
Iron	3.2	NLE	61900	49200
Lead	9.9	46.7	64.1	**59**
Magnesium	25.8	NLE	3280	3390
Manganese	1.4	NLE	70.2	39.5
Mercury	0.32	0.15	1.7	**0.57**
Nickel	8.7	20.9	131	**26.5**
Potassium	555	NLE	10200	6760
Selenium	0.56	NLE	1.7	0.88
Silver	2.1	1	ND	**5.2**
Sodium	10.4	NLE	189	2330
Vanadium	2.0	NLE	49.1	49.5
Zinc	1.9	150	162	**386**

Compounds detected above NJDEP Sediment Guidance are noted by bold numbers.

[a] - Value from Long et al. (1995).

ND - Compound was not detected at or above the quantification limit.

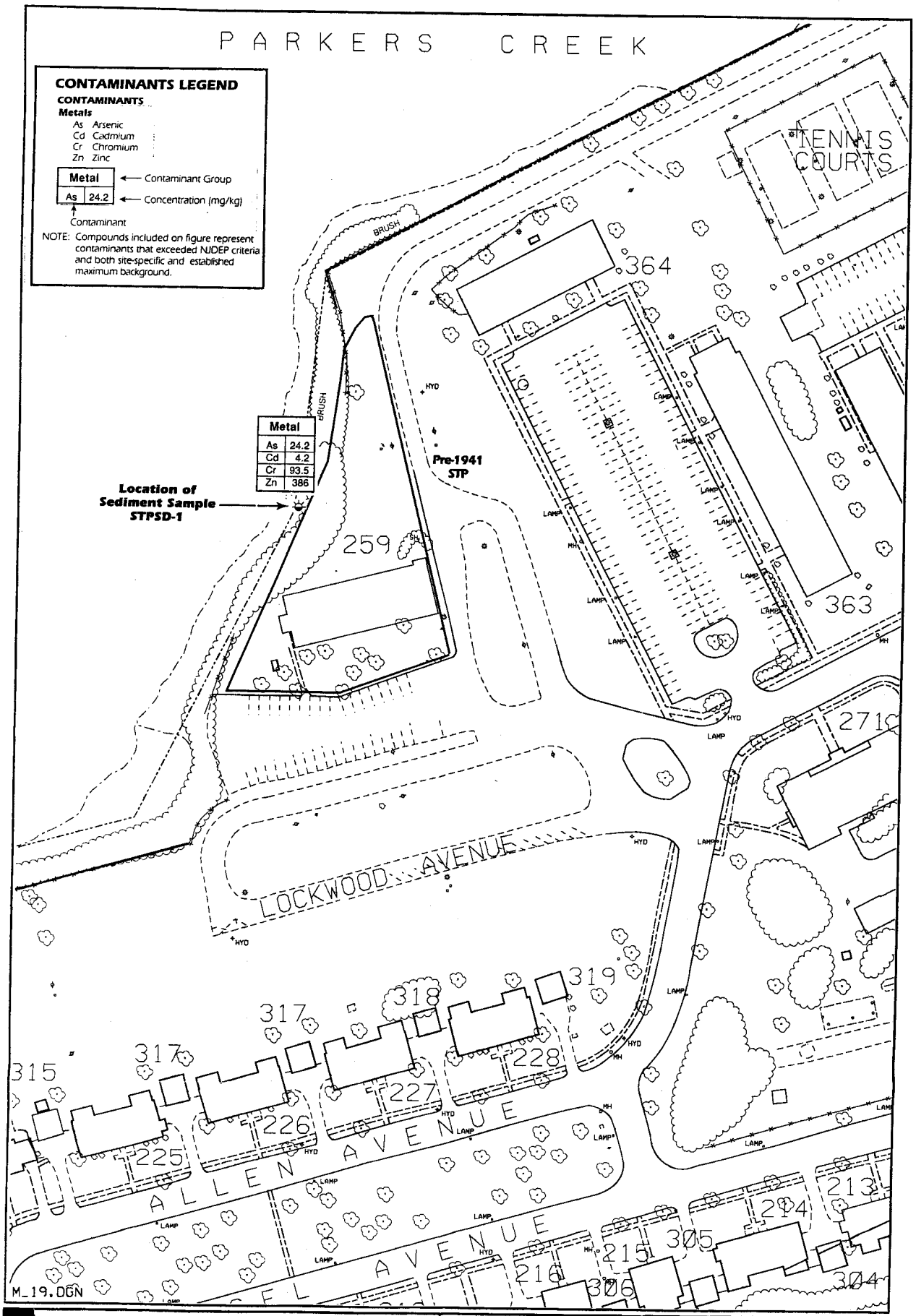
NLE - No Level Established

chromium, and zinc were found in concentrations slightly exceeding their respective background concentrations. However, copper, lead, mercury, and nickel were found in concentrations below their respective maximum background levels.

4.2.14.5 Recommendations

Nine metals were detected above NJDEP criteria in the sediment sample collected at the outfall area. In addition, four metals (arsenic, cadmium, chromium, and zinc) exceeded their respective maximum background concentrations. The other five metals were detected below established background concentrations.

Although four metals were detected in sediment at levels exceeding NJDEP criteria and background, in the worst case the criteria were exceeded by a factor of three. Since the samples was taken at the outfall of the STP, the results are believed to be the worst case and the area of contamination is probably small. Access to this portion of Lafetra Creek is restricted although the stream is on the property boundary. The STP has not been used since 1941, and, presumably, the local ecology has reached an equilibrium. Therefore, since remediation would disrupt the ecology of the site, no further action will be taken.



LEGEND

- Sediment Sampling Location
- Road (paved)
- Road/Trails (unpaved)
- Fence
- Building
- Wooded Area
- Tree/Bush
- Light Pole
- Utility Pole
- Site
- Brook/Creek
- Base Boundary
- Marshy Area

0 80 160
SCALE IN FEET

2017-0585

Fort Monmouth, Main Post

FIGURE 4.2-34
PRE-1941 SANITARY TREATMENT PLANT
(Distribution of Contaminants in Site Sediment)

Main Post
PCB Transformers

Main Post
PCB Transformers

4.2.15 PCB Transformers

4.2.15.1 Site Location

During the 1993 investigation (WESTON, 1993) all locations where PCB transformers had formerly been located were inspected for evidence of spills. Eight sites were identified where a PCB transformer was either formerly located over soil and thus evidence of a spill could not be determined visually, or was formerly located on concrete and there was discoloration in the concrete. These locations are listed in Table 3.5-1. Figure 4.2-35 presents the Main Post transformer site sample locations.

4.2.15.2 Site History

All PCB transformers (contain greater than 500 ppm PCBs) have been removed from Fort Monmouth. However, the former locations of these transformers were not previously investigated for spilled PCBs.

4.2.15.3 Sampling Effort

As discussed in Subsection 3.5, soil samples were taken below pole-mounted transformers and on four sides of an outdoor pad-mounted transformer. Concrete samples were taken from stained areas on outdoor concrete pads or in interior vaults with concrete floors. All samples were analyzed for PCBs.

4.2.15.4 PCB Sampling Results

The results of the PCB transformer sampling are presented in Table 4.2-22. Four of the eight transformers sampled at the Main Post area were found to have PCBs in soil or concrete above applicable cleanup criteria.

All other transformers sampled in the Main Post either had results below detection limits, or had detectable levels of PCBs below applicable cleanup criteria.

Table 4.2-22
Results of Transformer Site Sampling on Main Post

Location (Building No.)	Sample ID	Method Detection Limit (mg/kg)	Medium	NJDEP Cleanup Criteria (mg/kg)	Total PCBs (mg/kg)
292	MPT5-TR01	0.24	Soil	0.49	**0.68**
686	MPT6-TR01	0.045	Soil	0.49	0.18
718	MPT4-TR01	0.051	Soil	0.49	0.06
1002	MPT7-CC01	2000*	Concrete	0.055	**8400**
1004	MPT8-TR01	0.45	Soil	0.49	ND
1208	MPT2-CC01	2000*	Concrete	0.055	**19000**
1209	MPT1-CC01	400*	Concrete	0.055	**1500**
1220	MPT3-TR01	0.045	Soil	0.49	ND
1220	MPT3-TR02	0.041	Soil	0.49	ND
1220	MPT3-TR03	0.047	Soil	0.49	0.06
1220	MPT3-TR04	0.045	Soil	0.49	0.09
1220	MPT3-CC01	0.04	Concrete	0.055	ND

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers
ND - Indicates that the compound was not detected at the quantification limit.
* = Method detection limit unit exceeded the NJDEP criteria.

The following transformer sites had PCBs in soil or concrete above applicable cleanup standards:

- MP-062 (Building 292).
- Indoor transformer vault in Building 1002.
- Indoor transformer vault in Building 1208.
- Indoor transformer vault in Building 1209.

PCBs were detected in soils above applicable soil standards in the soil beneath transformer MP-062, which was a pole-mounted transformer on the northwest side of Building 292. The sample beneath the transformer contained PCBs above the NJDEP SCC.

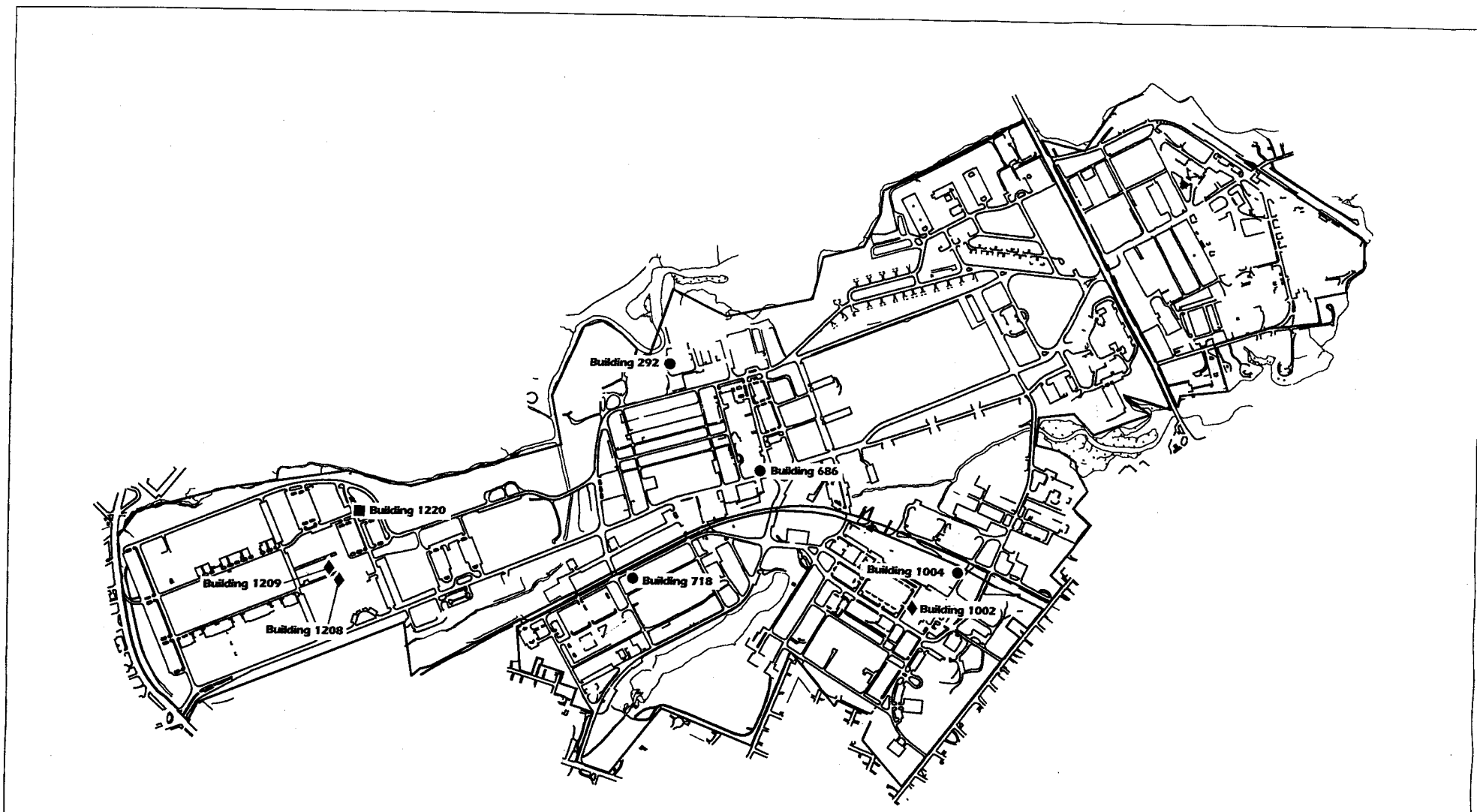
The concrete samples from visibly stained areas in the indoor transformer vaults in Buildings 1002, 1208, and 1209 each contained PCBs above the proposed indoor surface cleanup criteria of 0.055 mg/kg.

4.2.15.5 Recommendations

PCB levels in stained concrete were found to exceed NJDEP guidance levels in indoor vaults at Buildings 1002, 1208, and 1209. PCBs were also detected above applicable soil standards in the soil beneath transformer MP-062 on the northwest side of Building 292.

Since the indoor vaults are normally locked and are accessible by a very limited number of facility personnel, and the stained concrete cannot be removed without significantly disrupting electrical service, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. A warning sign will be posted, and workers entering the vaults will be trained to take precautions to prevent contamination.

Because the concentration of PCBs is only slightly above the SCC, additional sampling will be conducted beneath the former location of transformer MP-062 to determine the vertical and horizontal extent of PCBs in soil. The soil sampling will be performed in accordance with the NJDEP *Technical Requirements for Site Remediation* (NJDEP, 1993). Personal protective clothing will be worn accordingly.



Fort Monmouth, Main Post

FIGURE 4.2-35
MAIN POST TRANSFORMER SITE
SAMPLE LOCATIONS

Charles Wood
Background Samples

4.3 CHARLES WOOD

This subsection presents a description of each Charles Wood site and presents the rationale for the sampling activities. The sites and the sampling effort are summarized in Table 4.3-1. Additional historical information on each site may be obtained from the *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*, 1993.

The following subsections summarize the results of the sampling program that was implemented to characterize site conditions as specified in the report titled, *Site Investigation, Chemical Data Acquisition Plan (CDAP).* Although the field investigation was generally conducted in accordance with the CDAP, minor changes were made. These changes are summarized in Table 4.3-2. A total of 19 soil borings and 16 monitor wells were installed and 3 sediment and 2 surface-water samples were collected in the Charles Wood area. Soil and groundwater samples were collected from the borings and monitor wells and were analyzed for compounds determined to be characteristic of the wastes associated with each area, i.e., TCL and TAL analytes (see Tables 3.6-1 and 3.8-1). Appendix D presents the results of the Charles Wood sampling activities. Detailed information regarding the specific sampling protocols for each site is provided in the following subsections. In addition to the results of groundwater and soil analyses, the lithologic descriptions and water-level information are used to provide a hydrogeologic interpretation of the site where appropriate.

Figure 4.3-1 shows the location of the nine Charles Wood sites discussed in this subsection.

4.3.1 Background Samples

The locations of background sampling locations were selected in areas believed to be unaffected by past base activities. They were identified in the report *The Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (WESTON, 1993), which was approved by NJDEP. The purpose of the collection of background characterization data was to identify levels of chemicals that are naturally occurring.

Table 4.3-1

Site Investigation Summary — Charles Wood

Site Number	Site	Description	Potential Waste/ Contaminants	Past Samples and Analyses	Investigation Activities
CHARLES WOOD AREA					
CW-1	Wastewater treatment (lime pit)	4-m^3 tank containing limestone for neutralizing liquid waste from Bldg. 2700. Sludge removal periodically. Acid/base drains not currently used. Pit discharge to sewage system. Limestone was replaced in 1992; contractor took limestone off-site. Built with bldg. around 1952.	Solvents and metals.	Analyzed old limestone. Sludge analyzed; found organics and metals.	Installed 4 soil boring/monitor wells, 1 on each side of pit. Collected soil samples (2 to 3 per boring) from 7 to 9 ft. Analyzed for TCL +30/TAL. Sampled groundwater for same parameters.
CW-2	Wastewater treatment (lime pit)	Same as CW-1.	Solvents and metals.	Analyzed old limestone.	Same as CW-1.
CW-3, AOC-4	Landfill	Operated during 1940s. Site identified in IA now used for storage of contractor equipment and debris. Site was cleared in mid-1995.	Administrative waste and wood.	None.	Work postponed. Trenching is planned to evaluate subsurface conditions.
CW-3A	Landfill	Site in west was used for leaves and small debris, and by off-site dumpers. 1969 aerial photo shows disturbed soil at west site. One partially buried drum found. May have been used for demolition debris.	Unknown.	None.	Used geophysics (magnetics, EM-31, and GPR) to evaluate possible subsurface disposal near Pulse Power Building.
CW-4	Range (small arms)	Bldg. 2537. Indoor range. Cleaned and repainted in 1989. Has metal and sand bullet trap and filtered ventilation system. 3-ft diameter bare area to north of building with spent shells and bullet debris. Appears to be clean sand in back of building.	Lead.	None.	Collected 2 soil samples: 1 soil boring and 1 surface soil. Analyzed for TCL +30/TAL/TPH.
CW-5, AOC-3	Heavy metals	Former treatment plant. Discharged to stream. Sludge removed from sludge drying bed and plant cleaned, disinfected, and dismantled.	Heavy metals and cyanide.	Sludge analyzed in 1981 — no heavy metals.	Sampled sludge (see CW-9) for metals. Installed 2 soil borings in area of sludge drying beds. Sampled sediment at outfall. Analyzed for TCL +30/TAL/CN.

Table 4.3-1

Site Investigation Summary — Charles Wood (Continued)

Site Number	Site	Description	Potential Waste/ Contaminants	Past Samples and Analyses	Investigation Activities
CW-6	Pesticide Storage Building T-2044	Pesticides no longer stored in CW area. Use pesticide contractor. Pesticides were stored in steel igloo on concrete base. Was mixed outside of igloo and Bldg. T-2044.	Pesticides and herbicides.	Soil sampled in 1989 for pesticides. High levels of chlordane (up to 595 mg/kg) and trace amounts of others detected.	2 soil borings and installation of MW by Bldg. T-2044. Sampled soil, new well, and existing well MW-1 for TCL +30. Surface soil sample by ditch (TCL +30/TAL).
CW-9, AOC-3	Sludge dump	Sludge was placed on golf course. Sludge temporarily stored south of Bldg. T-2044. Currently has dark gray soil that had been removed near Hole 1.	Heavy metals.	None.	Installed 2 MWs for TCL +30/TAL. 9 surface soil samples for TAL, 1 soil boring for TCL +30/TAL.
AOC-7	Former hazardous waste storage area	Bldg. 2500 area. Has been used as storage area since 1961. Used as temporary hazardous waste storage area in 1987. Security guard overcome by fumes in 1987. Currently open field, no evidence of contamination.	Solvents, oil, and metals.	None.	Installed 6 soil borings. Analyzed for TCL +30.
PCB Transformers	Buildings	Several transformers in this area. All transformers were tested in 1990 for PCBs. Those with PCBs > 500 ppm were removed or remediated.	PCBs.	Transformers sampled — several >500 ppm. See transformer list.	Sampled PCB transformer locations.

Table 4.3-2

Differences Between Proposed and Actual Work at Charles Wood

Site	Differences
CW-1, CW-2	In accordance with work plan, only one sample was taken per soil boring instead of three because no contamination was detected during field efforts.
CW-3	Site had not been cleared prior to field effort; therefore, no investigation was conducted.
CW-4	Because contaminated soil had not been excavated prior to the field effort, one soil boring was installed instead of three surface soil samples.
CW-6, CW-9	The location of the monitor well was moved from site CW-6 to CW-9 because there was an existing well near the proposed location at CW-6. The existing monitor well at CW-6 was sampled. Surface soil sample SS-01 was analyzed for TAL metals, which was not originally proposed in the CDAP.

A total of five background soil borings, which were converted into monitor wells, were installed and two separate soil intervals were sampled from each boring. Two rounds of groundwater samples were collected from each location. Soil and groundwater samples were analyzed for the parameters listed in Tables 3.6-1 and 3.8-1. Background monitor wells were labeled as "B" wells, i.e., MW-06B. Charles Wood background locations are shown in Figure 4.3-2 and are labeled B-6, B-7, etc. Monitor well MW-06B was installed at background location B-6 and a similar practice was followed at the other background locations. Two background surface-water and sediment samples were also collected (Figure 4.3-2).

4.3.1.1 Hydrogeologic Interpretation

The five background monitor wells installed at the Charles Wood area were installed to depths ranging from 14 ft bgs to 15 ft bgs. Total depths were determined during drilling activities and were based on the depth where groundwater was encountered. The lithology and depth to groundwater varied between background locations, and this information is presented on the lithologic logs in Appendix A.

4.3.1.2 Soil Sampling Results

Soil samples were collected from two discrete intervals: 0 to 2 ft bgs and 2 ft bgs to depth to groundwater. Soil boring depths varied between the background locations, depending on the depth where water was encountered. The analytical results for background soil at specific sampling intervals are presented in Appendix D. Table 4.1-7 summarizes the maximum concentrations detected in background soil at Charles Wood.

VOCs

VOCs were not detected in Charles Wood background soil.

SVOCs

A total 10 SVOCs were detected below laboratory quantitation limits in background soil at the Charles Wood area (Table 4.1-7).

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected above the laboratory quantitation limit in background soil at the Charles Wood area.

Metals

As indicated in Table 4.1-7, 19 metals were detected in background soil at the Charles Wood area.

Cyanide

Cyanide was not detected in background soil at the Charles Wood area.

4.3.1.3 Groundwater Sampling Results

Two rounds of groundwater sampling were conducted at Charles Wood. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.1-7 summarizes the maximum background concentrations detected in background water at Charles Wood.

VOCs

VOCs were not detected in Charles Wood background groundwater.

SVOCs

Two SVOCs were detected in background groundwater at Charles Wood (Table 4.1-7).

Pesticides/PCBs

Pesticides/PCBs were not detected in background groundwater at Charles Wood.

Metals

As indicated in Table 4.1-7, 19 total metals were detected in background groundwater at Charles Wood.

4.3.1.4 Surface-Water Sampling Results

Two upgradient surface-water samples, SS-B3 and SS-B4, were selected as background at Charles Wood (Figure 4.3-2). Contaminants detected in background surface water and corresponding sample identifications are presented in Appendix D. Table 4.1-9 summarizes the maximum detected concentrations in total and soluble background surface water at Charles Wood.

VOCs

VOCs were not detected in total background surface water. Soluble background surface-water samples at Charles Wood were analyzed for VOCs.

SVOCs

One SVOC, bis(2-ethylhexyl) phthalate, was detected below laboratory quantitation limits in background surface water (total) at Charles Wood. SVOCs were not analyzed for in soluble background surface-water samples at Charles Wood.

Metals

In total background surface water, 13 metals were detected above laboratory quantitation limits at Charles Wood. Similarly, 11 metals in soluble background surface water were detected above laboratory quantitation limits.

4.3.1.5 Sediment Sampling Results

Two upgradient sediment samples, SS-B3 and SS-B4, were selected as background at Charles Wood (Figure 4.3-2). Contaminants detected in background sediment and corresponding sample identifications are presented in Appendix D. Table 4.1-9 summarizes the maximum detected concentrations in background sediment at Charles Wood.

VOCs

VOCs were not detected in background sediment at Charles Wood.

SVOCs

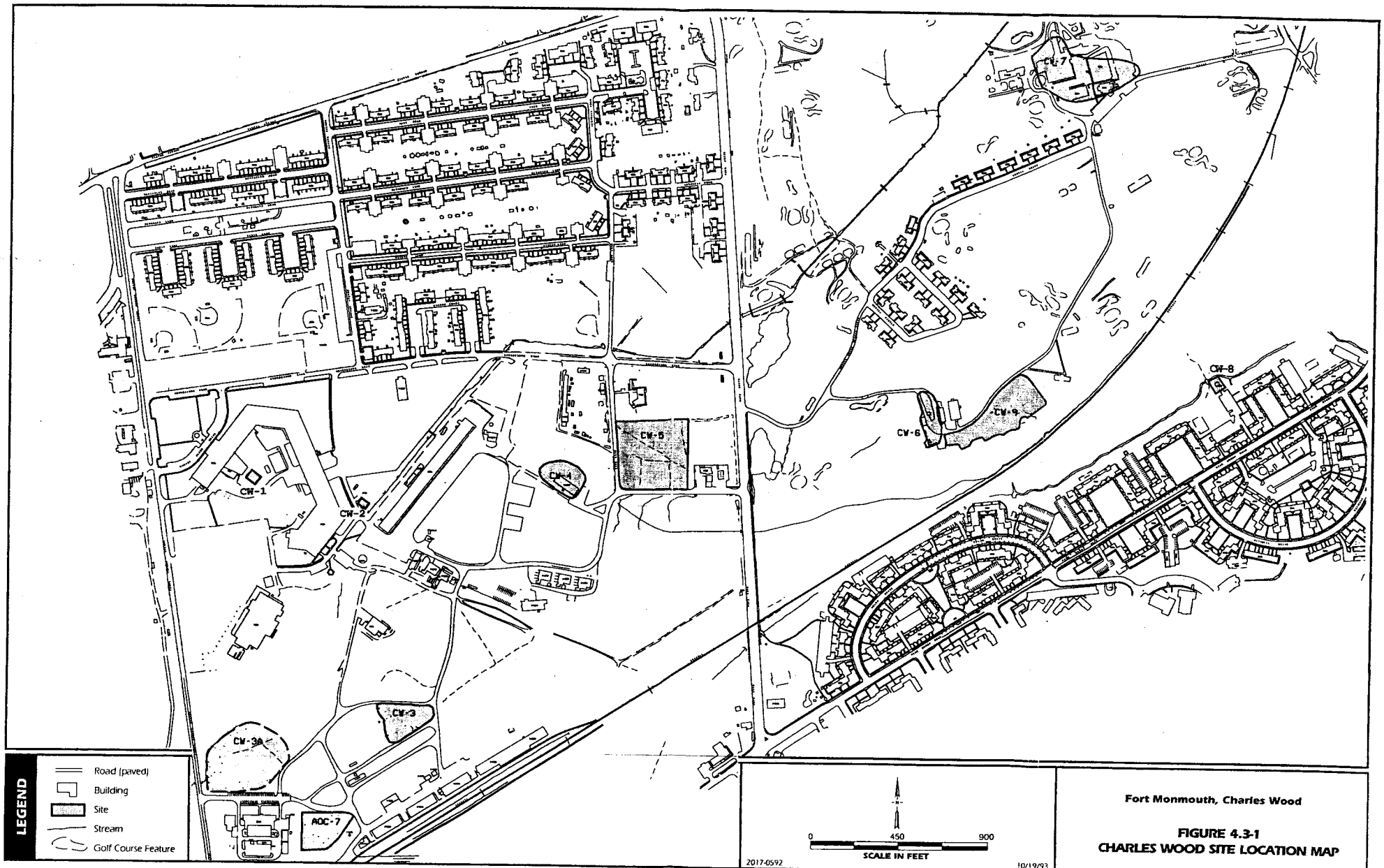
Bis(2-ethylhexyl) phthalate and di-n-butyl phthalate were detected below the laboratory quantitation limits in Charles Wood sediment. Six PAHs were detected below laboratory quantitation limits in Charles Wood sediment.

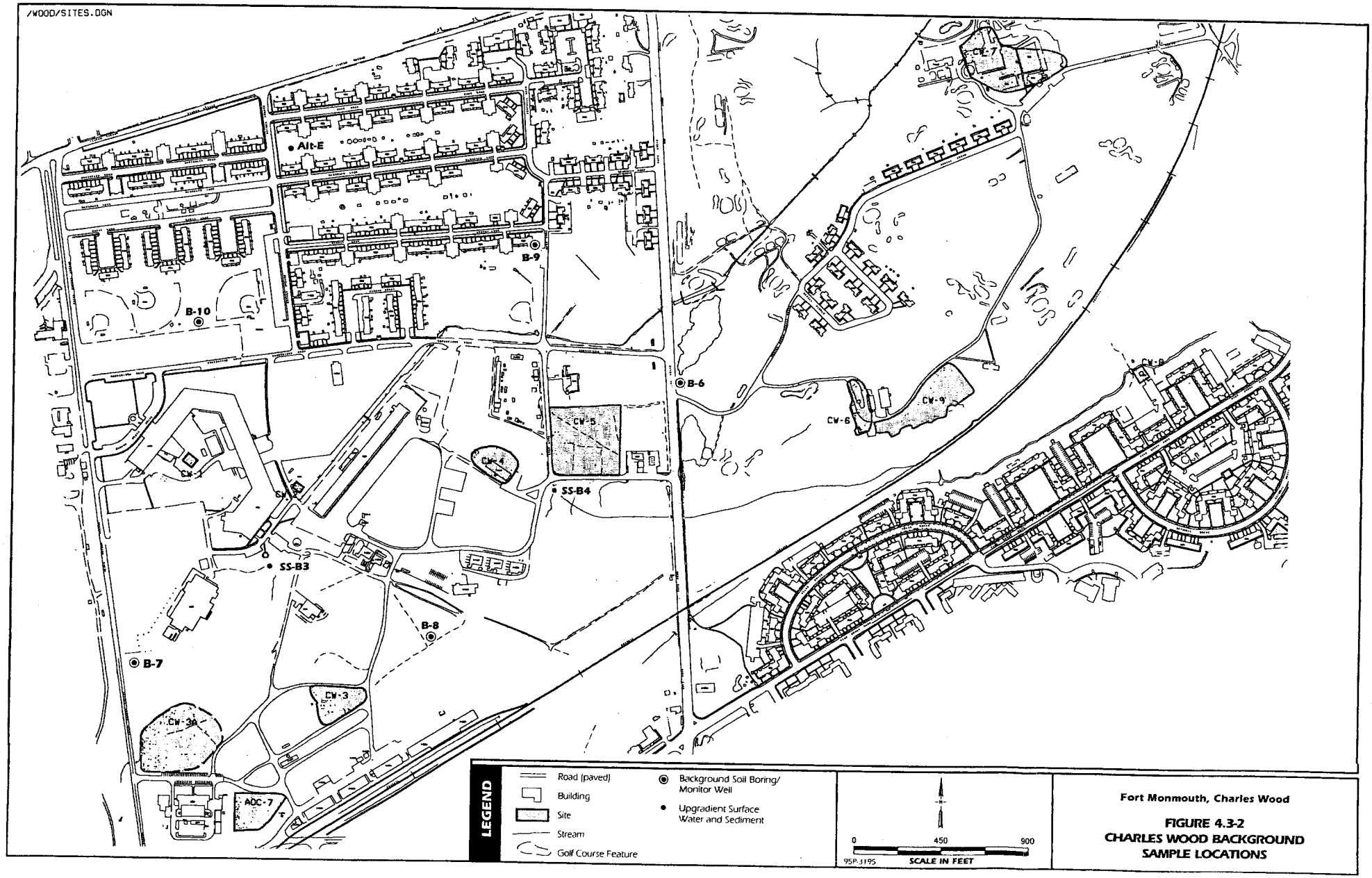
Pesticides

Three pesticides (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected in Charles Wood background sediment.

Metals

A total of 17 metals were detected in background sediment at Charles Wood above laboratory quantitation limits.


CW-1
CW-2
CW-3
CW-3A
CW-4
CW-5
CW-6
CW-7
CW-8
CW-9
AOC-7
LEGEND
Road (paved)
Building
Site
Stream
Golf Course Feature
0
450
900
SCALE IN FEET
2017-0592
10/19/93
Fort Monmouth, Charles Wood
FIGURE 4.3-1
CHARLES WOOD SITE LOCATION MAP



Fort Monmouth, Charles Wood

FIGURE 4.3-2
CHARLES WOOD BACKGROUND SAMPLE LOCATIONS

Site CW-1

4.3.2 Wastewater Treatment Lime Pit 1 (CW-1)

4.3.2.1 Site Location

Wastewater Treatment Lime Pit 1 (CW-1) is located in the central area of the Hexagon Building (Building 2,700) at Charles Wood just east of the west wing of the building (Figure 4.3-3). The approximate area of CW-1 is 2,960 ft^2 (0.07 acre).

4.3.2.2 Site History

This lime pit (CW-1) was built concurrently with the Hexagon Building; construction was completed in 1952. This is one of two 4-cubic-meter (m^3) acid neutralization pits that contain limestone chips; the other pit (CW-2) is discussed in Subsection 4.3.3. Liquid wastes from the north and west wings of the Hexagon Building passed through this pit before being discharged to the sanitary sewer. Chemical wastes of up to 150 m^3 per day were generated from the shops and laboratories of the Hexagon Building; this waste output was reduced to 115 m^3 per day in June 1978 (USATHAMA, 1980). According to the IA, a licensed waste hauler was hired to dispose of concentrated wastes, such as etching solutions and organic solvents.

Each neutralization pit has a concrete floor and concrete block and mortar walls, and measures 7 ft by 13 ft wide by 8 ft high. The cover is constructed of concrete with a steel access panel. Several wooden baffles divide the pit into sections.

In October 1992, the pit was cleaned out, inspected, and the limestone chips replaced. A vacuum truck was used to remove the sludge and stones from the pit, after which the pit was rinsed with water. All sludge, stones, and rinse water were placed in drums and disposed of as a hazardous waste. At present, laboratory wastes are managed under the installation hazardous waste program, which forbids the discharge of these wastes to the sewer.

4.3.2.3 Sampling Effort

The elevated concentrations of halogenated hydrocarbons (HHCs) found in samples collected during the 1992 cleanout indicates the possibility that solvents were discharged into the lime pits. Neither concrete nor concrete block is an effective barrier to the migration of halogenated solvents. Halogenated solvents may have migrated from the lime pit into surrounding soils and possibly into groundwater. To investigate this potential, a monitor well was proposed for construction on each side of the lime pit (MW-26 through MW-29, shown in Figure 4.3-3); however, the proposed monitor well locations were slightly adjusted to avoid the buried conduit and underground water and acid lines. The wells were positioned accordingly to investigate the potential of halogenated solvent migration from the lime pit into the surrounding soil and groundwater. Continuous split-spoon samples were screened with an HNu or OVM. According to the CDAP, if any VOCs were detected, soil samples were to be collected from 7 to 9 ft bgs, from the interval with the highest instrument readings, and from just above the water table; otherwise, one sample was to be collected from 7 to 9 ft bgs from each boring. Because no elevated OVM readings were recorded, soil samples were collected from the 7 to 9 ft bgs interval only. Soil samples were analyzed for TCL +30 parameters and TAL metals. Two rounds of groundwater sampling were conducted from each well and analyzed for TCL +30 parameters and TAL metals.

4.3.2.4 Hydrogeologic Interpretation

Lithologic logs from monitor well locations MW-26 through MW-29 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by a well sorted olive-orange-brown medium-coarse-grained quartz sand.

Groundwater saturation was observed at approximately 7.5 ft bgs at all well locations. The four monitor wells were screened across the water table and were completed to 15 ft bgs at each location. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that the local groundwater flow direction is northeast, toward the Hexagon Research and Development Building. Based on groundwater elevation measurements,

monitor wells MW-28 and MW-29 are downgradient of the area under investigation (Figure 4.3-4).

4.3.2.5 Soil Sampling Results

Four soil samples, one in each monitor well borehole, were collected between 7 and 9 ft bgs and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils, with the corresponding sample identifications, are listed in Appendix D. Table 4.3-3 compares the detected compounds with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background limits.

VOCs

VOCs were not detected in site soil.

SVOCs

One SVOC (di-n-butyl phthalate) was detected above laboratory quantitation limits in site soil. However, the concentration of this compound was less than the NJDEP SCC and the maximum site-specific background.

Pesticides/PCBs

Pesticides were not detected above laboratory quantitation limits in site soil. PCBs were not detected in site soil.

Metals

As indicated in Table 4.3-4, all of the metals detected in site soil were found in concentrations below the NJDEP SCC, where established.

Table 4.3-3
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soils at Site CW-1

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB26-A02 12/19/94 (7-9 ft bgs)	SB27-A02 12/19/94 (7-9 ft bgs)	SB28-A02 12/19/94 (7-9 ft bgs)	SB29-A02 12/19/94 (7-9 ft bgs)
SVOC's (mg/kg)							
Benzo(b)fluoranthene	0.188	0.9	0.078 J	ND	ND	ND	0.070 J
Benzo(a)pyrene	0.162	0.66	ND	ND	ND	ND	0.073 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.075 J	0.090 J	ND	ND
Di-n-butylphthalate	0.215	5700	2.0 B	0.081	0.086	0.077	0.130
PESTICIDES/PCBs (mg/kg)							
4,4'-DDE	0.0037	2	0.071	0.0038 J	ND	ND	ND
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	4070	5120	4850	4010
Arsenic	0.35	20	31.6	4.1	4.5	5.6	2.2
Barium	0.17	700	26	3.4	4.4	4.2	2.7
Beryllium	0.10	1	1.7	0.41	0.45	0.84	0.33
Calcium	2.2	NLE	653	236	283	229	669
Cobalt	0.71	NLE	4.5	ND	0.73	0.86	ND
Chromium	1.6	500	128	52.2	71.7	59.7	46.4
Copper	2.2	600	7.27[1]	1.8	2	1.1	1.2
Iron	0.58	NLE	45500	10800	14500	12900	9440
Lead	0.40	400[2]	15.1[1]	3.9	5.9	2	3.3
Potassium	(12.3-25.8)	NLE	10600	2700	3540	3660	2700
Magnesium	9.6	NLE	3960	960	1310	1310	943
Manganese	0.18	NLE	120[1]	7.2	10.6	8	5.4
Mercury	0.49	14	ND	ND	ND	0.21	ND
Sodium	3.8	NLE	56.8	33.4	29.7	20.4	15.5
Nickel	1.4	250	8.3	1.5	3.1	2.7	1.4
Vanadium	0.53	370	59.6	28.8	42.4	31.8	26.7
Zinc	0.41	1500	55.6	12.8	16.2	15.2	11.7

Compounds detected above NJDEP standards are noted by bold numbers
NLE - No Level Estabished
ND - Indicates that the compound was not detected at or below the quantification limits
ft bgs - Feet below ground surface
J - Indicates that the concentration value was estimated due to detection at or near the quatification limits
B- Compound was observed in the sample and associated laboratory blank.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Table 4.3-4
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-1

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW-26 2/21/95, 3/14/95 (avg.)	MW-27 2/21/95, 3/14/95 (avg.)	MW-28 2/21/95, 3/14/95 (avg.)	MW-29 2/21/95, 3/14/95 (avg.)
VOC's (µg/L)							
1,2-Dichloroethene (total)	4.4	10	ND	ND	ND	ND	**235**
Trichloroethene (TCE)	2.0**	1	ND	ND	ND	**35.5**	**885**
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	**4.5J**	ND	ND	ND
SVOCs (µg/L)							
1,2,4 Trichlorobenzene	9.6**	9	ND	ND	ND	ND	4J
bis-(2Ethylhexyl)phthalate	9.7	30*	600	3.75J	2J	1.5J	3J
Di-n-butyl phthalate	6.5	900	ND	ND	5.25J	ND	ND
METALS TOTAL (µg/L)							
Aluminum	24	200	8210	**3857.5**	**5695**	**3815**	**2370**
Arsenic	1.9	8*	25.1	4.375	4.7	4	1.625
Barium	1.7	2000	400[2]	98.7	127	53.05	50.8
Beryllium	0.9	20*	7[2]	ND	0.72	ND	ND
Calcium	10.4	NLE	8700	25350	24100	15050	28350
Cadmium	2.8	4	6[2]	ND	2.1	ND	ND
Cobalt	2.3	NLE	30.6	9.6	14.5	6.95	4.8
Chromium	2.9	100	49.6	40.575	55.55	28.15	19.7
Copper	1.9	1000	730[2]	4.525	5.675	2.675	ND
Iron	6.4	300	27000[2]	**7796.65**	**11295**	**6185**	**4555**
Potassium	685	NLE	10000[2]	12450	12950	12900	11000
Magnesium	18.3	NLE	25000[2]	9155	13650	4080	5520
Manganese	1.8	50	480[2]	**91.15**	**125**	46.35	**70.55**
Sodium	30.5	50000	197000[2]	**64550**	**71700**	18100	29400
Nickel	10.8	100	48.3	19.8	20.95	8.75	10.1
Lead	1.1	10*	<100[2]	3.9	8.3	3.15	1.425
Vanadium	2.3	NLE	28.9	29.175	36.075	23.9	15.6
Zinc	3.8	5000	133	35.75	29.25	24.85	22.6

[1] - Same compound as listed by NJDEP Tetrachloroethylene

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected at the quantification limit

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

NLE - No Level Established

** - Method detection limit exceeds the NJDEP groundwater quality criteria

[2] - Monmouth County maximum background concentration

4.3.2.6 Groundwater Sampling Results

Monitor wells at site CW-1 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for the individual sampling rounds are listed in Appendix D. Table 4.3-4 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.3-5 presents the locations of the compounds detected above both NJDEP criteria and maximum background.

VOCs

Three VOCs (tetrachloroethene, trichloroethene, and 1,2-dichloroethene) were detected in site groundwater in concentrations exceeding the NJDEP GWQC. Tetrachloroethene was detected below the laboratory quantitation limit in MW-26 in the March sampling round only; however, the concentration exceeded the NJDEP GWQC. Trichloroethene was detected in MW-28 and MW-29 in both sampling rounds. 1,2-Dichloroethene (total) was detected in MW-29 only in both sampling rounds. VOCs were not detected in MW-27. Figure 4.3-5 presents the locations of the averaged concentration of compounds detected above the NJDEP GWQC and the maximum background levels established at Charles Wood.

SVOCs

SVOCs were not detected in the site monitor wells above laboratory quantitation limits and the NJDEP GWQC from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-4, of the 18 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC; however, aluminum, iron, and manganese were detected in concentrations below the site-specific and Monmouth County maximum background levels. Although sodium was detected in concentrations greater than the site-specific background level, sodium was found in concentrations well below the Monmouth County maximum background level.

4.3.2.7 Recommendations

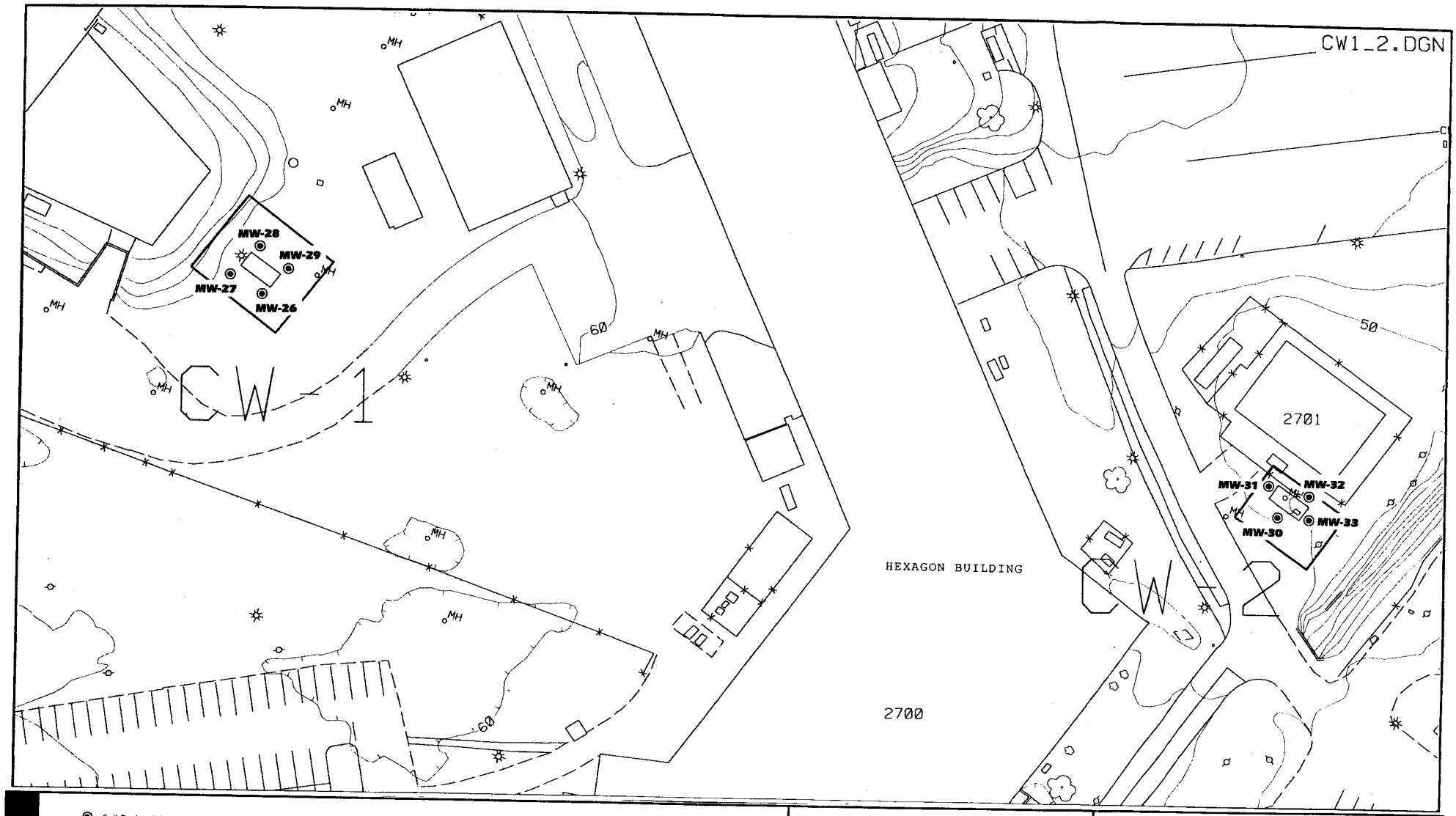
The soil sample results indicate that compounds of concern were either not detected or were below laboratory quantitation limits and NJDEP criteria.

The groundwater sampling results indicate that TCE, PCE, and 1,2-dichlorobenzene were detected in the groundwater downgradient of the site at levels that exceeded the NJDEP criteria.

Although NJDEP groundwater criteria were exceeded by three VOCs at this site, immediate remedial action is not required. The probable source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. The groundwater is believed to flow toward the headwaters of Wampum Brook, and the shallow groundwater probably flows into Wampum Brook. There is no use of groundwater between the source and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

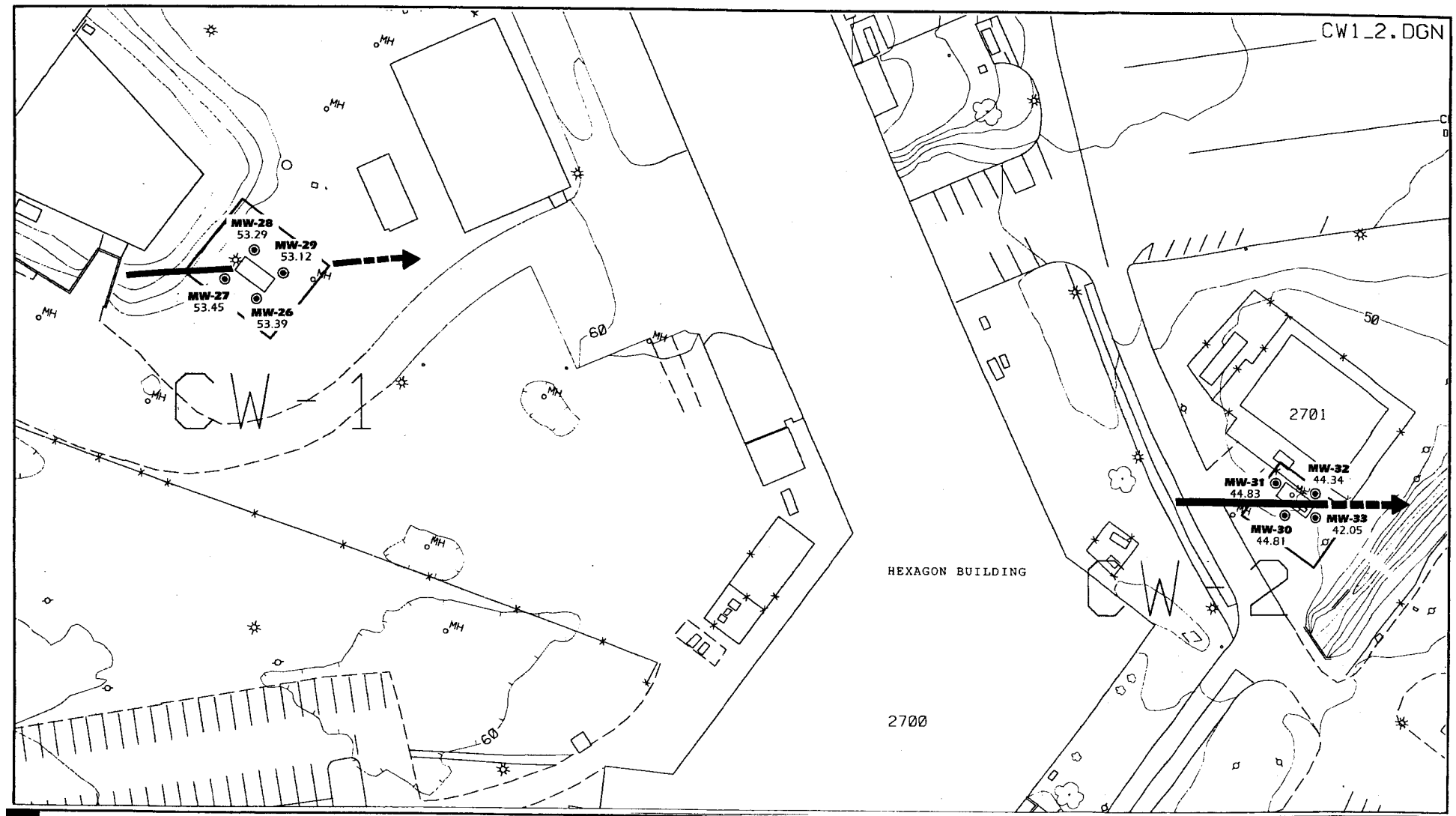
The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the

lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells at the downgradient edge of the plume. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



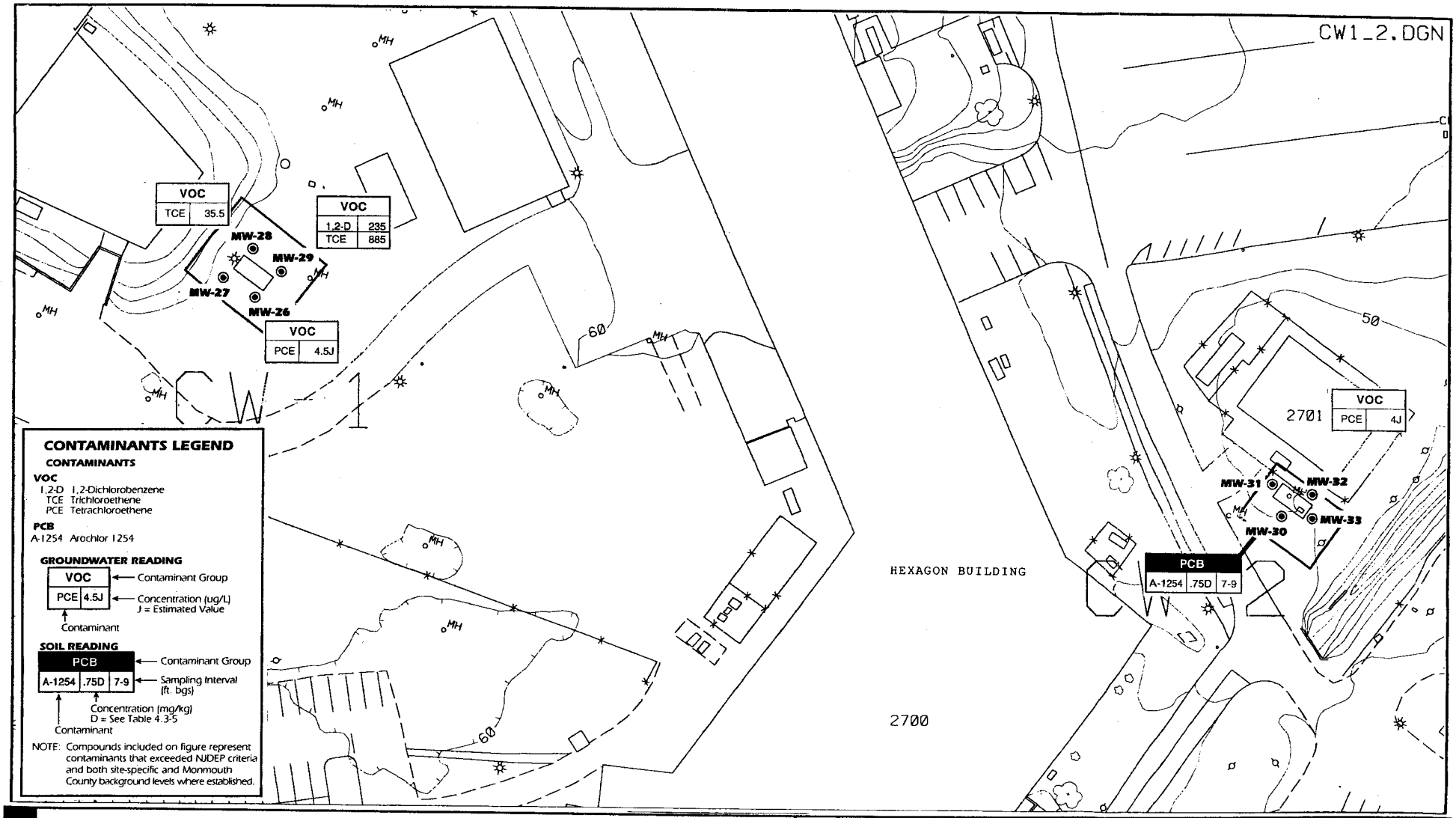
Fort Monmouth, Main Post

FIGURE 4.3-3
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2) SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-4
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Charles Wood

FIGURE 4.3-5
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL AND GROUNDWATER

Site CW-2

have migrated from the lime pits into surrounding soils and possibly into groundwater. To investigate this potential, a monitor well was constructed on each side of the lime pit (MW-30 through MW-33, shown in Figure 4.3-3). Continuous split-spoon samples were screened with an HNu or OVM. According to the CDAP, if any VOCs were detected, soil samples were to be collected from 7- to 9-ft bgs (near the base of the neutralization pit), from the interval with the highest instrument readings, and from just above the water table; otherwise, one sample was to be collected from the 7- to 9-ft interval of each boring. Because no elevated OVM readings were recorded during borehole activities, one sample from the 7- to 9-ft bgs interval was collected for the required parameters. Soil samples were analyzed for TCL +30 parameters and TAL metals. Two rounds of groundwater samples were collected from each well and analyzed for TCL +30 parameters and TAL metals.

4.3.3.4 Hydrogeologic Interpretation

Lithologic logs from site monitor wells MW-30 and MW-31 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material and reworked natural sediments. The components of the manmade materials consisted of quartz gravel and concrete, wood fragments, and pieces of old electrical conduit. The reworked natural sediments consisted of an interbedded green-gray silty fine-grained sand and green-gray fine-grained sandy silt. Lithologic logs from MW-32 and MW-33 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by shallow fill material and probable natural sediments. The filled material consisted of concrete fragments (to 2 ft bgs). The probable natural sediments consisted of an interbedded olive-gray moderately sorted silty fine-grained sand and a green moderately sorted very micaceous fine-grained sandy silt.

Groundwater saturation was observed between 1 and 8 ft bgs. The four monitor wells were screened across the water table and total depths ranged from 15 to 16 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that local groundwater flow is eastward (Figure 4.3-4). Based on groundwater elevation measurements, monitor wells MW-32 and MW-33 are downgradient of the former lime pit.

4.3.3.5 Soil Sampling Results

Four soil samples, one in each monitor well borehole, were collected and analyzed for the parameters listed in Table 3.6-1. Samples were collected between 7 and 9 ft bgs. The compounds detected in site soils, with the corresponding sample identifications, are listed in Appendix D. Table 4.3-5 compares site soil quality with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

Two VOCs (methylene chloride and 2-butanone) were detected in concentrations above laboratory quantitation limits. Methylene chloride and 2-butanone are common laboratory contaminants. Both compounds were detected in concentrations well below the NJDEP SCC.

SVOCs

Eight SVOCs were detected above laboratory quantitation limits in soil borings, but in concentrations below the NJDEP SCC. All SVOCs detected below quantitation limits were found in concentrations below the NJDEP SCC where established.

Pesticides/PCBs

Three pesticides (4,4'-DDE, 4,4'-DDD, and 4,4'-DDT) were detected in concentrations above laboratory quantitation limits, but were well below the NJDEP SCC.

One PCB (Aroclor-1254) in SB-30 was detected slightly above the laboratory quantitation limit as well as the NJDEP SCC (Figure 4.3-5). However, the PCB compound was not detected in groundwater samples from the corresponding well location, MW-30. PCBs were not detected in SB-31, SB-32, and SB-33.

Table 4.3-5
Fort Monmouth - Charles Wood
Summary of Detected Compounds
in Soils from Site CW-2

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB30-A02 12/16/94 (7-9 ft bgs)	SB31-A02 12/16/94 (7-9 ft bgs)	SB32-A02 12/16/94 (7-9 ft bgs)	SB33-A02 12/16/94 (7-9 ft bgs)
VOC's (mg/kg)							
Methylene Chloride	0.0027	49	ND	0.088	0.086	0.017	ND
2-Butanone	0.0041	1000	ND	ND	0.012 J	0.008 J	ND
SVOCs (mg/kg)							
Napthalene	0.277	230	ND	0.15 J	ND	ND	ND
2-Methylnaphthalene	0.287	NLE	ND	0.1 J	ND	ND	ND
Acenaphthene	0.221	3400	ND	0.17 J	ND	ND	ND
Dibenzofuran	0.215	NLE	ND	0.093 J	ND	ND	ND
Fluorene	0.208	2300	ND	0.21 J	ND	ND	ND
Phenanthrene	0.165	NLE	ND	1.3	ND	ND	0.075 J
Anthracene	0.152	10000	ND	0.33 J	ND	ND	ND
Carbazole	0.145	NLE	ND	0.18 J	ND	ND	ND
Fluoranthene	0.198	2300	0.042 J	1.5	ND	ND	0.073 J
Pyrene	0.178	1700	0.048 J	1.1	ND	ND	0.067 J
Benzo(a)anthracene	0.162	0.9	0.046 J	0.69	ND	ND	ND
Chrysene	0.145	9	0.083 J	0.71	ND	ND	0.043 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.170 J	0.16 J	0.1 J	0.059 J	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	0.79	ND	ND	ND
Benzo(k)fluoranthene	0.205	0.9	0.041 J	0.28 J	ND	ND	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	0.62	0.13 J	0.053 J	0.094 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	0.37 J	ND	ND	ND
Benzo(g,h,i)perylene	0.224	NLE	0.042 J	0.35 J	ND	ND	ND
Dibenzo(a,h)anthracene	0.198	0.66	ND	.089 J	ND	ND	ND
PESTICIDES (mg/kg)							
Aroclor-1254	0.039	0.49	ND	**0.75 D**	ND	ND	ND
4,4'-DDE	0.0037	2	0.071	0.0035 JP	0.0035 J	ND	0.0083 P
4,4'-DDD	0.0037	3	ND	0.012 P	0.0098	0.0073	0.26
4,4'-DDT	0.0037	2	0.053	0.062 P	0.0058	ND	0.046
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	6450	5430	2920	7310
Arsenic	0.35	20	31.6	5.7	8.5	2.6	15.7
Barium	0.17	700	26	36.2	58.6	23.6	326
Beryllium	0.1	1	1.7	0.58	0.51	0.28	**1.5**
Calcium	2.2	NLE	653	655	976	502	1270
Cadmium	0.86	1	ND	ND	ND	ND	0.9
Cobalt	0.71	NLE	4.5	0.95	4.2	0.91	5.9
Chromium	1.6	500	128	69.9	48.6	32.2	56.5
Copper	2.2	600	7.27[1]	2.7	2.9	2.7	5.5
Iron	0.58	NLE	45500	20400	19200	11100	17600
Lead	0.4	400[2]	15.1[1]	8.1	7.5	3.1	5.6
Magnesium	9.6	NLE	3960	1720	1270	776	1880
Manganese	0.18	NLE	120[1]	25.1	24.8	12.5	35.1
Nickel	1.4	250	8.3	4.9	11.2	2.6	23.2
Potassium	(12.3-25.8)	NLE	10600	4210	2610	1980	3350
Selenium	0.3	63	0.85	0.29	0.7	0.2	4.2
Vanadium	0.53	370	59.6	36.6	29.1	19.4	23.6
Zinc	0.41	1500	55.6	27.8	44.2	19.3	63.9

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J- Indicates that the concentration value was estimated due to detection at or near the quantification limit
P- The percent difference between the results from two GC cloumns is greater than 25% the lower of the two values is reported
ND - Indicates that the compound was not detected at or below the quantification limits
NLE- No Level Established
ft bgs. - feet below ground surface.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis.

Metals

As indicated in Table 4.3-5, of the 18 metals detected in site soil, only beryllium in SB-33 was found at a concentration slightly exceeding the NJDEP SCC. Although beryllium was detected in a concentration greater than the established Monmouth County background level, the metal was detected below the site-specific background level.

4.3.3.6 Groundwater Sampling Results

Monitor wells at site CW-2 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.3-6 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

Tetrachloroethene was the only VOC detected in site groundwater. The compound was detected in a concentration that was below the quantitation limit but slightly exceeding the NJDEP GWQC from the March sampling round only in MW-32 (Figure 4.3-5). Tetrachloroethene was not detected in MW-32 in the February sampling round.

SVOCs

One SVOC (di-n-butyl phthalate) was detected above the laboratory quantitation limit in MW-31 from the March sampling round. Di-n-butyl phthalate was detected well below the NJDEP GWQC. SVOCs detected below the laboratory quantitation limit were also detected below the NJDEP GWQC.

Table 4.3-6
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-2

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW30 2/21/95, 3/14/9 (avg.)	MW31 2/21/95, 3/14/9 (avg.)	MW32 2/21/95, 3/14/95 (avg.)	MW33 2/21/95, 3/14/95 (avg.)
VOC's (µg/L)							
Tetrachloroethene (PCE)[1]	2.7**	1*	ND	ND	ND	**4J**	ND
SVOCs (µg/L)							
1,2,4 Trichlorobenzene	9.6**	9	ND	ND	5J	ND	ND
bis-(2ethylhexyl)phthalate	9.7	30*	600	2J	ND	1.5 J	1.5 J
Di-n-butylphthalate	6.5	900	ND	4J	5.5	4J	4J
METALS TOTAL (µg/L)							
Aluminum	24	200	8210	129	17.65	**447.5**	**676**
Arsenic	1.9	8*	25.1	ND	ND	ND	1.5
Barium	1.7	2000	400[1]	233.5	180.5	211	234
Calcium	10.4	NLE	8700	63600	36050	46250	51250
Cobalt	2.3	NLE	30.6	ND	ND	ND	2.9
Chromium	2.9	100	49.6	ND	ND	ND	2.15
Copper	1.9	1000	730[1]	3.8	2.15	2	11.9
Iron	6.4	300	27000[1]	**45750**	**36350**	**48950**	**54450**
Potassium	685	NLE	4630	9980	8710	9580	8455
Magnesium	18.3	NLE	25000[1]	7045	4775	5595	6100
Manganese	1.8	50	480[1]	**365**	**222.5**	**268.5**	**273**
Sodium	30.5	50000	36400	17100	10325	11800	14350
Nickel	10.8	100	48.3	10.65	ND	11.75	2.7
Lead	1.1	10*	<100[1]	ND	ND	0.7	3.3
Vanadium	2.3	NLE	28.9	ND	ND	3.05	5.15
Zinc	3.8	5000	133	5.7	3.9	13.85	25.6

[1] Same compound as listed by NJDEP Tetrachloroethylene

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

NLE - No Level Established

J - Indicates that the concentration value was estimated due to detection at or near the quantitation limits

ND - Indicates that the compound was not detected at or below the quantitation limit

** Method detection limit exceeded NJDEP groundwater quality criteria

[1] - Monmouth County maximum background concentrations.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-6, of the 16 metals detected in site groundwater, 3 metals (aluminum, iron, and manganese) were found in concentrations exceeding the NJDEP GWQC. In addition, iron was detected in concentrations greater than those determined for site-specific and Monmouth County maximum background at Charles Wood. The presence of iron in exceedence of the NJDEP GWQC may be attributable to the high concentrations of iron present in natural soil found in Monmouth County. Therefore, iron is not identified as a compounds of concern. Although manganese was detected in concentrations above the site-specific background level in MW-30, MW-32, and MW-33, manganese was found in concentrations below the Monmouth County background level. Aluminum was found in concentrations below both the site-specific and Monmouth County maximum background levels.

4.3.3.7 Recommendations

The results of the soil sampling indicate that one PCB compound (Aroclor-1254) was detected in SB-30 at a concentration slightly above the NJDEP SCC. PCB compounds were not detected in the other three soil borings. In addition, PCBs were not detected in groundwater samples in the corresponding well location, MW-30.

Groundwater sampling results indicate that PCE was detected in the groundwater in one of the four wells (MW-32) in one of the two sampling rounds at levels slightly exceeding the NJDEP GWQC.

Although NJDEP groundwater criteria were exceeded by one VOC at this site, immediate remedial action is not required. The source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone

sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements from site monitor wells. There are no known uses of groundwater at or downgradient of the site. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of PCE concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells if necessary. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and from the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program. When the additional monitor wells are installed, soil samples will be collected for PCB analysis because of the detection of PCBs in a soil sample collected from SB-30.

Site CW-3

4.3.4 Landfill 3 (CW-3)

4.3.4.1 Site Location

Landfill 3 is located in the southeastern part of Charles Wood (Figure 4.3-6) and has been designated a construction area. The approximate area of Landfill 3 is 39,758 ft^2 (0.91 acre).

4.3.4.2 Site History

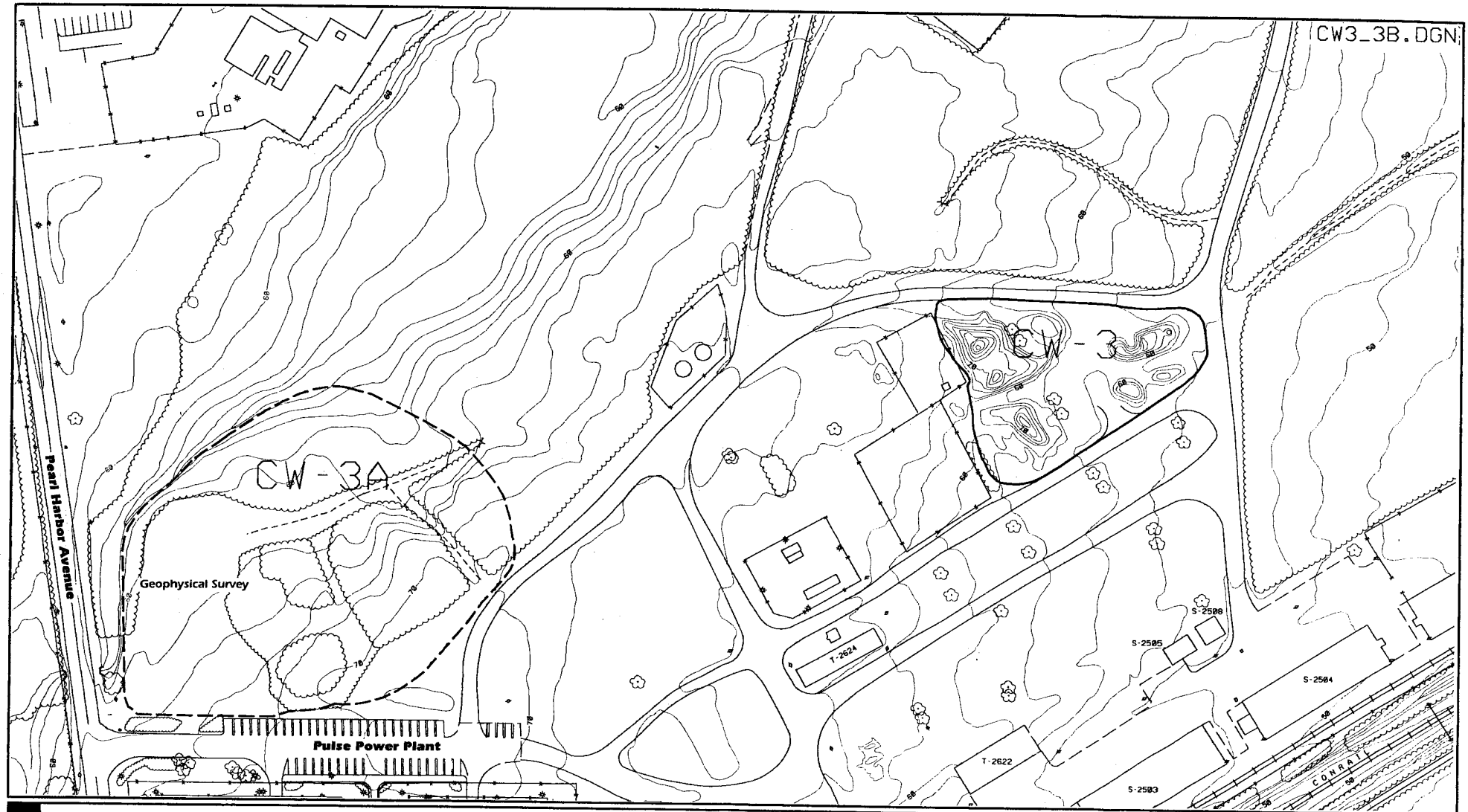
According to the IA, the Army Air Force used this area to dispose of administrative-type wastes and wood in the 1940s. Beginning in 1951, the aerial photographs show a cleared area used for storage. In 1981 and 1986, this area was relatively clear. During the 1993 site visit, the CW-3 area was being used as a construction rubble dump. Material observed included soil piles, brush, concrete, wood demolition debris, wood pallets, metal, and PVC pipe. There is no evidence of a subsurface landfill, and long-term Fort Monmouth employees said that this area was not used as a landfill.

4.3.4.3 Sampling Effort

Landfill 3 is shown in Figure 4.3-6. During the field investigation activities conducted between November 1994 and January 1995 at Fort Monmouth, construction rubble was present at site CW-3. The proposed sampling activities included collecting surface soil samples for TCL +30 parameters and TAL metal analysis if any evidence of soil staining was observed following the removal of the rubble. In addition, if high levels of chemical constituents were found in soils, monitor wells would be installed and sampled twice for TCL +30 parameters and TAL metals. Field sampling activities were postponed until the rubble could be removed. In June 1995, the construction rubble was removed. Exploratory trenches are planned to determine if any subsurface debris or soil staining is evident. However, because the area is believed to not have been used as a landfill, it is not anticipated that subsurface debris and soil staining will be found.

4.3.4.4 Recommendations

Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed and properly disposed of in June 1995 and exploratory trenches are planned to determine if any subsurface debris or soil staining is present. Field screening will be performed during excavation using a PID. NJDEP will be requested to send a representative to observe the investigation. In the absence of any elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.



Fort Monmouth, Charles Wood

FIGURE 4.3-6
LANDFILLS 3 (CW-3) AND 3A (CW-3A)

Site CW-3A

4.3.5 Debris Site (CW-3A)

4.3.5.1 Site Location

Debris Site CW-3A is located west of the CW-3 area, north of Pulse Power, Building 2707 (Figure 4.3-6). The approximate area of site CW-3A is 116,000 ft^2 (2.6 acres).

4.3.5.2 Site History

According to long-term Fort Monmouth employees, the area north of Pulse Power was used as a disposal area. The 1957 aerial photograph shows the CW-3A area with bare ground. According to *Fort Monmouth History and Place Names, 1917-1959*, 90 buildings at Charles Wood were razed in late 1955 and during 1956. It is possible that the demolition debris from these buildings was placed in this area. In the 1974 aerial photo, a steel igloo is visible on this area. By 1986, the western part of this area had not revegetated. During the 1993 site visit, some small debris was observed in the woods.

4.3.5.3 Sampling Effort

Site CW-3A is also presented in Figure 4.3-6. Surface geophysics were conducted in this area because it was not known if subsurface disposal had occurred in this area and in accessible cleared areas to the southeast in the construction areas. Magnetic and electromagnetic (EM-31) measurements were collected on 10-ft centers. GPR was also used to assess the degree of subsurface soil disturbance.

4.3.5.4 Geophysical Results

The geophysical investigation at Charles Wood site CW-3A utilized EM, MAG, and GPR methods to characterize the site. Prior to the investigation, a site walk revealed numerous metallic objects on the surface in the form of pipes, sheet metal, metal cans, and concrete, as well as nonmetallic objects such as asphalt and construction debris. The debris was noted and considered during data interpretation.

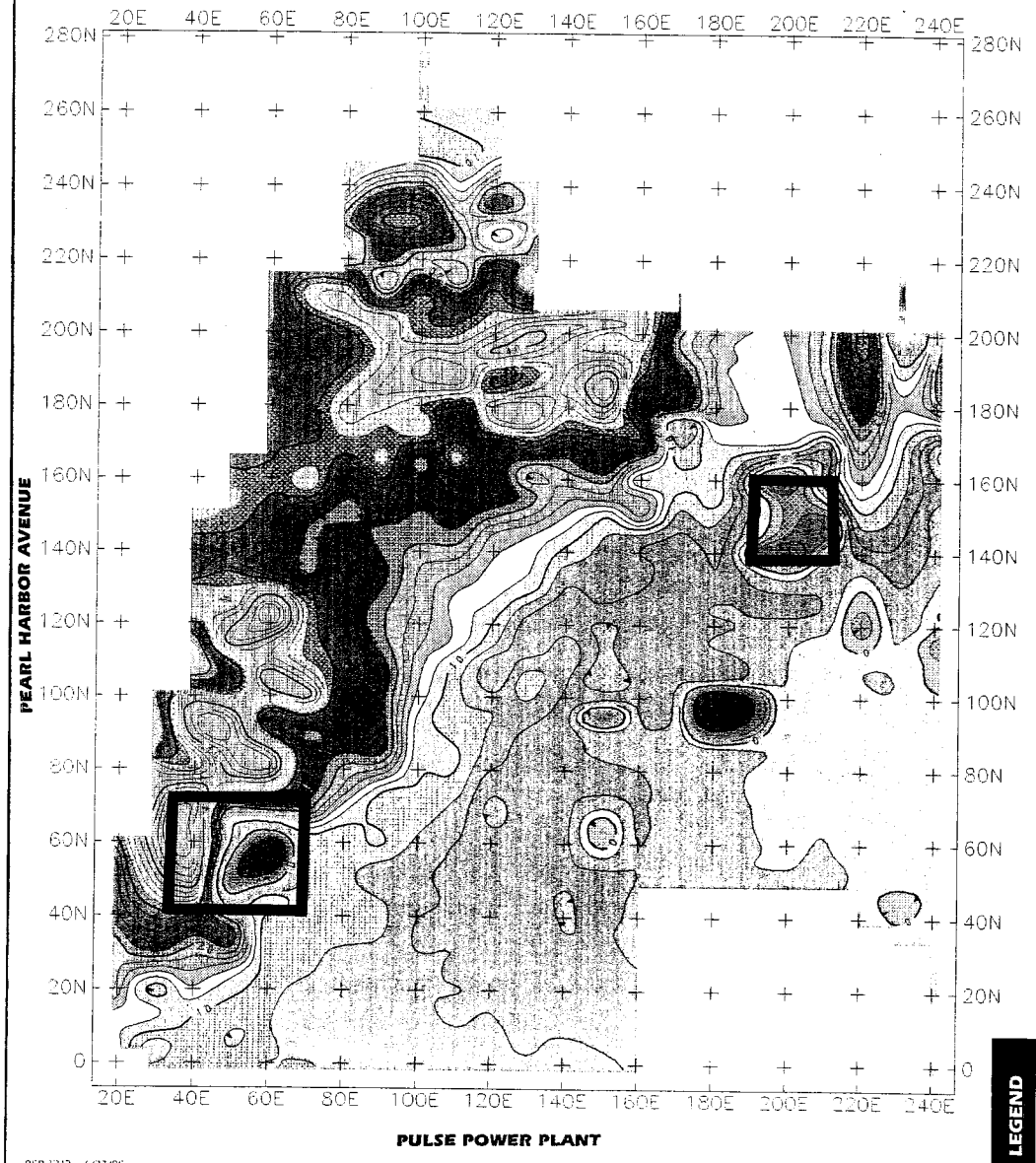
The EM survey revealed prominent anomalous signatures not attributed to surface debris at grid coordinates 40N to 70N/40E to 70E and 140N to 160N/190E to 210E. These anomalies are shown on the EM quadrature and in-phase contour plots, Figures 4.3-7 and 4.3-8, respectively, as either violet or blue contour intervals (high and low conductivity, respectively). These two EM anomalies are confirmed by the magnetometer survey as being ferrous material. As shown on the total magnetic field and magnetic gradient contour plots, Figures 4.3-9 and 4.3-10, respectively, these anomalies are represented as a high and low pair or magnetic dipole with violet and blue contour intervals. Other subtle anomalies exist throughout the area, as depicted on the EM in-phase plot in Figure 4.3-8, which may indicate metallic debris. However, the size and magnitude of these EM signals are negligible. Also, the EM quadrature plot (Figure 4.3-7) shows high apparent conductivity, represented by the violet contour interval, along the north and western borders of the site. This higher conductivity may be due to a subsurface change in lithology.

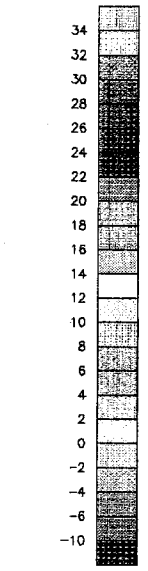
The GPR survey at CW-3A revealed chaotic reflectors within grid coordinates 40N to 70N/40E to 70E, confirming the EM and MAG anomalies at a depth of approximately 2 to 3 ft bgs. These chaotic reflectors are indicative of buried metallic debris and are shown on the GPR profile along 60N in Figure 4.3-10A.

4.3.5.5 Recommendations

Geophysical surveys indicated two areas where subsurface metallic debris may be present.

Exploratory trenching will be performed to investigate areas where subsurface metallic debris may be present. Field screening will be conducted with a PID during the excavation. NJDEP will be requested to send a representative to observe the excavation. In the absence of elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.





millimhos per meter
(mmhos/m)

LEGEND

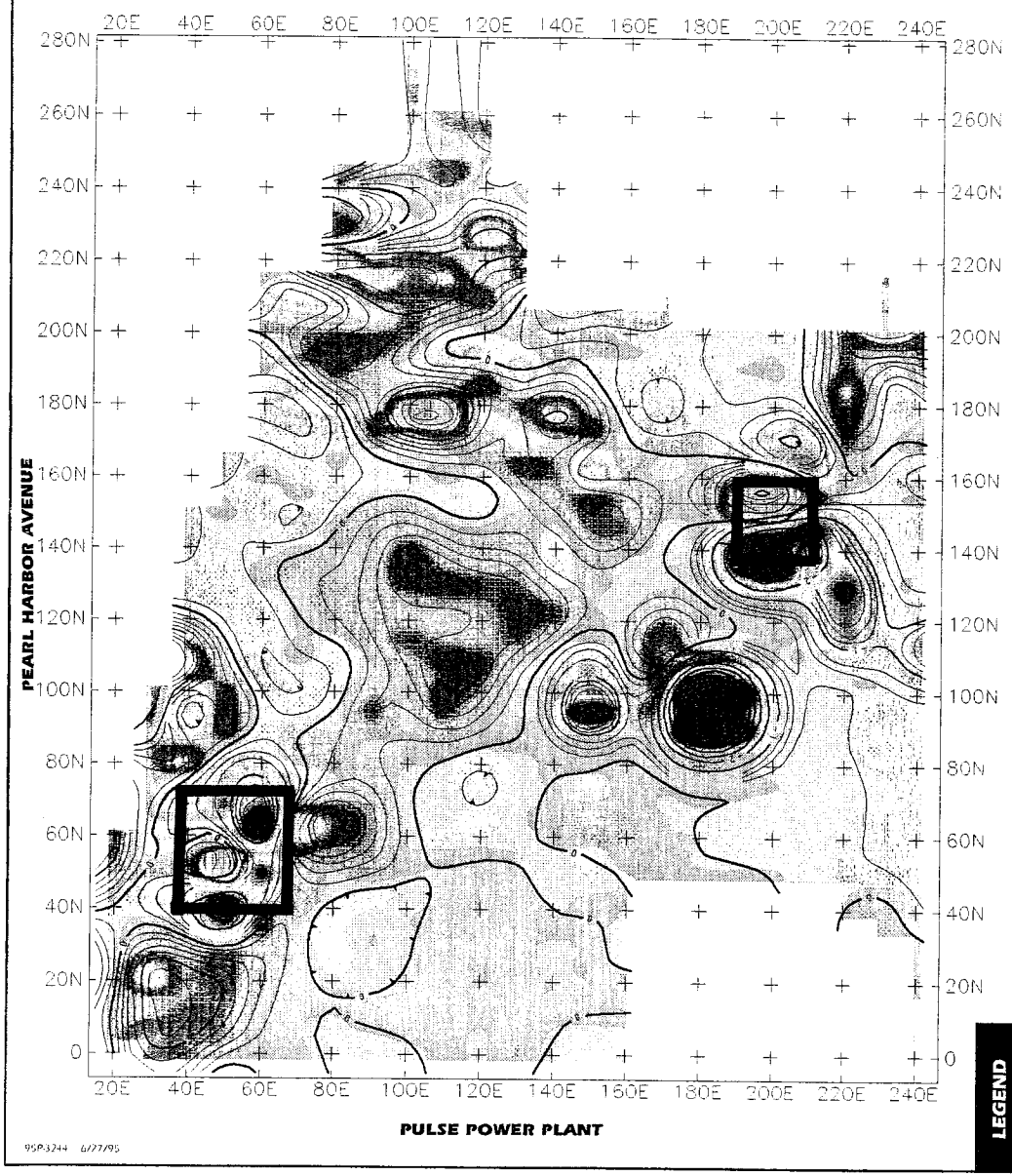
Subsurface Metallic Debris

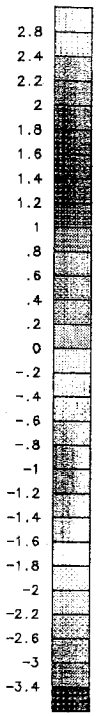
0 25 50 75
SCALE IN FEET

95P-3243 6/27/95

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-7
ELECTROMAGNETIC SURVEY
QUADRATURE COMPONENT – SITE CW-3A





LEGEND

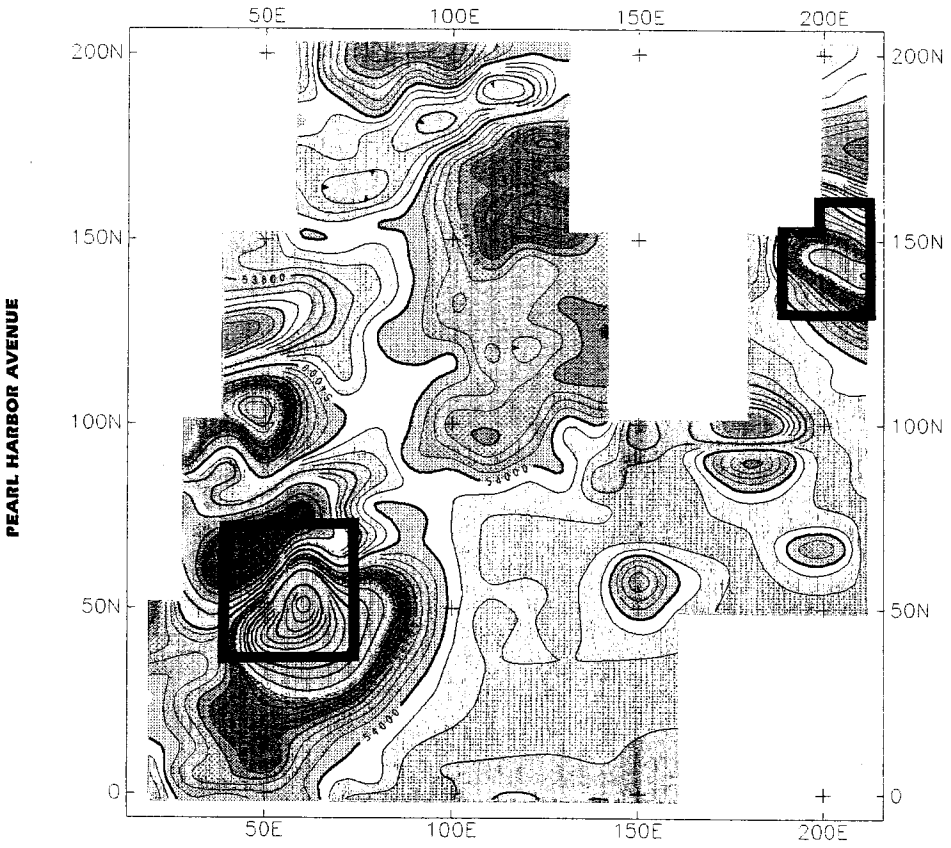
Subsurface Metallic Debris

0 25 50 75

SCALE IN FEET

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-8
ELECTROMAGNETIC SURVEY
IN PHASE COMPONENT – SITE CW-3A



LEGEND

Subsurface Metallic Debris

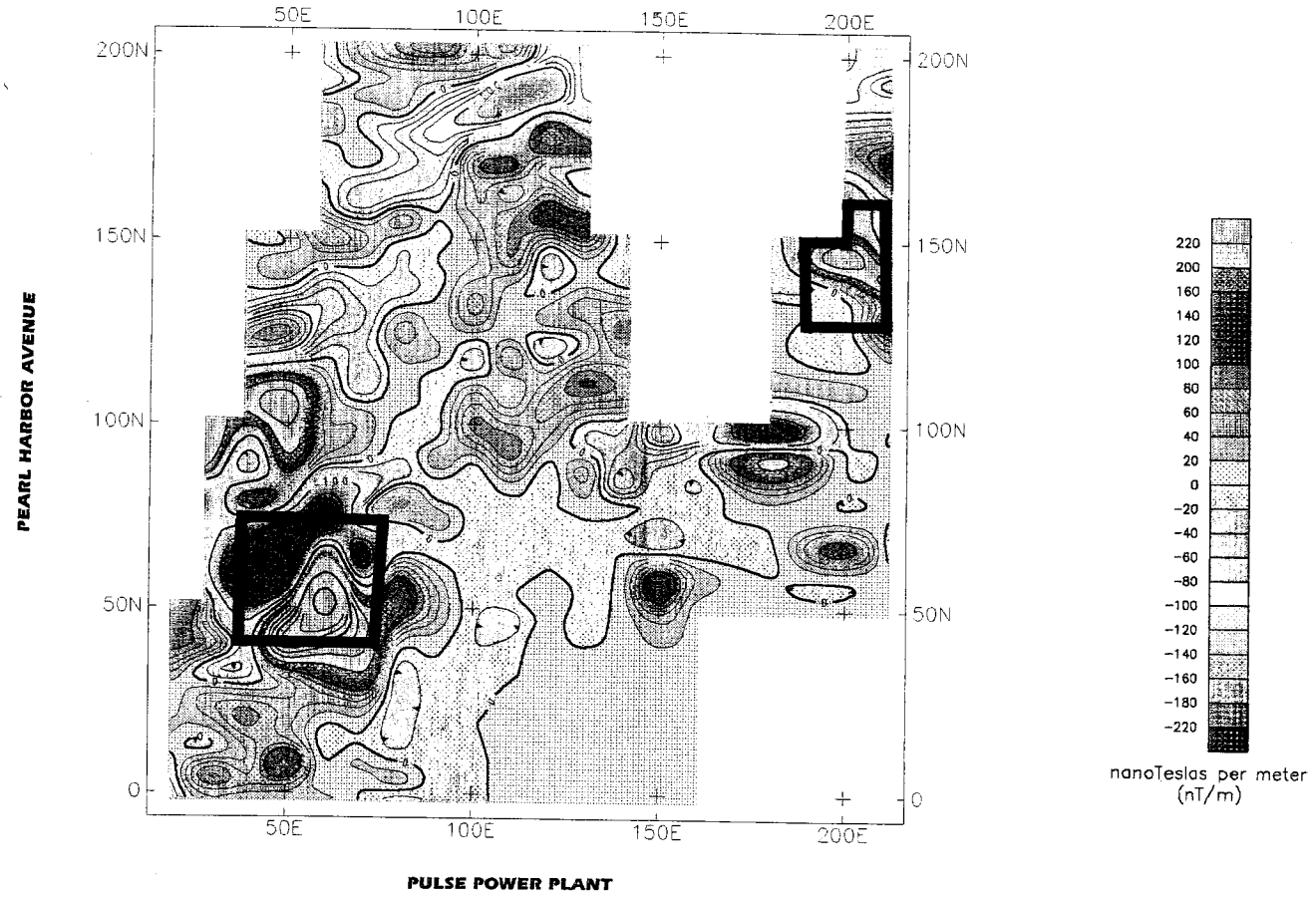
0 25 50 75

SCALE IN FEET

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-9
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE CW-3A

95P-3245 6/27/95



Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-10
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE CW-3A

95P-3246 6/27/95

File 9 FILE9 Created December 15,1994 11:46:54

512 samples/scan 25.004 scans/sec
Position: -3 nS range: 100 nS 8 Bits
Dielectric Constant: 0Antenna: 3102

Range Gain -4 12 36 44 47

Vert. IIR low pass N=2 F=48
Vert. IIR high pass N=2 F=8
Horiz. IIR stacking TC=4

Ft.Monmouth NJ

Charles Woods SITE CW3A

Line 60 N ; Marks at 20'intervals

Start: 30 E; End: 100 E

Gray Scale Table #4 Gray Scale Transform #1 Contrast 7: 0%

FIGURE 4.3-10A RADAR PROFILES SHOWING SUBSURFACE ANOMALY AT SITE CW-3A

Site CW-4

4.3.6 Range (Small Arms) (CW-4)

4.3.6.1 Site Location

The small arms firing range is a one-story building (Building T-2537) located in the central portion of the Charles Wood area (Figure 4.3-11). The approximate area of site CW-4 is 32,000 ft^2 (0.7 acre). The range is used for indoor firing of small arms. The small arms are fired into a metal baffle that deflects the rounds down into a sand pit. Currently, the sand is sifted and spent rounds and shell-casings are disposed of off-site. The firing range area is ventilated by a blower through a filter. The filter currently used is a Flanders Filters Model No. 0-00J-C-11-00-CL-12-00-GGF. It has an efficiency of 95%, based on a di-octyl-phthalate (DOP) test. A manufacturer's representative stated that he believes this filter would be close to 100% efficient in removing the likely particulates generated in a firing range.

Spend rounds are visible at the surface of a bare patch of soil about 3 ft in diameter northeast of the building. A pile of sand is on the northwest side of the building.

4.3.6.2 Site History

Interviews with facility personnel indicate that the interior of the building is cleaned periodically. The building is currently in use.

4.3.6.3 Sampling Effort

The CW-4 site is presented in Figure 4.3-11. The facility personnel intend to excavate the soil at the bare patch until spent rounds and shell casings are no longer visible. Because contaminated soil had not been excavated prior to the field effort, one soil boring was installed in place of two of the three surface soil samples proposed in the CDAP. The soil boring was drilled near the debris pile to a depth of 8 ft bgs, where saturation was noted at approximately 6.1 ft bgs. The lithology consisted of an orange-brown sand with trace silt. The soil sample from soil boring SB-01 was collected at a depth of 4 to 6 ft bgs and analyzed for TCL +30 parameters, TAL metals, and TPHs. One surface soil sample was collected from the bottom of

the sand pile (sample SS-01) using a scoop to dig 6 inches below the bottom of the pile in one location. No firing debris was observed. Surface soil boring SS-01 was analyzed for TAL metals only.

4.3.6.4 Soil Sampling Results

Two soil samples were collected, one sample (SB-01) from the 2- to 6-ft bgs sampling interval in the soil boring at the debris pile, and one sample (SS-01) from the 0 to 0.5-ft bgs interval from the sand pile in the rear of the building. The samples were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.3-7 compares the detected compound concentrations with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations. In addition, the results were also compared with the impact to groundwater SCC because no monitor wells were installed at this site.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected in site soil.

TPHs

Petroleum hydrocarbons were not detected in site soil.

Pesticides/PCBs

Pesticides/PCBs were not detected in site soil.

Table 4.3-7
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soils from Site CW-4

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/21/94 (4-6 ft bgs)	SS01-A01 11/30/95 (0-0.5 ft bgs)
METALS (mg/kg)					
Aluminum	3.9	NLE	15700	5030	687
Arsenic	0.35	20	31.6	1.5	7.8
Antimony	0.3	14	ND	ND	2.5
Barium	0.17	700	26	2.7	17.7
Beryllium	0.1	1	1.7	0.47	0.76
Calcium	2.2	NLE	653	302	699
Chromium	1.6	500	128	63.5	58.3
Cobalt	0.71	NLE	4.5	ND	0.62
Copper	2.2	600	7.27[1]	379	3.2
Iron	0.58	NLE	45500	11500	19700
Lead	0.4	400[2]	15.1[1]	**1440**	8.9
Magnesium	9.6	NLE	3960	1320	1450
Manganese	0.18	NLE	120[1]	8.8	26.2
Nickel	1.4	250	8.3	1.5	2.3
Potassium	(12.3-25.8)	NLE	10600	3490	2720
Silver	0.54	110	0.26[1]	ND	0.76
Selenium	0.3	63	0.85	ND	0.33
Sodium	3.8	NLE	50000	ND	16
Vanadium	0.53	370	59.6	20.6	37.3
Zinc	0.41	1500	55.6	42.6	24.6

Compound exceeding NJDEP soil cleanup criteria are noted by bold numbers.

ND - Indicates that the compound was not detected at or below the quantification limits

NLE - No Level Established

Note: MDL's for metal anaysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

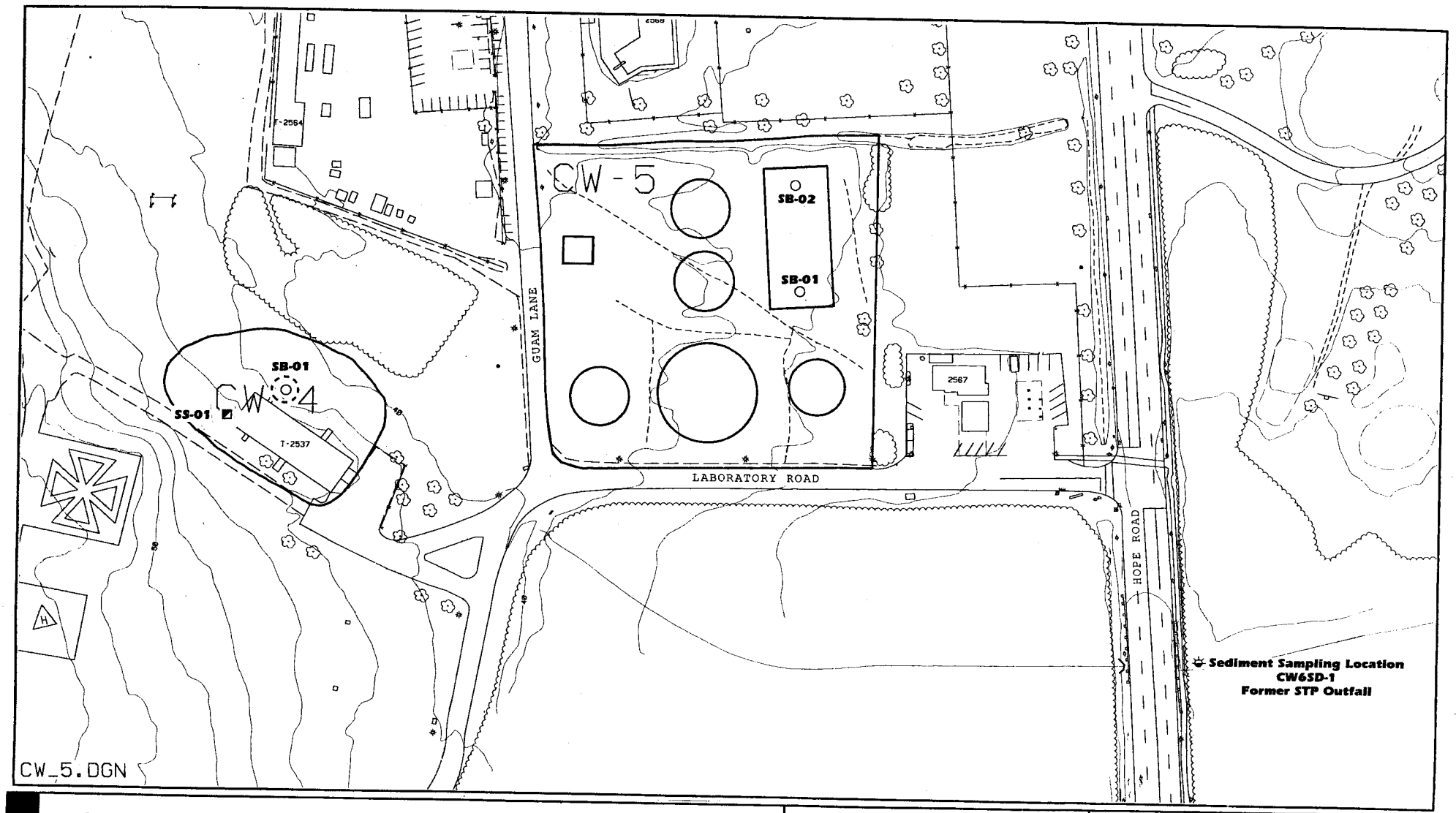
As indicated in Table 4.3-7, of the 20 metals detected in site soil, only lead was found in a concentration exceeding the NJDEP SCC. In addition, lead was detected in a concentration in SB-01 greater than the site-specific and Monmouth County maximum background levels for Charles Wood. The presence of lead in exceedance of criteria in the soil is reflective of the site's use for disposal of spent rounds. Figure 4.3-12 shows the locations of the compounds detected above the NJDEP SCC and above the established background levels for Charles Wood.

4.3.6.5 Recommendations

Soil sampling results indicate that only lead was detected at a concentration exceeding the NJDEP SCC at the spent round disposal area.

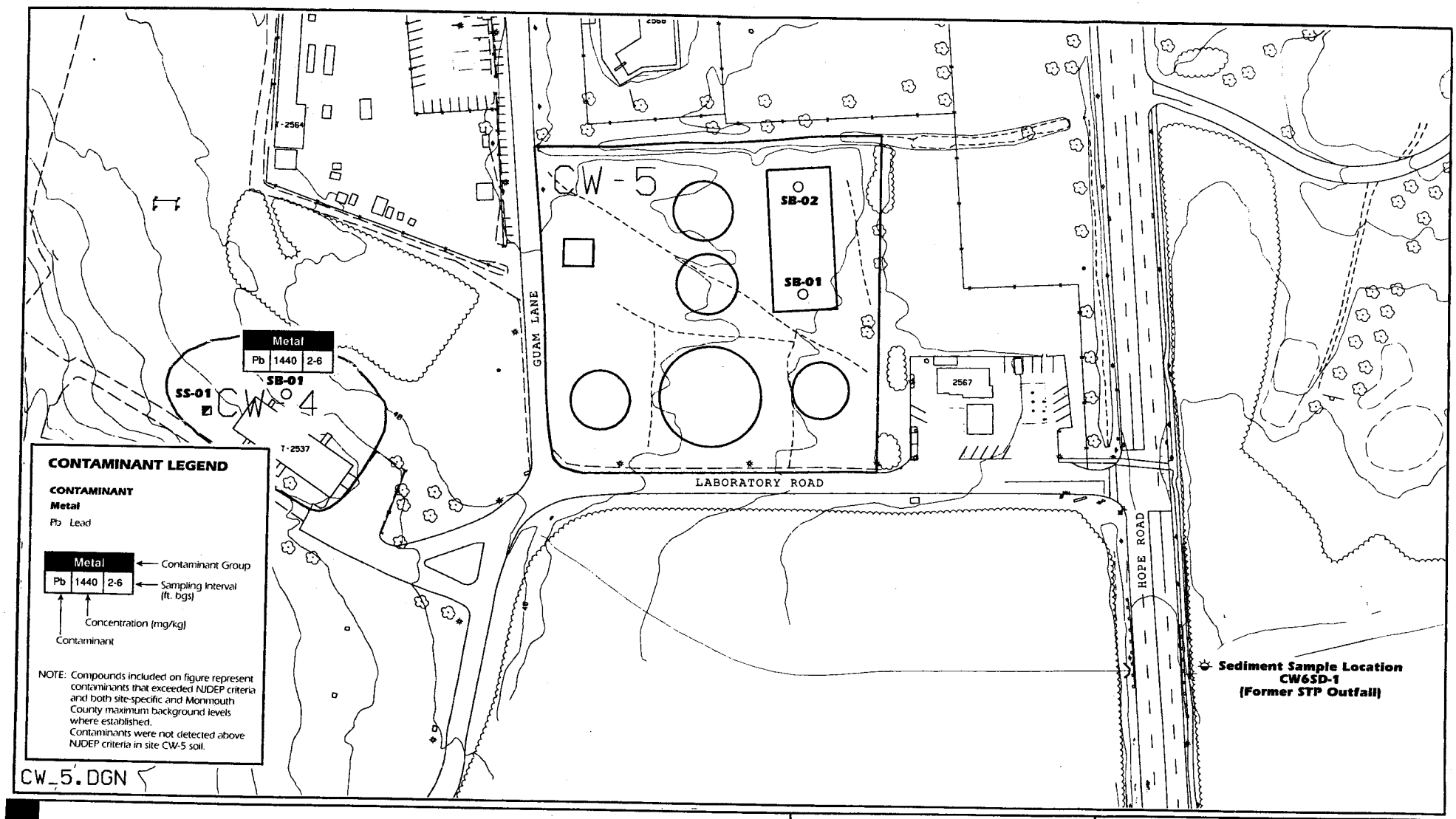
DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be removed and confirmation samples will be collected at the base of the excavation.

The contaminated soil will be removed and disposed of in accordance with applicable regulations. The area of contamination is approximately 8 feet in diameter. The estimated depth of excavation is assumed to be 7 feet. Excavation will be performed in conjunction with confirmatory sampling to ensure that NJDEP SCC are achieved. It is estimated that 17 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 7 feet. NJDEP will be requested to send a representative to observe the excavation.



Fort Monmouth, Main Post

FIGURE 4.3-11
SMALL ARMS RANGE (CW-4) AND FORMER SANITARY TREATMENT PLANT (CW-5) SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-12
SMALL ARMS RANGE (CW-4) AND FORMER SANITARY TREATMENT PLANT (CW-5) DISTRIBUTION OF CONTAMINANTS IN SITE SOILS

Site CW-5

4.3.7 Former Sanitary Treatment Plant (CW-5)

4.3.7.1 Site Location

The former STP at Charles Wood was located in the southwest corner of the area bounded by Hope Road to the east, Corregidor Road to the north, Guam Lane to the west, and Laboratory Road to the south (Figure 4.3-11). The approximate area of the STP was 134,080 ft^2 (3.1 acres).

4.3.7.2 Site History

The Charles Wood STP was built in 1942 to handle 800,000 gallons of sewage per day. As described in the IA, this STP consisted of a grit chamber screen, comminutor, primary and secondary settling tanks, biofilters, and a baffled contact chlorination tank. Sludge was treated in two anaerobic digesters and discharged to underdrained sand beds for final drying. Supernatant liquid from digester sludge and drainage from the sand beds were recycled through the STP for additional treatment. The chlorinated effluent was discharged to a tributary of Wampum Brook on the east side of Hope Road. Sludge went to the golf course and to landfills. This STP was closed on 29 October 1975 when the Charles Wood sewer system was connected to the NMCRSA system. In 1981, all sludges and supernatant liquids were removed from the STP, and the facility was cleaned and disinfected. The removal contractor was Modern Transportation Co. of Kearny, New Jersey. Mercury used in the distributor seal on the biofilter was removed and disposed of by the Directorate of Logistics. The physical facility was demolished in 1983. In 1993, a youth center was constructed on this site.

4.3.7.3 Sampling Effort

The CW-5 site is presented in Figure 4.3-11. One sediment sample from the outfall area east of Hope Road was collected and analyzed for TCL +30 parameters, TAL metals, and cyanide. Two soil borings were completed and soil samples collected in an effort to evaluate the impact of the former sludge-drying beds on soil quality in the original land surface. Soil borings SB-01 and SB-02 were completed to 8- and 6-ft bgs, respectively. Saturation was observed between 5.5- and 7-ft bgs. The lithology consisted of a yellow-brown gravelly sand fill underdrain by a

greenish-gray silty sand. Soil boring samples were analyzed for TCL +30 parameters, TAL metals, and cyanides.

4.3.7.4 Soil Sampling Results

Two soil samples, one in each borehole, were collected from the 6- to 8-ft bgs sampling interval and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.3-8 compares the detected compounds with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background levels. In addition, the detected compounds were also compared with the impact to groundwater SCC because no monitor wells were installed at this site.

VOCs

One VOC (2-butanone) was detected in SB-01. The concentration was detected well below both applicable SCC (residential and impact to groundwater) and background. 2-Butanone is a common laboratory contaminant.

SVOCs

One SVOC was detected above the laboratory quantitation limit in site soil in SB-01, but below the NJDEP SCC and background. In addition, all compounds detected below quantitation limits were also detected well below both SCCs.

Pesticides/PCBs

Five pesticides and two PCBs were detected in concentrations above laboratory quantitation limits in SB-01 and SB-02, but were detected well below both of their respective SCCs and background.

Table 4.3-8
Fort Monmouth - Charles Wood
Summary of Detected Compounds in
Soil from Site CW-5

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/20/94 6-8 ft bgs	SB02-A02 12/20/94 6-8 ft bgs
VOC's (mg/kg)					
2-Butanone	0.0041	1000	ND	0.013	0.01 J
SVOC's (mg/kg)					
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	0.066 J	ND
Benzo(a)anthracene	0.162	0.9	0.046 J	0.14 J	ND
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.21	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	0.22 J	ND
Benzo(k)fluoranthene	0.205	0.9	0.041 J	0.084 J	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	0.110 J	ND
Chrysene	0.145	9	0.083 J	0.15 J	ND
Fluoranthene	0.198	2300	0.042 J	0.21 J	ND
Phenanthrene	0.165	NLE	ND	0.085 J	ND
Pyrene	0.178	1700	0.048 J	0.25 J	ND
PESTICIDES (mg/kg)					
Aroclor-1254	0.042	0.49	ND	0.17	ND
Aroclor-1260	0.042	0.49	ND	0.15	ND
alpha-Chlordane	0.002	NLE	ND	0.0084 P	ND
gamma-Chlordane	0.002	NLE	ND	0.0092	ND
4,4'-DDE	0.0037	2	0.071	0.21 P	0.0058
4,4'-DDD	0.0037	3	ND	0.087	0.0035 J
4,4'-DDT	0.0037	2	0.053	0.087	ND
METAL TOTAL (mg/kg)					
Aluminum	3.9	NLE	15700	3920	3400
Arsenic	0.35	20	31.6	3.8	1.5
Barium	0.17	700	26	36.2	21
Beryllium	0.1	1	1.7	0.14	0.32
Calcium	2.2	NLE	653	1000	851
Chromium	1.6	500	128	42.2	38.3
Colbalt	0.71	NLE	4.5	1	ND
Copper	2.2	600	7.27[1]	21.5	2
Iron	0.58	NLE	45500	8950	5930
Lead	0.4	400[2]	15.1[1]	20.7	3.3
Magnesium	9.6	NLE	3960	527	717
Manganese	0.18	NLE	120[1]	19.7	7.2
Mercury	0.49	14	ND	0.63	ND
Nickel	1.4	250	8.3	2.7	1.6
Potassium	(12.3-25.8)	NLE	10600	944	1880
Silver	0.54	110	.26[1]	7.4	ND
Sodium	3.8	NLE	56.8	28.9	13.5
Selenium	0.3	63	0.85	0.4	0.35
Thallium	0.36	2	ND	ND	0.33
Vanadium	0.53	370	59.6	20.7	21.4
Zinc	0.41	1500	55.6	40.4	11.4

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
ND - Indicates that the compound was not detected at or below the quantification limits
NLE - No level established
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
P- The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.3-8, all metals detected in site soils were found in concentrations below the NJDEP SCC, where established.

4.3.7.5 Sediment Sampling Results

The STP sediment sampling location was determined to be freshwater because the area is not tidally influenced. One sediment sample, CW6SD-1, was collected at the former outfall of the STP (Figure 4.3-11).

VOCs

VOCs were analyzed for but were not detected in site sediment samples.

SVOCs

One SVOC [bis(2-ethylhexyl) phthalate] was detected above the laboratory quantitation limit from location C6SD1. NJDEP sediment guidance values are not established for this compound. This compound is a common laboratory contaminant.

Pesticides/PCBs

Three pesticide compounds (4,4'-DDD, 4,4'-DDT, and 4,4'-DDE) were detected in concentrations exceeding the NJDEP sediment guidance criteria. However, the concentrations were found in levels below their respective background concentrations. PCBs were not detected in site sediment samples.

Metals

As indicated in Table 4.3-9, no metals were detected in concentrations greater than the NJDEP sediment guidance criteria.

4.3.7.6 Recommendations

Three compounds (4,4′-DDT, 4,4′-DDD, and 4,4′-DDE) were detected in the sediment at levels that were above the NJDEP sediment guidance criteria but below background. Soil results were below the NJDEP SCC and established maximum background.

No further action will be taken.

Table 4.3-9
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Sediment
Site CW-5

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	NJDEP SEDIMENT GUIDANCE * (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS GIVEN BY WESTON SAMPLE LOCATION C6SD-1 12/1/94
SVOCs (mg/kg)				
bis-(2-Ethylhexy)phthalate	0.32	NLE	0.23	0.45
Dimethylphthalate	0.145	NLE	ND	0.40 J
Di-n-butylphthalate	0.215	NLE	0.12	0.081 J
Di-n-octyl phthalate	0.185	NLE	ND	0.11 J
PAHs (mg/kg)				
Benzo (a)anthracene	0.162	0.23	0.09	0.079 J
Benzo (b)fluoranthene	0.188	NLE	0.16	0.1 J
Chrysene	0.145	0.4	0.14	0.087
Fluoranthene	0.198	0.6	0.12	0.16 J
Phenanthrene **	0.165	0.225, 0.326	0.079	0.098 J
Pyrene	0.178	0.35	0.41	0.19 J
PESTICIDES/PCBs (mg/kg)				
4,4'-DDD	0.0042	0.002	0.015	**0.005 P**
4,4'-DDE	0.0042	0.002	0.096	**0.0067**
4,4'-DDT **	0.0042	0.003, 0.00183	0.11	**0.0029 JP**
Heptachlor epoxide	0.0021	NLE	ND	0.0042 P
METALS TOTAL (mg/kg)				
Aluminum	6.1	NLE	6660	866
Arsenic	0.35	33	5.8	0.74
Barium	0.48	NLE	45.7	9.6
Calcium	2.7	NLE	2960	509
Chromium	1.5	80	36.9	7.8
Cobalt	0.64	NLE	4.2	1.3
Copper	0.55	70	24.5	7.4
Iron	1.1	NLE	19600	6910
Lead	1.8	35	142	9.3
Magnesium	8.7	NLE	2560	320
Manganese	0.45	NLE	65.1	25.8
Potassium	186	NLE	1700	256
Sodium	3.5	NLE	271	54
Vanadium	0.66	NLE	39.5	5.4
Zinc	0.64	120	126	22.5

Compounds detected above NJDEP Sediment Guidance are bolded.

*- NOAA (1990) ER-L guidance. Values for DDE and DDD are not presented in NJDEP Sediment Quality Evaluations (1991).

** - Standards developed using equilibrium partioning approach in accordance with NJDEP Guidance for Sediment Quality Evaluation (1991). Total organic carbon concentrations of 1% assumed based on organic carbon content detected in adjacent sample.

ND - Compound was not detected at or above the quantification limit.

NLE - No Level Established

J - Concentration was estimated due to detection at or below the quantification limit

P - The percent difference between the results from the two GC columns is greater than 25%, the lower of the two values is reported

Site CW-6

4.3.8 Pesticide Storage Building T-2044 (CW-6)

4.3.8.1 Site Location

Building T-2044 is part of a small complex of buildings in the south-central portion of the Charles Wood area. The complex consists of Building T-2044, Building T-2070, and two metal igloos. The buildings are currently used to store golf course maintenance and landscaping equipment, such as mowers and tractors. The approximate area of site CW-6 is 25,000 ft^2 (0.6 acre).

4.3.8.2 Site History

The golf course maintenance complex may predate the purchase of the golf course by the Army. Pesticides and herbicides were formerly stored and mixed in this area. The IA contains a 1979 inventory of pesticides and herbicides that were used on the golf course and stored in Building T-2044. Some of the pesticides that were present in significant quantities are malathion, floriable sevin, resmithrin, Borocel IV, chlordane, and Dibrom. The IA also discusses a pest control program that was in effect in 1979. The compounds that were used in large quantities include carbaryl (sevin), malathion, chlordane, and diazinon. Some of the herbicides mentioned in the IA include 2,4-D, Dacthal, 2,4,5-T, and sodium arsenite.

The course groundskeeper, who has been part of the grounds crew for 33 years (1960 to 1993), said pesticides and herbicides were kept in a metal igloo and were mixed in two areas marked A and B in Figure 4.3-13. Area A is on a currently grass-covered area south of the igloo. At area A two USTs were excavated and the chlordane-contaminated soil was disposed of in spring 1995. Area B is on pavement near the office door in T-2044. This paved area has a drain that empties into a ditch in the woods immediately behind T-2044. The supervisor said that pesticide containers were not rinsed, but were disposed of to the landfill as is. Prior to 1980, the containers would have been disposed of at a landfill on the Main Post, such as site M-8.

Pesticides and herbicides are not currently stored or mixed on-site. The facility has hired an outside contractor to come in and apply pesticides and herbicides.

4.3.8.3 Sampling Effort

Limited sampling in 1989 determined that NJDEP SCC were exceeded in one soil sample. The sampling report did not clearly identify the location of the sample.

To confirm the existence of contamination and evaluate the effect on groundwater, two soil borings were completed at locations where pesticides mixing was believed to have occurred. These locations are just north of Building T-2044 (SB-02) and just south of the pavement that extends in front of Building T-2044 (SB-34). The borings were advanced to the water table and soil samples were taken at 6 to 12 inches and at 2 feet and analyzed for TCL +30 parameters. One surface soil sample was taken in the runoff ditch that runs into the woods southwest of Building T-2044 (Figure 4.3-13).

One monitor well was installed in these borings (MW-34), shown in Figure 4.3-13, and groundwater samples were collected in two sampling rounds and analyzed for TCL +30 parameters. Furthermore, a pre-existing monitor well (MW-01) was sampled twice for TCL +30 parameters in an effort to further evaluate the nature and extent of contamination on site groundwater quality.

The location of the monitor well proposed in the CDAP (MW-35) at site CW-6 was moved to site CW-9 because an existing monitor well was located near the proposed well location.

4.3.8.4 Hydrogeologic Interpretation

The lithologic logs from MW-34 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by a brown fine-medium-grained sand with olive-brown sand laminae. Saturation was observed at approximately 4 ft bgs. Monitor well MW-34 was screened across the water table and was drilled to 14.5 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March sampling round, indicate that local groundwater flow is east toward site CW-9 (Figure 4.3-14).

The following subsections summarize the soil and groundwater analytical results for site CW-6.

4.3.8.5 Soil Sampling Results

A total of four soil samples were collected: two in the MW-34 borehole, one in SB-02, and one in SS-01. The soil samples were analyzed for the parameters listed in Table 3.6-1. Sample depths of soil borings were 0 to 2 and 2 to 4 ft bgs in SB-34 and 0.5 to 1 ft bgs in SB-02. The surface soil sample was collected from 0 to 0.5 ft bgs. The analytical results for site soils at specific sampling intervals are listed in Appendix D. Table 4.3-10 compares the detected compounds with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Pesticides/PCBs

Seven pesticides were detected above laboratory quantitation limits in either SB-34, SB-02, and SS-01 from predominantly the 0- to 2-ft bgs sampling interval. In addition, one compound (dieldrin) was detected in a concentration exceeding the NJDEP SCC and background in SB-34 (0 to 2 ft bgs). Subsequently, dieldrin was not detected in groundwater samples from MW-34. Three of the compounds detected were below the NJDEP SCC and three do not have established criteria. PCBs were not detected in site soil. Figure 4.3-15 presents the locations of compounds detected above maximum background and the NJDEP criteria.

Table 4.3-10
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soil at Site CW-6

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB34-A01 1/3/95 (0-2 ft bgs)	SB34-A02 1/3/95 (2-4 ft bgs)	SB02-A01 5/10/95 (0.5-1 ft bgs)	SS01-A01 11/30/94 (1)
SVOC's (mg/kg)							
Phenanthrene	0.165	NLE	ND	ND	0.24 J	ND	ND
Fluoranthene	0.198	2300	0.042 J	0.049 J	0.18 J	ND	ND
Pyrene	0.178	1700	0.048 J	0.056 J	0.270 J	ND	ND
Benzo(a)anthracene	0.162	0.9	0.046 J	ND	0.160 J	ND	ND
Chrysene	0.145	9	0.083 J	ND	0.15 J	ND	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	ND	0.11 J	ND	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	ND	0.087 J	ND	ND
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	ND	0.054 J	ND	ND
Benzo(g,h,i)perylene	0.224	NLE	0.042 J	0.057	0.066	ND	ND
PESTICIDES (mg/kg)							
Heptachlor epoxide	0.002	NLE	ND	0.018 P	ND	0.0078 P	0.032 R
Dieldrin	0.0039	0.042	ND	**0.061 DP**	ND	ND	ND
alpha-Chlordane	0.002	NLE	ND	0.14 P	0.0034 P	.07 JD	0.870 CD
gamma-Chlordane	0.002	NLE	ND	0.11 P	0.0027 P	.068 JD	0.800 CD
4,4'-DDE	0.0037	2	0.071	0.074 P	ND	0.34 JCD	0.13
4,4'-DDD	0.0037	3	0.053	0.0095 P	ND	2.9 CD	0.86 C
4,4'-DDT	0.0037	2	ND	0.180 P	.011 P	ND	0.81 C
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	NS	NS	NS	5130
Arsenic	0.35	20	31.6	NS	NS	NS	11.6
Barium	0.17	700	26	NS	NS	NS	72.2
Calcium	2.2	NLE	653	NS	NS	NS	4430
Cadmium	0.86	1	0.135[2]	NS	NS	NS	**4.4**
Chromium	1.6	500	128	NS	NS	NS	65.8
Copper	2.2	600	7.27[2]	NS	NS	NS	69.8
Iron	0.58	NLE	45500	NS	NS	NS	10900
Lead	0.4	400[3]	15.1[2]	NS	NS	NS	203
Magnesium	9.6	NLE	3960	NS	NS	NS	1260
Manganese	0.18	NLE	120[2]	NS	NS	NS	78.8
Mercury	0.49	14	ND	NS	NS	NS	6
Potassium	(12.3-25.8)	NLE	10600	NS	NS	NS	1420
Silver	0.54	110	0.26[2]	NS	NS	NS	1.5
Sodium	3.8	NLE	56.8	NS	NS	NS	103
Selenium	0.3	63	0.85	NS	NS	NS	0.7
Vanadium	0.53	370	59.6	NS	NS	NS	21.8
Zinc	0.41	1500	55.6	NS	NS	NS	463

Compounds exceeding NJDEP soil cleanup criteria are bolded
NA - Not Analyzed; NS - Not Sampled
ND - Compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
NLE - No Level Established
C - Pesticide identification was confirmed by GC/MS
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
P - The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported
R - Data rejected, URS The Data Validator

Note: MDL's for metal anaysis is actually the highest detection limit with potassium given as a range due to high variability.

Note: Metals were analyzed (SS-01), but were not proposed in the scope of work.

(1) - VOC/SVOC's were collected from 6" to 12" bgs, pesticides and metals were collected from 0"-6" bgs.

[2] Monmouth County maximum background concentrations.

[3] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.3-10, of the 18 metals detected in site soils, only cadmium was found in a concentration exceeding the NJDEP SCC in SS-01. In addition, cadmium was detected in a concentration greater than that determined for site-specific and Monmouth County maximum background at Charles Wood. However, in accordance with the NJDEP *Cleanup Standards for Contaminated Sites* (NJDEP, 1992), the arithmetic mean of cadmium was calculated from the 10 surface soil samples at sites CW-6 and CW-9, since the samples were collected within the same sampling interval (0 to 6 inches). The arithmetic mean or concentration was then compared with the NJDEP SCC and established background. The arithmetic mean (1 mg/kg) was found at a level equal to the NJDEP SCC (1 mg/kg). However, sites CW-06 and CW-09 are located on a golf course. *A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey*, 1993, provides a separate background concentration level for cadmium in golf course areas. When comparing the arithmetic mean of the analytical results at the two sites with the arithmetic mean for cadmium on golf courses in Table 9 of that document (2.26 mg/kg), the analytical result is found in a concentration below established background. Cadmium is reported in higher concentrations on golf courses due to the direct application of fertilizers, herbicides, and pesticides (Field et al., 1993). Therefore, cadmium is not considered a compounds of concern. Although metals were sampled for in surface soil location SS-01, a metals analysis was not proposed in the original scope of work.

4.3.8.6 Groundwater Sampling Results

Monitor wells MW-34 and MW-1 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.3-11 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

Table 4.3-11
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-6

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW34 2/10/95, 3/13/95 (avg.)	MW01 5/10/95, 5/27/95 (avg.)
VOC (µg/L)					
Benzene	2.4**	1*	ND	ND	**8**
Ethylbenzene	3.1	700	ND	ND	1J
Xylene (total)	3.8	40	ND	ND	2J
Pesticide and PCB's (µg/L)					
4,4'-DDD	0.097	0.1	ND	ND	0.086J
gamma-chlordane	0.046	NLE	ND	ND	.035JP
alpha-chlordane	0.046	NLE	ND	ND	0.0545

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected

J - Indicates that the concentration value was estimated due to detection at or near the detection limits

** - Method detection limit exceeded NJDEP groundwater quality criteria

P - Percent difference between the results from the GC columns is greater than 25%, the lower of the two values is reported

VOCs

One VOC (benzene) was detected above the laboratory quantitation limit in MW-1 from the February sampling round only. In addition, benzene was found in a concentration exceeding the NJDEP GWQC. Figure 4.3-15 presents the locations of the compounds detected above both background and criteria.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site monitor wells MW-34 and MW-1 from either sampling round. In addition, SVOCs were detected below the NJDEP GWQC.

Pesticides/PCBs

One pesticide (alpha-chlordane) was detected in a concentration slightly above the laboratory quantitation limit in MW-1; however, NJDEP GWQCs are not established for alpha-chlordane. PCBs were not detected in site monitor wells from either sampling round.

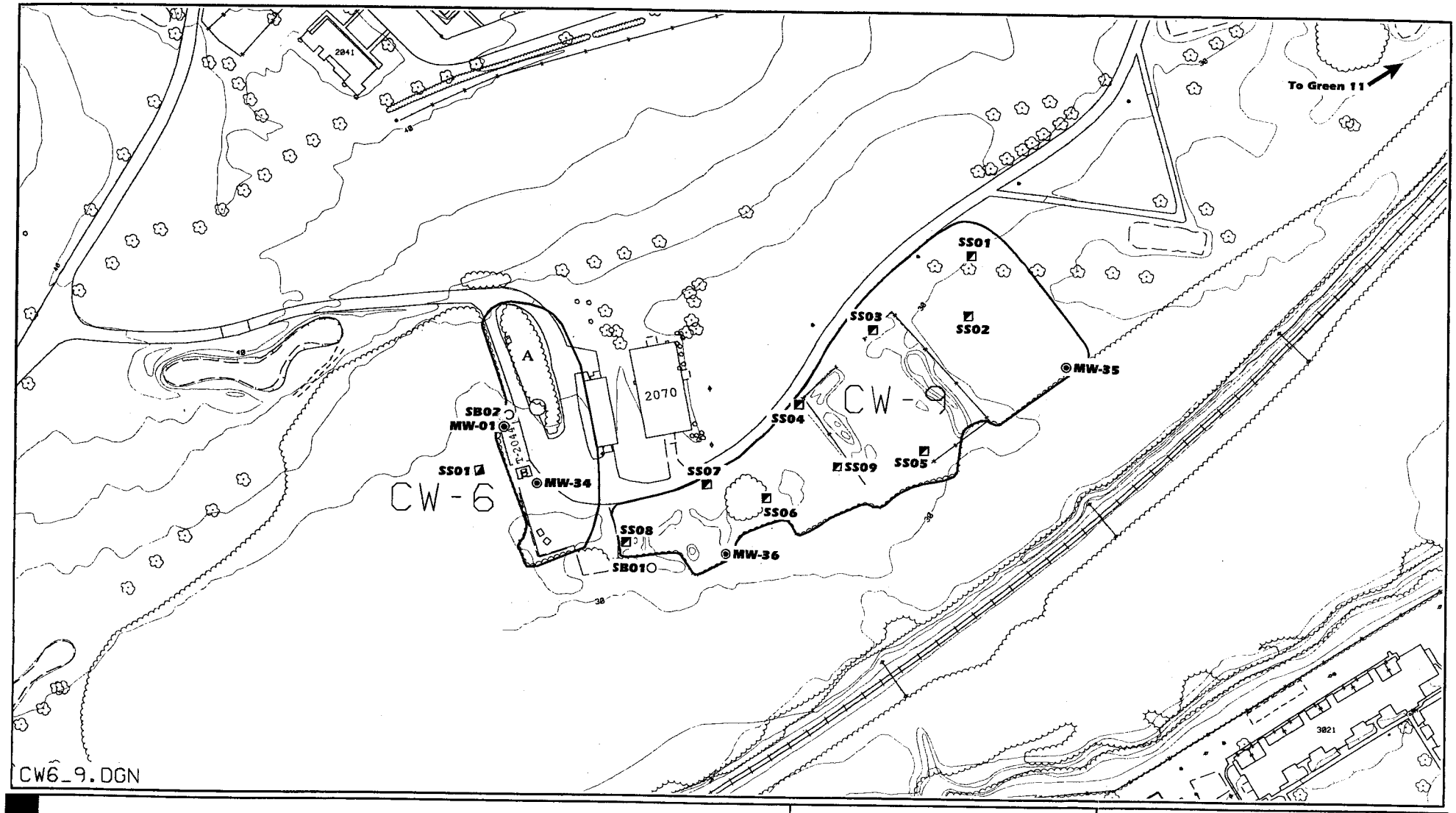
4.3.8.7 Recommendations

The pesticide dieldrin and the metal cadmium were detected in the soil at two different locations, each at levels that exceeded NJDEP SCC and background. However, the average concentrations of dieldrin and cadmium in surface soil samples at CW-6 and CW-9 did not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. Groundwater samples indicated that benzene was detected in the existing monitor well (MW-1), which is attributed to a previously removed UST. Benzene was not detected in downgradient wells. Pesticides were not detected in any groundwater samples above NJDEP criteria.

NJDEP groundwater criteria were exceeded for one VOC, but the measured value was just slightly above the GWQC. Therefore, no immediate remedial action is necessary.

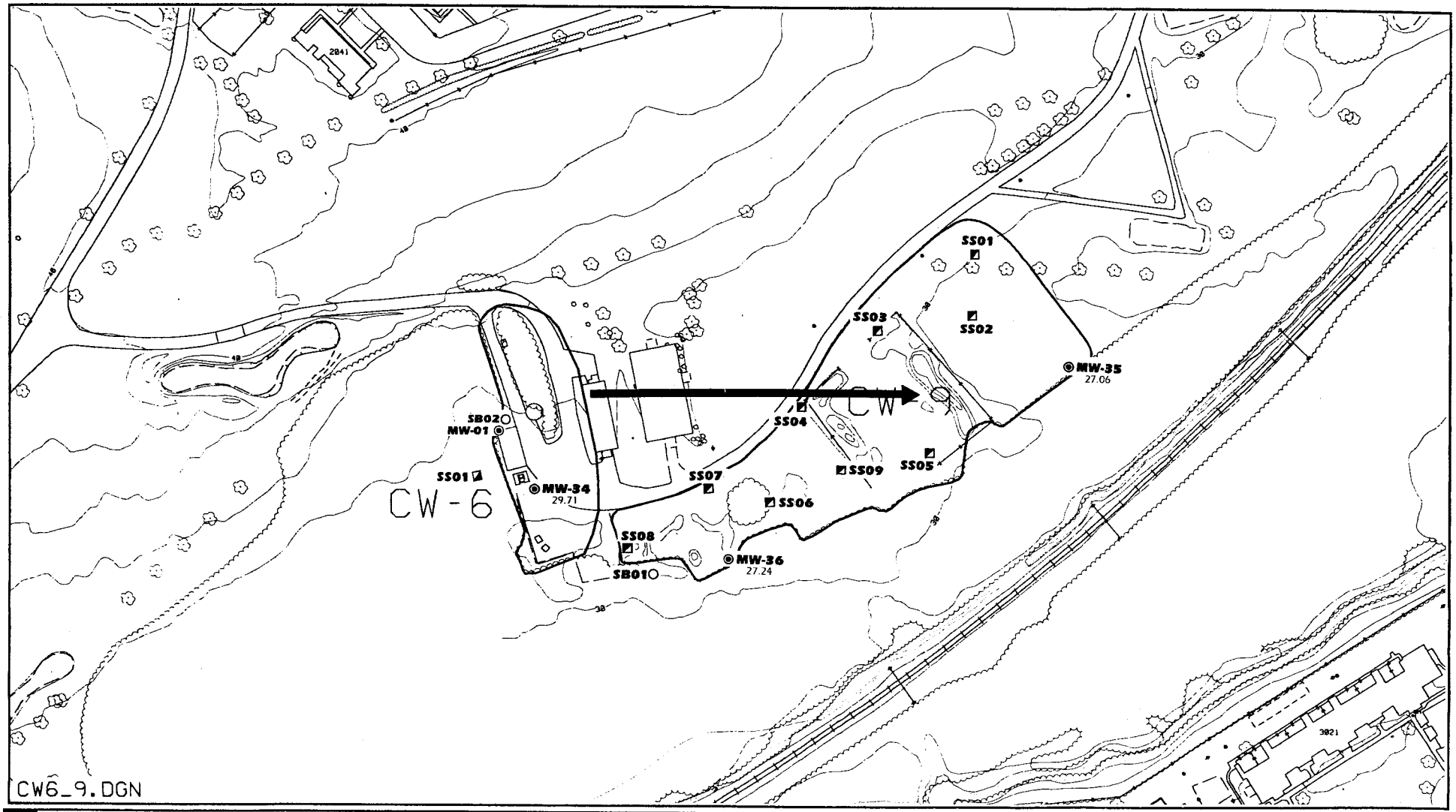
DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further

evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



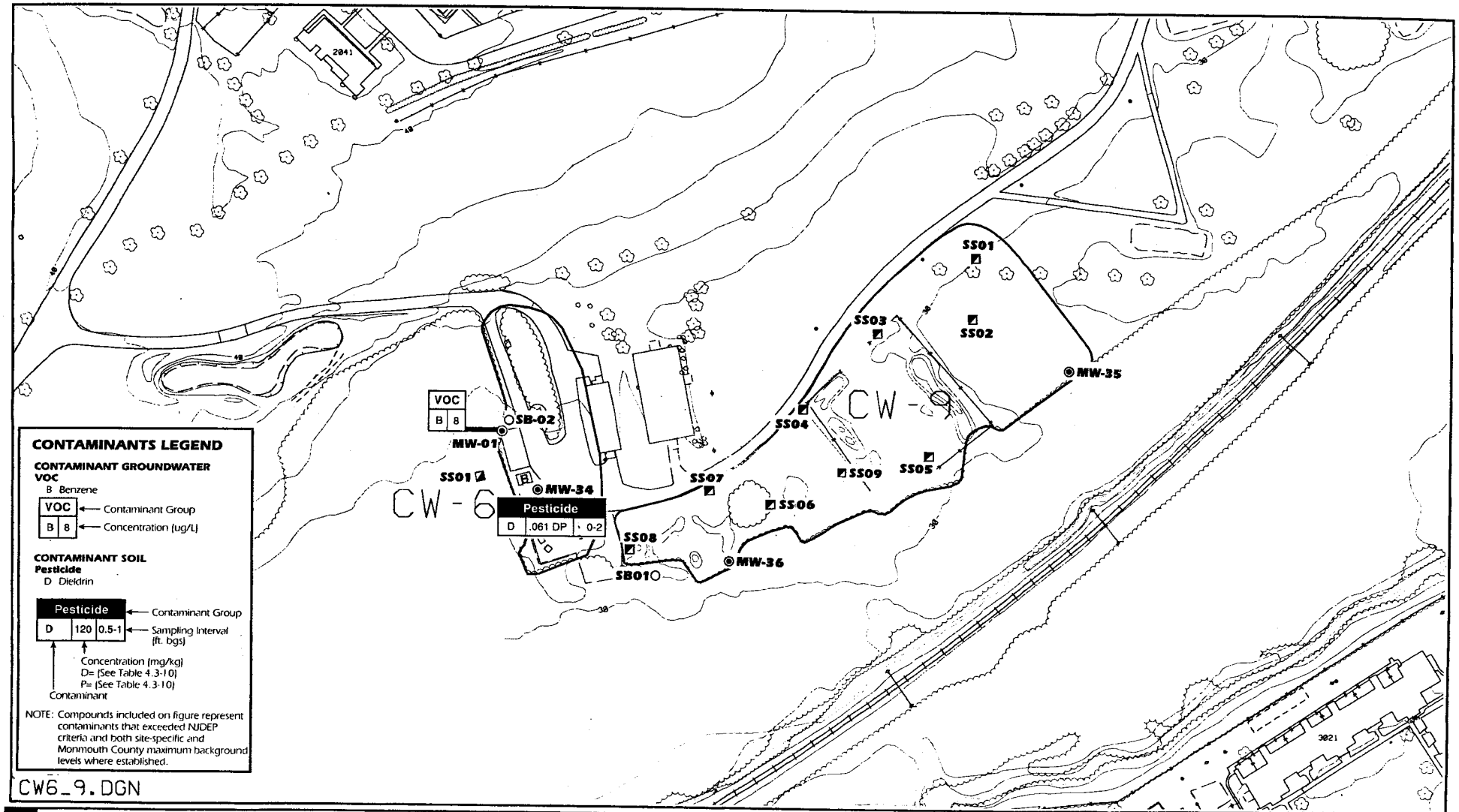
Fort Monmouth, Charles Wood

FIGURE 4.3-13
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-14
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)


2041
3021
CW-6
CW-9
SB-02
MW-01
MW-34
MW-35
MW-36
SB01
SS01
SS02
SS03
SS04
SS05
SS06
SS07
SS08
SS09
VOC
B 8
Pesticide
D .061 DP 0-2
CONTAMINANTS LEGEND
CONTAMINANT GROUNDWATER
VOC
B Benzene
VOC
B 8
Contaminant Group
Concentration (ug/L)
CONTAMINANT SOIL
Pesticide
D Dieldrin
Pesticide
D 120 0.5-1
Contaminant Group
Sampling Interval (ft. bgs)
Concentration (mg/kg)
D= (See Table 4.3-10)
P= (See Table 4.3-10)
Contaminant
NOTE: Compounds included on figure represent contaminants that exceeded NJDEP criteria and both site-specific and Monmouth County maximum background levels where established.
CW6_9.DGN
LEGEND
Soil Boring
Monitor Well
Surface Soil Sampling Location
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P:3187
6/23/95
Fort Monmouth, Charles Wood
FIGURE 4.3-15
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL

Site CW-9

4.3.9 Sludge Dump (CW-9)

4.3.9.1 Site Location

The sludge dump (CW-9) as identified in the IA is located in the southern part of Charles Wood, south and southeast of Building 2070 and west of green 11 and tee 12 of the golf course (Figure 4.3-13). The approximate area of site CW-9 is 79,933 ft^2 (1.8 acres).

4.3.9.2 Site History

Since the 1940s, sludge generated at the STPs has been stored in this area before being used as a soil conditioner and fertilizer on the golf course. Sludge piles are visible in the 1957, 1961, 1974, and 1981 aerial photographs. During the 1993 site visit, a pile of sludge removed from fairway 1 on the golf course was observed south of Building 2070. According to long-term Fort Monmouth employees, at least three other fairways (8, 10, and 11) have 4 to 5 inches of sludge over the native sand; sludge may have been used to fill in low areas.

4.3.9.3 Sampling Effort

Two monitor wells were installed (MW-35 and MW-36), one soil sample from soil boring SB-01 and nine from surface soil locations SS-01 through SS-09 were collected, and two rounds of groundwater sampling were conducted in an effort to evaluate the impact of past site activities on soil and groundwater quality. Monitor wells MW-35 and MW-36 and soil boring SB-01 were analyzed for TCL +30 parameters and TAL metals. Surface soil locations SS-01 through SS-09 were analyzed for TAL metals only. The sampling locations are presented in Figure 4.3-13. MW-35 was relocated from site CW-6 because an existing monitor well was located at the proposed well location. The monitor well (MW-35) was then relocated to a downgradient location at CW-9 to monitor groundwater quality downgradient of the area under investigation.

4.3.9.4 Hydrogeologic Interpretation

Lithologic logs from MW-35 and MW-36 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by an orange-olive-brown predominantly medium-grained quartz sand with silt laminae. Saturation was observed at 4 ft bgs. Monitor wells were screened across the water table, with total depths of 14.5 and 14 ft bgs in MW-35 and MW-36, respectively. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that the local groundwater flow direction is east (Figure 4.3-14). Based on groundwater elevation measurements, monitor wells MW-35 and MW-36 are downgradient of the area under investigation.

4.3.9.5 Soil Sampling Results

One soil sample was collected from the 2- to 4-ft bgs sampling interval in a boring installed to a depth of 6 ft bgs. One sample from each surface soil location was collected from the 0- to 0.5-ft bgs interval. The soil samples collected were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soil are listed in Appendix D. Tables 4.3-12 and 4.3-13 compare the compounds detected with the NJDEP SCC, and then compare the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Table 4.3-12
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Soil from Boring Location SB-01
Site CW-9

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SB01-A02 1/4/95 (2-4 ft bgs)
SVOCs (mg/kg)				
Di-n-butylphthalate	0.215	5700	ND	0.076
PESTICIDES (mg/kg)				
4,4'-DDE	0.0037	2	0.071	0.0076 P
4,4'-DDT	0.0037	2	0.053	0.008 P
METALS TOTAL (mg/kg)				
Aluminum	3.9	NLE	15700	3830
Arsenic	0.35	20	31.6	2.6
Barium	0.17	700	26	6.6
Beryllium	0.1	1	1.7	0.39
Calcium	2.2	NLE	653	366
Cobalt	0.71	NLE	4.5	1
Chromium	1.6	500	128	44
Copper	2.2	600	7.27[1]	2.3
Iron	0.58	NLE	45500	9720
Lead	0.4	400[2]	15.1[1]	3.9
Magnesium	9.6	NLE	3960	698
Manganese	0.18	NLE	120[1]	11.9
Mercury	0.49	14	ND	0.12
Nickel	1.4	250	8.3	2.8
Potassium	(12.3-25.8)	NLE	10600	1480
Sodium	3.8	NLE	56.8	21.4
Vanadium	0.53	370	59.6	27.4
Zinc	0.41	1500	55.6	12.8

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Compound was not detected at or below the quantification limits
NLE - No Level Established
P- the percent difference between the results from the two GC columns is greater than 25%, the lower of the two values is reported
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Table 4.3-13
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Soil from Surface Locations
Site CW-9

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS 11/30/94								
				SS01-A01	SS02-A01	SS03-A01	SS04-A01	SS05-A01	SS06-A01	SS07-A01	SS08-A01	SS09-A01
METALS TOTAL (mg/kg) Sample Interval :0"-6" ft bgs												
Aluminum	3.9	NLE	15700	7350	5730	3600	4380	6930	5450	3910	4070	7700
Arsenic	0.35	20	31.6	13.6	12.1	6.9	6.3	15.6	9.3	10.5	7.2	7.7
Barium	0.17	700	26	23.4	28.9	65.4	51.2	32.5	33	40.7	19.2	40.8
Beryllium	0.1	1	1.7	0.73	0.68	0.57	0.55	0.9	0.72	0.58	0.56	1
Calcium	2.2	NLE	653	2680	2650	1960	19600	3570	3610	4370	1630	3440
Cadmium	0.86	1	0.135[1]	ND	ND	ND	ND	ND	ND	**2.6**	ND	ND
Cobalt	0.71	NLE	4.5	ND	ND	ND	1.3	1.9	1.7	ND	ND	1.8
Chromium	1.6	500	128	56.7	57.2	24.9	28.3	60.5	46.9	164	56.2	70
Copper	2.2	600	7.27[1]	9.6	10.3	5	17.7	8.8	11.1	17.4	9	9.6
Iron	0.58	NLE	45500	20600	18200	10800	12200	22200	17900	9880	11300	25600
Lead	0.49	400[2]	15.1[1]	19.9	30.1	13.5	56.8	27.4	17	82.3	35.5	20.1
Magnesium	9.6	NLE	3960	1910	2010	815	2260	2280	1720	1620	893	2590
Manganese	0.18	NLE	120[1]	85.1	46.8	22.3	106	59.2	56	140	37	69.5
Mercury	0.49	14	ND	0.2	0.23	ND	ND	0.14	ND	7.9	0.69	ND
Nickel	1.4	250	8.3	6	3.3	ND	5.7	6.9	4.9	4.3	2.4	5.8
Potassium	(12.3-25.8)	NLE	10600	1600	2620	1460	2060	3950	3180	1720	1250	5130
Silver	0.54	110	0.26[1]	2.5	2.8	ND	ND	0.77	0.71	1.2	3.3	1.3
Sodium	3.8	NLE	56.8	35.6	33.9	77.4	118	49.7	49.7	40.6	34.5	60.9
Selenium	0.30	63	0.85	0.56	0.62	0.75	0.28	0.63	0.41	0.57	0.6	0.48
Vanadium	0.53	370	59.6	45.7	34	15.7	22.9	33.1	30.3	15.6	29.3	32
Zinc	0.41	1500	55.6	53.7	61.2	25.8	92.5	47.8	62.3	77	36	48.1

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Compound was not detected at or below the quantitation limits
NLE - No Level Established
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.
Note: Metals detected in a duplicate sample from SS-01 were detected below the NJDEP SCC.

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected above laboratory quantitation limits in SB-01. Both compounds were detected well below their respective SCCs. PCBs were not detected in site soil.

Metals

As indicated in Tables 4.3-12 and 4.3-13, of the 21 metals detected in site soil, only beryllium and cadmium were found in concentrations equal to or greater than the NJDEP SCC. In addition, cadmium was detected in SS-07 at a concentration (Table 4.3-13) greater than the site-specific and Monmouth County maximum background levels established at Charles Wood. However, in accordance with NJDEP *Cleanup Standards for Contaminated Sites* (NJDEP, 1992), the concentration of cadmium at sites CW-06 and CW-09 were averaged and then compared to the NJDEP SCC and established background. The average concentration of cadmium was found to be equal to the SCC when compared with the soil sampling results in the area. Cadmium was not considered to be of a high concentration (see "Metals" in Subsection 4.3.8.5). Cadmium was not detected at any other surface soil location. Although beryllium was found in a concentration greater than the Monmouth County maximum background level, beryllium was detected in a concentration below the site-specific level. Beryllium was found at only one location (SS-09) at a concentration equal to the NJDEP SCC. The concentration of beryllium was also averaged and when compared to the NJDEP SCC, was found at a concentration below the NJDEP SCC and maximum background.

4.3.9.6 Groundwater Sampling Results

Monitor wells at site CW-9 were sampled for the analytical parameters listed in Table 3.8-1. Table 4.3-14 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

Table 4.3-14
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-9

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW35 2/20/95, 3/13/95 (avg.)	MW36 2/20/95, 3/13/95 (avg.)
SVOCs (µg/L)					
bis-(2ethylhexyl)phthalate	9.7	30*	600	ND	4 J
METALS TOTAL (µg/L)					
Aluminum	24	200	8210	**226**	**575**
Barium	1.7	2000	400[1]	37.25	31.3
Beryllium	0.9	20*	2.8	0.175	ND
Calcium	10.4	NLE	8700	23400	35050
Cobalt	2.3	NLE	30.6	2.45	2.85
Chromium	2.9	100	49.6	ND	5.7
Iron	6.4	300	27000[1]	104.2	**1250**
Lead	1.1	10*	<100[1]	ND	2
Magnesium	18.3	NLE	25000[1]	5875	7835
Manganese	1.8	50	480[1]	40.1	**217**
Nickel	10.8	100	48.3	5.65	5.65
Potassium	685	NLE	10000[1]	2035	4000
Sodium	30.5	50000	197000[1]	4480	5900
Vanadium	2.3	NLE	28.9	ND	3.85
Zinc	3.8	5000	133	26.75	27

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected

J - Indicates that the concentration value was estimated due to detection at or near the detection limits

[1] - Monmouth County maximum background concentration.

VOCs

VOCs were not detected in site monitor wells from either sampling round.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site monitor wells from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-14, of the 15 metals detected in site groundwater, only 3 (aluminum, iron, and magnesium) were found in concentrations exceeding the NJDEP GWQC; however, all three metals were detected in concentrations below the site-specific and Monmouth County maximum background levels.

4.3.9.7 Recommendations

The average concentrations of cadmium and beryllium in surface soil samples at CW-6 and CW-9 do not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. No compounds of concern were detected in site groundwater above NJDEP criteria.

No further action will be taken.

Site AOC-7

4.3.10 Former Hazardous Waste Storage Area (AOC-7)

4.3.10.1 Site Location

NJDEP identified this site as an area of concern (AOC) (NJDEP, 1990). A temporary hazardous waste storage area was located in an approximately 1-acre fenced site to the east of Building 2708 (Figure 4.3-16). The site is currently a grassy field surrounded by a 7-ft high fence. A former gas station (Building T-2500) is located to the east of the site. The approximate area of site AOC-7 is 41,000 ft^2 (0.9 acre).

4.3.10.2 Site History

Reviews of aerial photographs from 1961 to 1986 show that this site was a fenced storage area. The 1961 photographs show that the fenced area extended about 50 feet farther to the west than it does today. This western area is now part of the fenced area around Building 2708, which is part of the Pulse Power Laboratory. Large rectangular objects are visible next to the fence on all four sides. These may be cargo or truck vans. The 1969 photograph is similar, but there are three irregular groups of objects at the northwest corner of the lot. The 1974 photograph is similar, except there are five circular igloos along the west fence. In 1986, the site is smaller because the Pulse Power Laboratory is in the western portion of the site. There are objects that appear to be drums along the fence on the south and southeast of the site. The objects are densely packed in a 10- to 20-ft band next to the fence. There are additional objects along the north fence and possibly along the west fence. Personnel interviews indicate that the site was used for a 6-month period in 1987 for temporary storage of hazardous waste (in drums). As part of a program to remove all improperly labeled drums from Fort Monmouth, the facility collected the drums and staged them at this site.

The drums were stored on wood pallets, generally along the fence line. The pallets were not usually stored on a plastic ground cover. Clean Venture, Inc. sampled the drums, labeled them, completed manifests, and arranged for disposal. For the most part, the drums contained solvents, degreasers, and oils. The drums were screened for external radiation and none was detected. Clean Venture did not characterize the drums to the extent of identifying specific compounds,

but some of the solvents that were used at Fort Monmouth at that time are 1,1,2-trichloroethane, 1,1,1-trichloroethane, and benzene.

The only known release of material during the operation occurred on 7 October 1987. A pallet of 5-gallon containers of malathion, a pesticide, was picked up at Sandy Hook. The containers were deteriorated, so the pallet was placed on a plastic ground cover. During the night, the top popped off one of the containers. A security guard became temporarily nauseated from the fumes. The next day the containers were repacked in a drum. The quantity of material that was released is considered small, and it is believed that little, if any, material was spilled on the ground.

4.3.10.3 Sampling Effort

Six soil borings were completed and soil samples collected in an effort to identify the nature and extent of past site activities on soil quality. Soil borings were drilled to groundwater and the soil cuttings were screened with a photoionization detector (PID). Since no elevated PID readings were recorded, soil samples were collected from the interval just above the water table. The total depths of the borings varied from 12 to 14 ft bgs. Lithologic logs from the site borings indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by coarsening downward olive-brown silty medium-grained sand to olive-brown medium-grained sand sequence. The locations of the soil borings were biased toward the fence line, as shown in Figure 4.3-16, because an examination of aerial photographs showed that materials were stored next to the fence. Soil samples were analyzed for TCL +30 parameters and TAL metals.

4.3.10.4 Soil Sampling Results

Six soil samples, one from each boring, were collected from intervals ranging from 8 to 14 ft bgs. Site soil samples were analyzed for the parameters listed in Table 3.6-1. Table 4.3-15 compares the detected compounds in site soil with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background levels, where

Table 4.3-15
Fort Monmouth - Charles Wood
Summary of Detected Compounds in
Soil from Site AOC- 7 (CW-7)

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A02 12/21/95 (10-12 ft bgs)	SB02-A02 12/21/95 (10-12 ft bgs)	SB03-A02 12/21/95 (6-8 ft bgs)	SB04-A02 12/21/95 (8-10 ft bgs)	SB05-A02 12/21/95 (8-10 ft bgs)	SB06-A03 12/21/95 (12-14 ft bgs)
VOC's (mg/kg)									
2 - Butanone	0.0041	1000	ND	ND	0.002 J	ND	ND	ND	ND
SVOCs (mg/kg)									
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.075 J	ND	0.34 J	ND	ND	ND
PESTICIDES (mg/kg)									
4,4'-DDT	0.0037	2	0.053	ND	ND	0.004	ND	ND	ND
METALS TOTAL (mg/kg)									
Aluminum	3.9	NLE	15700	3650	4340	3820	5170	3490	3610
Arsenic	0.35	20	31.6	8.6	1.7	8.4	12.7	2.8	5.9
Barium	0.17	700	26	2.5	4.5	4.5	6.2	3.6	2.4
Beryllium	0.1	1	1.7	0.31	0.29	0.28	0.45	0.3	0.26
Calcium	2.2	NLE	653	69	91.9	134	275	63.9	43.7
Cobalt	0.7	NLE	4.5	ND	0.94	0.68	ND	ND	ND
Chromium	1.6	500	128	61.1	61.6	73.6	83.4	64.7	61.1
Copper	2.2	600	7.27[1]	1.6	1.6	1.8	2.2	1.4	1.3
Iron	0.58	NLE	45500	10800	12400	11100	15900	11400	11000
Lead	0.4	400[2]	15.1[1]	6.3	6.9	4.5	8.5	6.3	4.9
Magnesium	9.6	NLE	3960	694	852	602	919	720	766
Manganese	0.18	NLE	120[1]	3.6	8.2	12.7	11.3	2.8	1.8
Nickel	1.4	250	8.3	1.8	2.6	1.9	2.1	1.6	1.3
Potassium	(12.3-25.8)	NLE	10600	2060	2360	1740	2570	2200	2280
Sodium	3.8	NLE	56.8	18.8	12	11.7	13.8	14.7	11.5
Selenium	0.3	63	0.85	0.26	0.2	ND	0.3	0.26	ND
Zinc	0.41	1500	55.6	8.9	12	10.5	15.8	9	9.1

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

appropriate. In addition, the results were compared with the impact to groundwater SCC because no monitor wells were installed at the site.

VOCs

VOCs were not detected above laboratory quantitation limits in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Pesticides/PCBs

One pesticide (4,4'-DDT) was detected above the laboratory quantitation limit in SB-02; however, 4,4'-DDT was detected in a concentration well below both the NJDEP residential direct contact SCCs and impact to groundwater SCC. PCBs were not detected in site soil from any boring location.

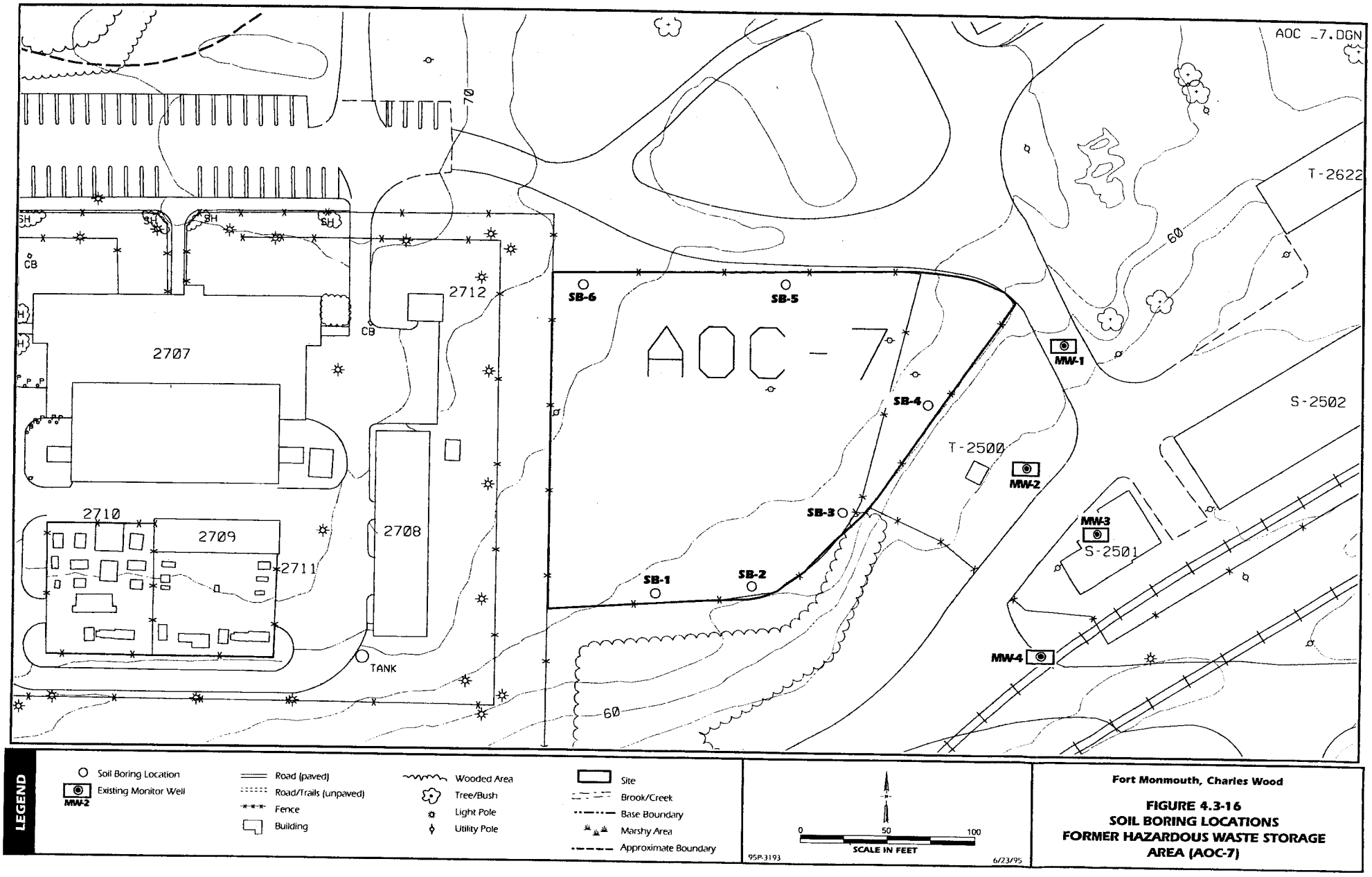
Metals

As indicated in Table 4.3-15, all metals detected in site soil were found in concentrations below the NJDEP SCC.

4.3.10.5 Recommendations

No compounds of concern were detected at this site at levels that exceeded NJDEP criteria.

No further action will be taken.


AOC _7.DGN
AOC - 7
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
MW-1
MW-2
MW-3
MW-4
2707
2708
2709
2710
2711
2712
T-2500
T-2622
S-2501
S-2502
TANK
CB
SH
70
60
LEGEND
Soil Boring Location
Existing Monitor Well
MW-2
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
50
100
SCALE IN FEET
95P-3193
6/23/95
Fort Monmouth, Charles Wood
FIGURE 4.3-16
SOIL BORING LOCATIONS
FORMER HAZARDOUS WASTE STORAGE
AREA (AOC-7)

Charles Wood
PCB Transformers

4.3.11 PCB Transformers

4.3.11.1 Site Location

During the 1993 investigation (WESTON, 1993), all locations where PCB transformers had formerly been located were inspected for evidence of spills. Three sites were identified where a PCB transformer was either formerly located over soil and thus evidence of a spill could not be determined visually, or formerly located on concrete and there was discoloration in the concrete. These locations are listed in Table 3.5-1 and identified in Figure 4.3-17.

4.3.11.2 Site History

All PCB transformers (contain greater than 500 ppm PCBs) have been removed from Fort Monmouth; however, the former locations of these transformers were not previously investigated for spilled PCBs. The concrete pad outside Building 2000 was removed between the time of the 1993 investigation and the current field effort.

4.3.11.3 Sampling Effort

As discussed in Subsection 3.5, soil samples were taken from below pole-mounted transformers. Because the concrete pad near Building 2000 had been removed, four soil samples were taken downgradient of the former pad location, as indicated in Figure 4.3-18.

4.3.11.4 PCB Sampling Results

The results of the PCB transformer sampling are presented in Table 4.3-16. One of the four transformer sites sampled at the Charles Wood area was found to have PCBs in soil or concrete above NJDEP SCC.

PCBs were detected in four discrete soil samples above NJDEP SCC. The soil samples were collected downslope of the former location of transformer CW035, which was an exterior pad transformer northeast of Building 2000. This pad had been removed prior to sampling.

Table 4.3-16
Results of Transformer Site Sampling on Charles Wood

Location (Building No.)	Sample ID	Method Detection Limt (mg/kg)	Medium	NJDEP Soil Criteria (mg/kg)	Total PCBs (mg/kg)
2000	CW07-TR01	23*	Soil	0.49	**100**
2000	CW07-TR02	4.4*	Soil	0.49	**27**
2000	CW07-TR03	4.4*	Soil	0.49	**26**
2000	CW07-TR04	.91*	Soil	0.49	**6**
2018	CW07-TR05	4.5*	Soil	0.49	ND
2018	CW07-TR06	0.47	Soil	0.49	ND
2276	CWAE-TR01	0.21	Soil	0.49	ND

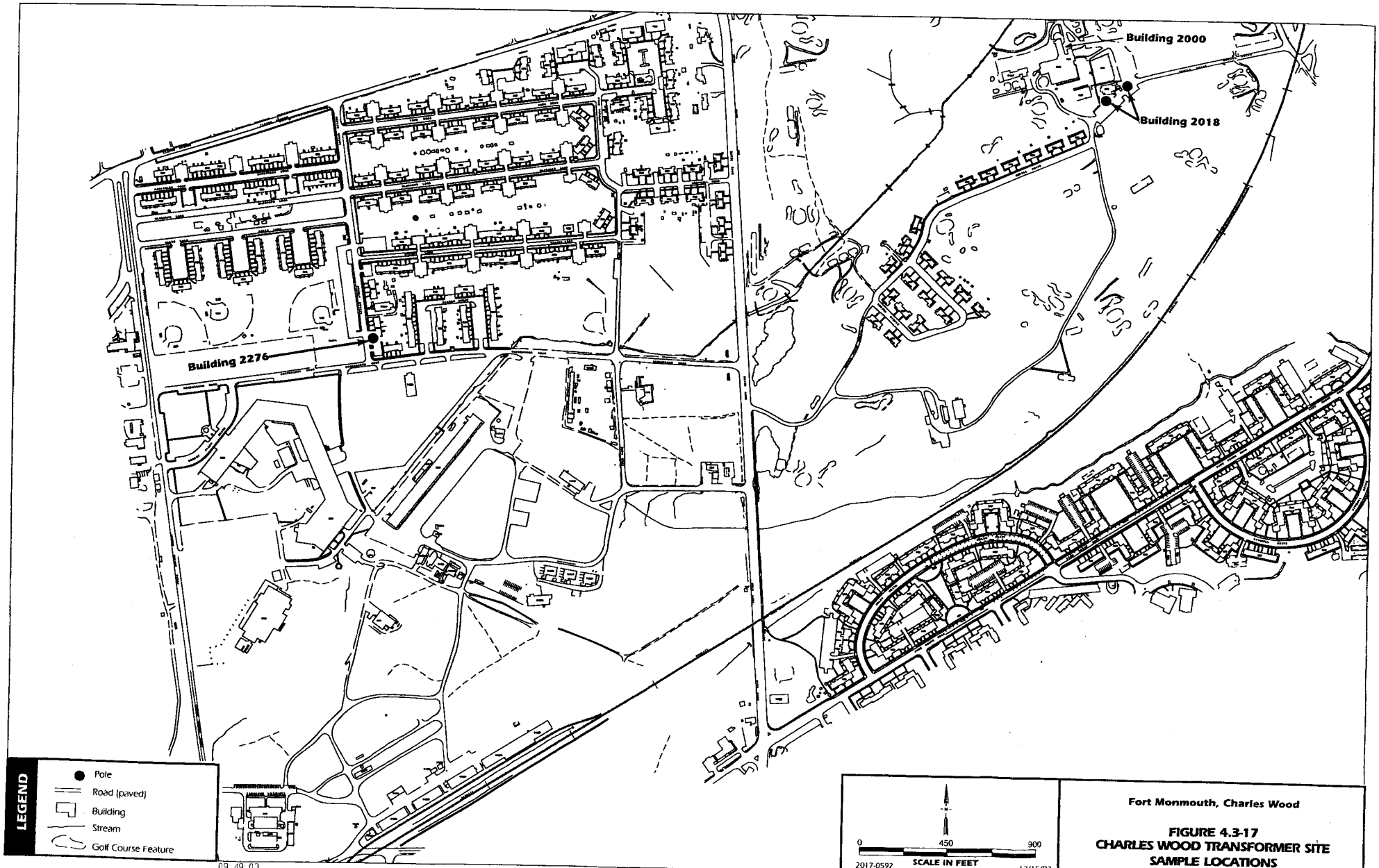
Compounds exceeding NJDEP cleanup criteria are noted by bold numbers
ND - Indicates that the compound was not detected at the quantification limit.
* = Method Detection Limit exceeded NJDEP criteria.

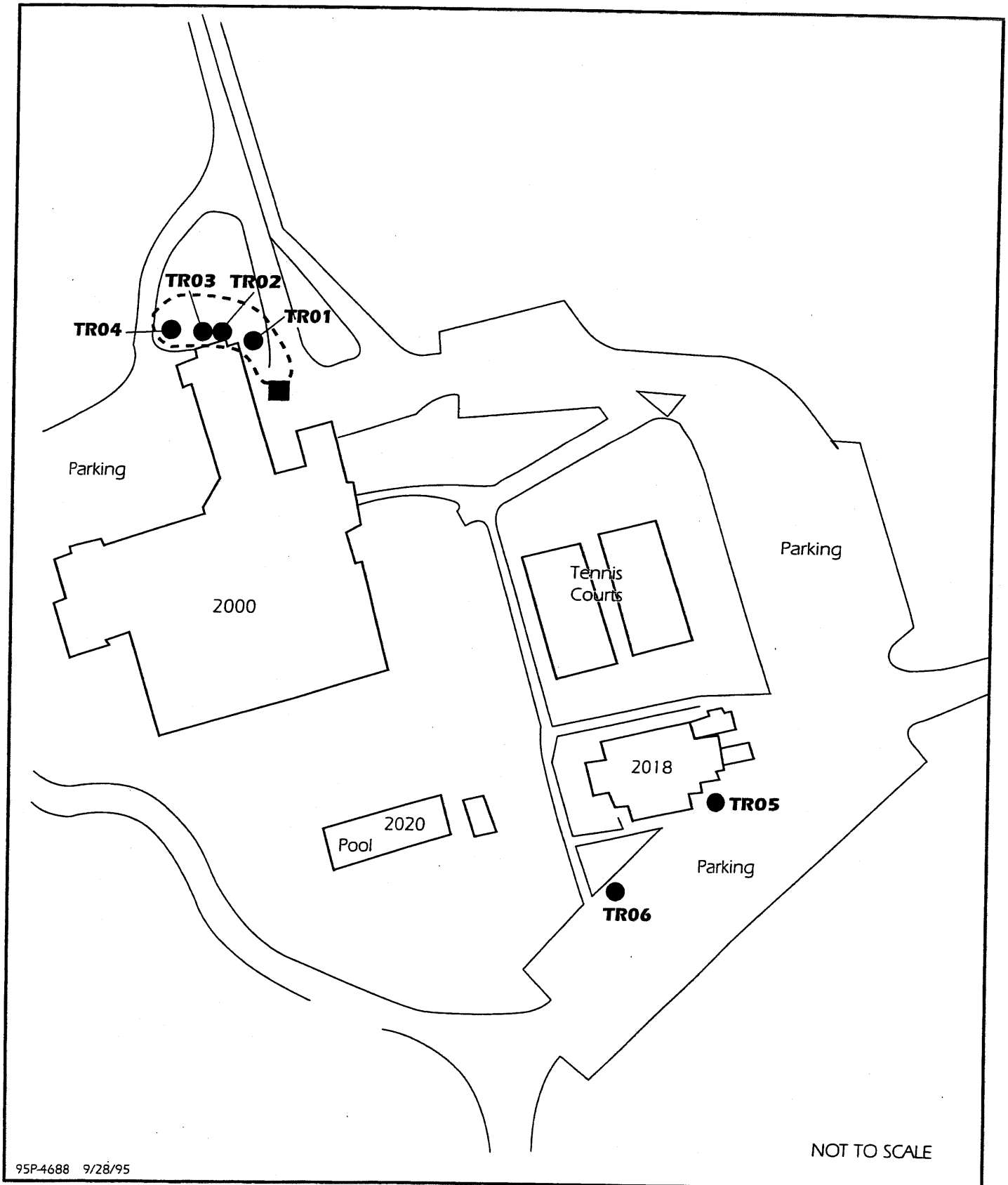
All other transformers sampled in the Charles Wood area either had results below detection limits, or had detectable levels of PCBs below applicable cleanup criteria.

4.3.11.5 Recommendations

PCBs were detected above the NJDEP criteria in each of the four soil samples collected downgradient of the former transformer location northeast of Building 2000 (transformer CW-035). PCBs were not detected above NJDEP criteria in samples collected from the other three sampling locations.

Additional samples will be taken to further delineate the extent of contamination and the contaminated soil will be removed and disposed of in accordance with applicable regulations. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved.


Building 2000
Building 2018
Building 2276
LEGEND
Pole
Road (paved)
Building
Stream
Golf Course Feature
09:49:03
0
450
900
SCALE IN FEET
2017-0592
12/15/93
Fort Monmouth, Charles Wood
FIGURE 4.3-17
CHARLES WOOD TRANSFORMER SITE
SAMPLE LOCATIONS



LEGEND

- Sampling Location
- Former Transformer Pad
- Soil Remediation Boundary

Fort Monmouth, Charles Wood

FIGURE 4.3-18
EXTENT OF REMEDIATION AT TRANSFORMER SITE – BUILDING 2000

SECTION 5
DATA QUALITY

SECTION 5

DATA QUALITY

5.1 INTRODUCTION

Quality assurance/quality control (QA/QC) procedures were incorporated into the Fort Monmouth site investigation program to ensure collection of quality data for each area of the site investigated. Additionally, such QA/QC procedures were employed to ensure that all information, data, and resulting decisions of the site investigation are technically sound, statistically valid (accurate and precise), properly documented, and ensure the completeness of the data. The mechanism for employing the project QA/QC procedures was the CDAP. Procedures in the CDAP facilitated identifying and monitoring the proper sample collection, handling, and laboratory protocols to be used during the site investigation.

Chemical analyses were conducted to determine the type and concentration of contaminants present in the various media at the site and to provide environmental data, as was discussed in Section 2 of this report. Overall, analyses or tests were chosen based on the compounds produced or used within the specific area or the environmental data needed.

The analytical methods that were used for sample analysis are listed in Table 5.1-1. Information on sample containers, preservation, and holding times is presented in Table 5.1-2.

All analytical work completed for the site investigation was performed or administered by WESTON's Environmental Metrics Division. WESTON's Gulf Coast Laboratory, located in University Park, IL, performed all analytical analyses. This laboratory is certified by NJDEP (certification number 54669).

Table 5.1-1

Analytical Methods for Sample Analysis

Matrix	Parameter*
Sediment	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals Cyanide
Surface Water	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals (Filtered) TAL Metals (Unfiltered) Cyanide
Soil	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TCL Pesticides PCBs (SW 8080) TAL Metals Cyanide TPH (EPA 418.1)
Concrete	PCBs (SW 8080)
Groundwater	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals (Unfiltered) TAL Metals (Filtered) Cyanide TPH (EPA 418.1) Sulfate (EPA 375.4) Ammonia (EPA 350.2)

* All analytical methods derived from *Test Methods for Evaluation of Solid Waste,* SW-846, Third Edition, 1992; EPA CLP Document Nos. OLM01.8 and ILM02.1; "Methods for Chemical Analysis of Water and Waste," EPA 600/4-79-020.

Table 5.1-2

Summary of Sample Containers, Volume, Preservation, and Maximum Holding Times

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time
Nonaqueous				
Cyanide	Flint glass bottle, black phenolic cap, polyethylene liner	4, 8, 16, or 32 oz	4°C until analysis	12 days
Metals	Flint glass bottle, black phenolic cap, polyethylene liner	4, 8, 16, or 32 oz	4°C until analysis	180 days except for Hg, which is 26 days
Pesticides/PCBs	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction must be started within 14 days. Analysis - 40 days from VTSR.
Semivolatile Organics	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction must be started within 14 days. Analysis - 40 days from VTSR.
Sulfates	Plastic, glass	100 mL	Cool, 4°C	28 days
TPH	Glass	4 oz	Cool, 4°C	28 days; gasoline in soil, 7 days
Volatile Organics	Glass, polypropylene cap, white teflon liner	120 mL	Cool, 4°C	10 days
Aqueous				
Cyanide	Plastic bottle, plastic cap, plastic liner	1,000 mL	0.6 g ascorbic acid if residual Cl_2, NaOH to pH>12, cool, 4°C until analysis. $CaCO_3$ in presence of sulfide.	12 days
Metals	Plastic bottle, plastic cap, plastic liner	1,000 mL	HNO_3 to pH<2	180 days
Pesticide/PCBs	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction aqueous continuous liquid-liquid extraction must be started within 7 days. Analysis - 40 days from VTSR.

Table 5.1-2
Summary of Sample Containers, Volume, Preservation, and Maximum Holding Time
(Continued)

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time
Semivolatile Organics	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction aqueous continuous liquid-liquid extraction must be started within 7 days. Analysis - 40 days from VTSR.
Sulfates	Plastic, glass	100 mL	Cool, 4°C	28 days
TPH	Glass	1 liter	Cool, 4°C	7 days
Volatile Organics	Glass, black phenolic plastic screw cap, Teflon-lined septum	40 mL	Cool, 4°C, dark, 0.08% $Na_2S_2O_3$ if residual Cl_2	10 days

TPH - Total Petroleum Hydrocarbons
VTSR - Validated time of sample receipt (at the laboratory)

5.2 QUALITY CONTROL PROCEDURES

To meet the QA/QC objectives of the project, the field work and laboratory analyses followed the standardized methods or procedures that were described in the CDAP and are summarized in the subsections that follow.

5.2.1 Field and Laboratory Quality Control Samples

Standard analytical QC checks instituted by field and laboratory personnel included (but were not limited to):

- Field/rinsate blanks — Samples prepared using analyte-free water supplied by the laboratory or purchased from commercial sources that certify the quality of the water. Field/rinsate blanks were routed through decontaminated sampling equipment prior to collection. Preservatives or additives were added as required, and the blank sample was then sealed. The field/rinsate blank was shipped with real samples collected for the same parameter group. During field sampling, a field/rinsate blank was collected and analyzed from each group of water or soil/solid samples for every 10 samples received daily.

- Trip blanks — Volatile organic sample containers prepared in the laboratory using analyte-free water. The trip blanks accompanied the field samples during transport to the site; during collection, packaging, and transport to the laboratory; and during analysis, and were contained in the same type of sample container as those used in the specific sampling effort. One trip blank sample was included with each shipment of aqueous samples designated for VOC analysis.

- Duplicate samples — Samples collected from the same sampling location at the same time. Soil duplicates were homogenized (with the exception of VOC samples). At least one duplicate sample was analyzed from each group of samples of a similar matrix type for every 20 samples received.

- Matrix spike/matrix spike duplicate (MS/MSD) — Samples in which compounds are added before extraction and analysis. The recoveries for spiked compounds can be used to assess how well the method used for analysis recovers target compounds (i.e., a measure of matrix interference in the sample). When reviewed in conjunction with other QC data, MS/MSDs may indicate reanalysis using a more appropriate method. At least one spiked sample analysis was performed on each group of samples of a similar matrix type and concentration for each batch of samples or for every 20 samples received, whichever was more frequent.

- Surrogate spiking — Samples in which surrogate compounds are added before sample preparation for organics analysis. The review for spiked surrogate compounds can be used to assess method accuracy for each sample matrix.

5.2.2 Field Activities

The accuracy of field measurements obtained from site instruments was maintained on-site by appropriate calibration procedures, as described in detail in the CDAP.

The field investigation procedures used to perform the site investigation were presented in the Fort Monmouth CDAP. The field procedures included:

- Surface and subsurface soil sampling.
- Installation of monitor wells.
- Groundwater sampling.
- Monitor well casing elevation surveying.
- Surface-water and sediment sampling.
- Concrete pad sampling.
- Ancillary field activities, such as decontamination, field measurements, and fluids management.

Sample identification and documentation procedures were followed in the field as specified in the CDAP, including:

- Sample containers were labeled with the appropriate information.
- The sample was entered into the chain-of-custody record.
- A unique sample code was assigned to each sample collected.
- Signed custody seals were applied on opposite sides of the container lid.
- Samples were shipped to WESTON's laboratories as environmental samples and complied with all DOT requirements for such shipment.

A bound field notebook was maintained by the Field Team Leader at the site to record daily activities, including sample collection and tracking information. Quantitative field data, such as water-level measurements, were recorded in bound field notebooks. Qualitative or descriptive field data (such as soil textures) obtained from soil borings and monitor wells were recorded in the field in field notebooks, reduced using a standardized lithologic coding system.

5.2.3 Laboratory Activities

5.2.3.1 Laboratory Equipment Quality Control

The reliability and credibility of laboratory analytical instruments and QA of analytical results were ensured by documented calibration procedures and QC samples (such as method blanks and method spikes). A review of the calibration procedures and the calibration frequencies that are standard operating procedures (SOPs) employed by WESTON's Environmental Metrics Division is provided in the CDAP. The following instruments were used to analyze environmental samples:

- Gas chromatograph (GC).
- Gas chromatograph/mass spectrometer (GC/MS).
- Atomic absorption spectrophotometer: furnace (AA).
- Inductively coupled plasma spectrometer (ICP).
- Cold vapor mercury analyzer: flameless AA.
- Spectrophotometer.

Certain TCL VOCs, such as methylene chloride, acetone, 2-butanone, and toluene, are commonly detected as laboratory contaminants. In order to ensure that the data reported are not biased by potential laboratory contamination, certain QA procedures, including reagent blank analysis, were taken. Assessment of the reagent blanks is discussed in Subsection 5.3.2.

5.2.3.2 Laboratory Data

In addition to the data collected in the field and recorded on the chain-of-custody forms, data describing the processing of samples were accumulated in the laboratory and recorded in laboratory notebooks.

Data reduction was performed by the individual analysts and consisted of calculating concentrations in samples from the raw data obtained from the measuring instruments. The complexity of the data reduction was dependent on the specific analytical method and the number of discrete operations (e.g., extractions, dilutions, and concentrations) involved in obtaining a sample that could be measured.

System reviews were performed at all levels. The individual analyst constantly reviewed the quality of data through calibration checks, QC sample results, and performance evaluation (PE) samples. The Section Manager and/or the Analytical Project Manager reviewed data for consistency and reasonableness with other generated data and to determine if program requirements had been satisfied. Selected hard copy output of data (e.g., chromatograms, spectra, etc.) was reviewed to ensure that results were interpreted correctly. The Quality Assurance Officer independently conducted a review of selected projects to determine if laboratory and client QA/QC requirements had been met. The final routine review was performed by the Laboratory Manager prior to reporting the results to the client.

5.3 DATA QUALITY

5.3.1 Data Reporting

Laboratory reports contain final results, methods of analysis, levels of detection, surrogate recovery data, and method blank data. In addition, special analytical problems and/or any modifications of referenced methods were noted.

5.3.2 Data Validation/Usability Review

Separate from the laboratory's internal data review/data validation, an independent review of the final analytical data packages was performed to validate results and to determine usability. The validation was performed by URS Consultants, Inc. (URS) as a subcontractor to Malcolm Pirnie, Inc.

The data validation was performed in accordance with U.S. Environmental Protection Agency (EPA) *Region II Modifications to the National Functional Guidelines for Organic Data Review, Multimedia, Multiconcentration* (January 1992) and *Region II Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis* (January 1992). For non-CLP procedures, the data were validated following the intent of the National Functional Guidelines.

5.3.3 Results of Data Validation/Usability Review

Malcolm Pirnie issued a Data Validation Report (June 1995) that gave the results of their validation. URS performed data validation services on 84 environmental samples. The matrix type and number of samples were as follows:

Matrix	No. of Samples
Groundwater	33
Surface water	5
Sediment	6
Surface soil	10
Soil boring	24
Transformer soil	4
Concrete	2

URS reported that a majority of the analytical results were usable as reported, despite minor deviations from EPA CLP criteria, which do not jeopardize the chemical representativeness of the data.

There were several instances, however, where compounds or whole fractions were rejected by URS based on deviations from CLP methodologies and/or data validation criteria.

Sample ID	Compound or Fraction
B9-SB01-A02	Acetone
B9-SB01-C02	Acetone
MPA3-SB01-A02	Acetone
MP08-SD01-A01	Semivolatiles, pesticides/PCBs
MP16-SS01-A01	Dieldrin
CW06-SS01-A01	Heptachlor epoxide
MP02-MW01-A01	Total and dissolved aluminum, chromium, and iron

The results for these samples are provided in this report, but are flagged in the Results summary tables. The Data Validation Report includes a discussion of the data quality and completeness.

5.3.4 Results of Field and Trip Blanks

During the Fort Monmouth site investigation, field/rinsate blanks and trip blanks were submitted for analysis (numbers of samples are shown in Tables 5.3-1 and 5.3-2), as discussed in Section 3 of this report. The results of the analyses of the field/rinsate blanks were used to assess the efficiency of the equipment decontamination procedures in preventing cross-contamination between samples, and to determine if the compounds detected in the characterization samples were attributable to the sampling equipment or to the site. The results of trip blank analyses were used to determine if compounds detected in samples analyzed for volatile organics were introduced during shipment or from containers and were not attributable to the site. A discussion of the difference between the samples contracted in the scope of work and the actual effort is included in Section 4.

A summary of the compounds detected in field/rinsate blanks is provided in Table 5.3-3. Inorganics, VOCs, and SVOCs were each detected in at least one field/rinsate blank collected during field activities. All of the organic compounds detected are common laboratory contaminants and were likely introduced into the samples during laboratory analysis.

Table 5.3-1
Main Post Samples Collected

MEDIA/PARAMETER	INVESTIGATION SAMPLES		QA/QC SAMPLES *		TOTAL SAMPLES	
	Scope of Work	Taken	Scope of Work	Taken	Scope of Work	Taken
Surface and shallow soil						
TCL VOA	4	4	1	2	5	6
TCL BNA	4	6	1	0	5	6
TCL pesticide/PCB	6	6	1	0	7	6
TCL PCB	8	8	1	0	9	8
TAL Metals	2	2	1	0	3	2
Soil Borings						
TCL VOA	38	31	2	2	40	33
TCL BNA	26	15	1	1	27	16
Pesticide/PCB	15	15	1	1	16	16
TAL Metal	13	16	1	1	14	17
TAL Cyanide	12	11	1	1	13	12
TPH	24	15	2	0	26	15
Sediment						
TCL VOA	3	3	1	3	4	6
TCL BNA	3	3	1	1	4	4
Pesticide/PCB	3	3	1	1	4	4
TAL Metal	4	6	1	1	5	7
TAL Cyanide	3	4	1	1	4	5
Concrete						
TCL PCB	6	4	1	1	7	5
Surface Water						
TCL VOA	8	8	1	1	9	9
TCL BNA	8	8	1	1	9	9
Pesticide/PCB	8	8	1	1	9	9
TAL Metal (Total)	8	8	1	1	9	9
TAL Metals (Dissolved)	8	8	1	1	9	9
TAL Cyanide	8	8	1	1	9	9
Groundwater						
TCL VOA	60	60	25	38	85	98
TCL BNA	60	60	9	16	69	76
Pesticide/PCB	60	60	9	16	69	76
TAL Metal (Total)	58	56	9	15	67	71
TAL Metals (Dissolved)	58	56	9	15	67	71
TAL Cyanide	52	52	9	10	61	62
Sulfate	12	12	2	4	14	15
Ammonia	8	8	2	4	10	13
TPH	6	6	2	5	8	11

* QA/QC samples are trip blanks, field blanks, and duplicates.

Table 5.3-2
Charles Wood Samples Collected

MEDIA/PARAMETER	INVESTIGATION SAMPLES			QA/QC SAMPLES *			TOTAL SAMPLES		
	Scope of Work	Taken	Analyzed	Scope of Work	Taken	Analyzed	Scope of Work	Taken	Analyzed
Surface and shallow soil									
TCL VOA	1	1	1	1	2	2	2	3	3
TCL BNA	1	1	1	1	0	0	2	1	1
TCL pesticide/PCB	1	1	1	1	0	0	2	1	1
TCL PCB	6	7	7	1	1	1	7	8	8
TAL Metals	13	11	11	1	1	1	14	12	12
Soil Borings									
TCL VOA	52	32	32	3	1	1	55	33	33
TCL BNA	52	31	31	3	1	1	55	32	32
Pesticide/PCB	52	31	31	3	1	1	55	32	32
TAL Metal	48	31	31	3	2	2	51	33	33
TAL Cyanide	12	12	12	1	1	1	13	13	13
TPH	0	1	1	0	0	0	0	1	1
Sediment									
TCL VOA	3	3	3	1	0	0	4	3	3
TCL BNA	3	3	3	1	0	0	4	3	3
Pesticide/PCB	3	3	3	1	0	0	4	3	3
TAL Metal	3	4	4	1	0	0	4	4	4
TAL Cyanide	3	3	3	1	0	0	4	3	3
Concrete									
TCL PCB	1	0	0	1	0	0	2	0	0
Surface Water									
TCL VOA	2	2	2	1	0	0	3	2	2
TCL BNA	2	2	2	1	0	0	3	2	2
Pesticide/PCB	2	2	2	1	0	0	3	2	2
TAL Metal (Total)	2	2	2	1	0	0	3	2	2
TAL Metals (Dissolved)	2	2	2	1	0	0	3	2	2
TAL Cyanide	2	2	2	1	0	0	3	2	2
Groundwater									
TCL VOA	38	34	34	22	25	25	60	59	59
TCL BNA	38	34	34	6	6	6	44	40	40
Pesticide/PCB	38	34	34	6	6	6	44	40	40
TAL Metal (Total)	34	30	30	6	4	4	40	34	34
TAL Metals (Dissolved)	34	30	30	6	4	4	40	34	34
TAL Cyanide	10	10	10	2	2	2	12	12	12

* QA/QC samples are trip blanks, field blanks, and duplicates.

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
Trip Blanks				
CW01-SB26-D02	N/A	ND	N/A	N/A
CW01-SB31-D02	N/A	ND	N/A	N/A
CW02-SB31-D02	N/A	ND	N/A	N/A
CW02-SB33-D02	N/A	ND	N/A	N/A
CW05-SB01-D02	N/A	ND	N/A	N/A
CW06-SB34-D02	N/A	ND	N/A	N/A
CW09-SB01-D02	silver (.93), aluminum (3830), arsenic (2.6), barium (6.6), beryllium (.39), calcium (366), cobalt (1.0), chromium (44), copper (2.3), iron (9720), mercury (.12), manganese (11.9), lead (3.9), vanadium (27.4), zinc (12.8), sodium (21.4), nickel (2.8), potassium (1480)	ND	N/A	N/A
CWA7-SB04-D02	N/A	ND	N/A	N/A
MPA-SB01-D02	N/A	ND	N/A	N/A
MPA-SB02-D02	N/A	ND	N/A	N/A
MP18-SB07-D01	N/A	ND	N/A	N/A
MP18-SB25-D02	N/A	acetone (30), chloroform (3J)	N/A	N/A
B3-SB01-D03	N/A	ND	N/A	N/A
B4-SB01-D01	N/A	ND	N/A	N/A
B5-SB01-D02	N/A	ND	N/A	N/A
B9-SB01-D02	N/A	acetone (8,300,000), benzene (6J)	N/A	N/A
B10-SB01-D02	N/A	acetone (22)	N/A	N/A
CW09-SS01-D01	N/A	ND	N/A	N/A
MP16-SS01-D01	N/A	ND	N/A	N/A
MP08-SD01-D01	N/A	ND	N/A	N/A
CW01-MW26-D02	N/A	ND	N/A	N/A
CW01-MW29-D01	N/A	acetone (20), 2-butanone (36)	N/A	N/A
CW06-MW01-D02	N/A	ND	N/A	N/A
CW06-MW34-D01	N/A	2-butanone (30)	N/A	N/A
MP04-MW07-D01	N/A	acetone (13), 2-butanone (27)	N/A	N/A
MP05-MW11-D02	ND	ND	ND	ND
MP08-MW12-D02	ND	ND	ND	ND
MP08-MW15-D01	ND	acetone (20), 2-butanone (37)	ND	ND
MP14-MW20-D02	ND	ND	ND	ND
B3-MW03B-D01	N/A	2-butanone (15)	ND	ND
B3-MW03B-D02	N/A	ND	ND	ND
B10-MW10B-D01	N/A	2-butanone (14)	ND	ND
B10-MW10B-D02	N/A	ND	ND	ND

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)
(continued)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
Field/Rinsate Blanks				
CW01-SB31-E02	N/A	ND	N/A	N/A
CW09-SB01-E02 SOL	N/A	acetone (5200), chloroform (3J)	N/A	N/A
MPA-SB01-E02	N/A	acetone (240 B), chloroform (6J)	N/A	N/A
B9-SB01-E02	N/A	acetone (130)	N/A	N/A
CW09-SS01-E01	N/A	ND	N/A	N/A
MP16-SS01-E01	N/A	ND	N/A	N/A
MP08-SD01-E01	N/A	ND	N/A	N/A
CW01-MW26-E02	aluminum (20.2), calcium (105), iron (12.0), potassium (67.9), magnesium (34.3), sodium (132), lead (2.6)	ND	N/A	N/A
CW01-MW26-E02 SOL	aluminum (18.4), calcium (115), iron (16.8), potassium (119), magnesium (47.6), sodium (156), lead (1.5), antimony (13.2)	N/A	N/A	N/A
CW01-MW29-E01	calcium (113), sodium (321)	ND	N/A	N/A
CW01-MW29-E01 SOL	calcium (72.3), sodium (137), nickel (12.9)	ND	N/A	N/A
CW06-MW01-E02	N/A	N/A	N/A	N/A
CW09-MW35-E01	aluminum (231), barium (40.8), calcium (21100), cobalt (4.0), iron (85.8), potassium (2090), magnesium (5580), manganese (43.9), sodium (7230), nickel (10.8), zinc (60.7)	acetone (12), 2-butanone (25)	ND	ND
CW09-MW35-E01 SOL	calcium (191), iron (3.8), potassium (82.5), sodium (654), vanadium (2.8), zinc (2.6)	N/A	N/A	N/A
MP04-MW07-E01	aluminum (18.1), barium (.81), calcium (57.4), iron (62.7), sodium (116), zinc (3.8)	acetone (10), 2-butanone (27)	ND	ND
MP04-MW07-E01 SOL	beryllium (.31), calcium (82.6), iron (4.3), potassium (68.8), sodium (81.4), zinc (2.4)	N/A	N/A	N/A
MP05-MW11-E02	calcium (289), potassium (737), sodium (165)	chloroform (33)	ND	ND
MP05-MW11-E02 SOL	sodium (147), calcium (55.4)	N/A	N/A	N/A
MP08-MW12-E02	aluminum (27), calcium (109), iron (13.2), sodium (87.3), vanadium (3.0), copper (2.1)	ND	bis (2-Ethylhexyl) phthalate (2J)	ND
MP08-MW12-E02 SOL	calcium (95.7), iron (7.4), sodium (120), zinc (4.1)	N/A	N/A	N/A
MP08-MW15-E01	calcium (107), sodium (140), nickel (11.4)	2-butanone (38)	bis (2-Ethylhexyl) phthalate (3JB)	ND
MP08-MW15-E01 SOL	calcium (57.1), sodium (156)	N/A	N/A	N/A
MP14-MW20-E02	calcium (103), iron (9.6), sodium (56.3), lead (1.5), zinc (3.9)	ND	ND	ND
MP14-MW20-E02 SOL	barium (1.2), calcium (102), iron (9.2), sodium (142), zinc (4.2)	N/A	N/A	N/A
MP18-MW03-E01	aluminum(33.2), barium(.92), calcium(65.6), cobalt(2.2), chromium(2.2), iron(19.3), manganese(1.1),sodium(101),			

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)
(continued)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
MP18-MW03-E01 SOL	aluminum(20.5), calcium(45.4), cobalt(2.2), chromium(4.1), iron(13.1), manganese(.72), sodium(94.1)			
MP18-MW24-E01	alumnium (25), calcium (282), iron (13.4), magnesium (20), sodium (160), antimony (21)	2-butanone (21)	ND	ND
MP18-MW24-E01 SOL	alumnium (28.4), calcium (161), copper (2.7), iron (13.5), magnesium (23.9), sodium(118)	N/A	N/A	N/A
MP18-MW24-E02	alumnium (20), calcium (460), copper (5.4), iron (24.5), sodium (75.8)	ND	bis (2-Ethylhexyl) pthalate (140)	ND
MP18-MW24-E02 SOL	calcium (106), copper (4), iron (15.7), sodium (97.2)	N/A	N/A	N/A
B3-MW03B-E01	aluminum (26.2), barium (1.0), calcium (123), iron (16.5), sodium (820), zinc (2.0)	2-butanone (17)	ND	ND
B3-MW03B-E01 SOL	aluminum (173), barium (113), calcium (25400), cobalt (7.3), iron (109), potassium (13200), magnesium (5790), manganese (90.1), sodium (20800), nickel (61.5), antimony (16.7), zinc (27)	N/A	N/A	N/A
B3-MW03B-E02	aluminum(27.1), calcium(368), iron(10.1), magnesium(46), sodium(296)	1,1,1-trichloroethane (8J)	ND	ND
B3-MW03B-E02 SOL	aluminum (17.2), calcium (163), iron (9.3), magnesium (61.3), sodium (179)	N/A	N/A	N/A
B10-MW10B-E01	calcium (33.6), manganese (2.7), sodium (95)	2-butanone (15)	ND	ND
B10-MW10B-E01 SOL	calcium (111), sodium (70.4)	N/A	N/A	N/A
B10-MW10B-E02	calcium (141), iron (9.3), magnesium (24), sodium (170), zinc (6.5)	ND	diethylphthalate (2JB)	ND
B10-MW10B-E02 SOL	calcium (130), iron (9.8), zinc (6.4), sodium (231)	N/A	N/A	N/A

Note: Numbers in () represent the concentration.
N/A - Not Applicable/No Sample
ND - Not Detected

Additionally, the low contaminant concentrations detected in the field blanks indicate that significant cross-contamination between samples did not occur. VOCs were detected in several of the trip blanks submitted for laboratory analysis. All of the VOCs detected are common laboratory contaminants and, similar to the field/rinsate blanks, were likely introduced into the samples during laboratory analysis. A summary of the analytical results for trip blanks is provided in Table 5.3-3.

5.3.5 Duplicates

Duplicate samples for groundwater, surface water, sediment, and soil were collected following the protocols in the *Site Investigation Fort Monmouth, NJ, Main Post and Charles Wood Areas, Chemical Data Acquisition Plan* (WESTON, December 1994) and are discussed in the subsections that follow. The degree of variation between the sample values (not including values below the quantitation limit) is presented in Table 5.3-4 by media.

5.3.5.1 Groundwater

Of the groundwater duplicate results, 70% were within 10% of the routine sample value and only 16% were not within 20% of the routine sample value. These data indicate reasonable agreement among the groundwater results. Groundwater sample results generally exhibit slight variation due to the homogeneous characteristics of liquid samples.

5.3.5.2 Surface Water

Of the surface-water duplicate results, 63% were within 10% of the routine sample and only 1 sample result was not within 20% of the routine sample. These data indicate reasonable agreement among the surface-water results. Surface-water sample results generally exhibit little variation due to the homogeneous characteristics of liquid samples.

Table 5.3-4
Duplicate Sample Data Within Given Ranges of Percent Variation

Medium	Variation in Duplicate Results										
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	>100
Soil Borings and Surface Soils	31	11	7	4	1	3	7	7	1		3
Sediment	9	7		2							
Surface Water	12	6					1				
Groundwater	106	20	12	5	1	3		1	1	1	1

5.3.5.3 Sediments

Of the sediment duplicate results, 50% were within 10% of the routine sample and only 11% were not within 30% of the routine sample. These data indicate reasonable agreement among the sediment sample results. Sediment sample results tend to show more variation due to the heterogeneity of solid samples.

5.3.5.4 Soils

Of the soil duplicate results, 41% (surface soil and soil boring samples) were within 10% of the routine sample and 35% were not within 30% of the routine sample. These data indicate reasonable agreement among the soil sample results. Soil sample results tend to show more variation, in general, due to the nonhomogeneous nature of solid samples.

5.4 TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

Tentatively identified compounds (TICs) were identified for volatile and semivolatile analyses. The sum of all TICs for every sample is provided in the data tables in Appendix D. In general, the sum of the TICs was small, less than 1 mg/kg for most solids and less than 600 µg/L for water. Significant amounts of TICs occurred in the sediment samples and the soil boring samples. The highest concentration of TICs for any sediment sample was 72 mg/kg, and the highest concentration for any soil sample was 18 mg/kg, both for semivolatile samples. By comparison, the proposed NJDEP cleanup criteria have a limit for total organics of 10,000 mg/kg. The highest concentration of volatile TICs for any solid sample was 1.1 mg/kg. By comparison, the proposed NJDEP limit for total volatile compounds is 1,000 mg/kg. Therefore, the concentration of TICs in solid samples will have no impact on whether it is less than the NJDEP cleanup criteria.

5.5 COMPARISON OF ANALYTICAL DETECTION LIMITS AND REMEDIATION STANDARDS

For certain compounds, the analytical method detection limits exceeded the NJDEP remediation standards. The compounds for which this occurred, along with the most stringent NJDEP remediation standard values and laboratory detection limits, are presented in Table 5.5-1.

The laboratory performed the analysis using the EPA Contract Laboratory Program (CLP) Statement of Work, "Organics Analysis, Multimedia, Multiconcentration," and "Inorganics Analysis, Multimedia, Multiconcentration," for TCL/TAL analyses as specified in the report *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*, and as approved by NJDEP in a letter dated 20 April 1994. The detection limits are generally in accordance with the method standards.

The detection limits for many surface-water analyses, including VOCs, SVOCs, and pesticides/PCBs, exceeded the most stringent NJDEP criteria. However, additional sampling is proposed at all surface-water sites.

For groundwater, 19 compounds, including VOCs, SVOCs, and pesticides, exceeded the NJDEP criteria. However, additional sampling is proposed for all monitor wells.

Only one compound exceeded NJDEP criteria in soil samples; i.e., toxaphene. Toxaphene was not present in significant quantities in the 1979 inventory of pesticides contained in the IA. Remedial action or additional sampling is proposed for the two pesticide storage areas, i.e., M-16 at the Main Post and CW-6 at Charles Wood.

For sediment, 13 compounds exceeded NJDEP criteria, including SVOCs, pesticides/PCBs, and 2 metals. Because sediment samples were taken at former locations of STP outfalls (STP had not been operating for at least 20 years), metals are the compounds that are of most concern. The detection limit of mercury was generally only slightly above the NJDEP criteria. The detection limit for antimony was generally close to the regulatory limit. Antimony is not believed to have been used in significant quantities at Fort Monmouth because the major activities have been training and research in electronics.

Table 5.5-1
COMPOUNDS FOR WHICH THE ANALYTICAL DETECTION LIMIT EXCEEDS NJDEP REMEDIATION STANDARDS

COMPOUND	NJDEP STANDARD	METHOD DETECTION LIMIT
SURFACE WATER (µg/L)		
1,2-Dichloroethane	0.291	2.4
2,4,6-Trichlorophenol	2.14	5.6
2,4-Dinitrotoluene	0.11	5.8
3,3'-Dichlorobenzidine	0.0386	2.8
4,4'-DDE	0.000588	0.1
4,4'-DDT	0.000588	0.1
Aldrin	0.000135	0.05
alpha-BHC	0.00391	0.05
alph-Chlordane	0.000277	0.05
Aroclor-1016	0.000244	1
Aroclor-1221	0.000244	2
Aroclor-1232	0.000244	1
Aroclor-1242	0.000244	1
Aroclor-1248	0.000244	1
Aroclor-1254	0.000244	1
Aroclor-1260	0.000244	1
Benzene	0.15	3.3
Benzo(a)anthracene	0.0028	4.9
Benzo(a)pyrene	0.0028	4.9
Benzo(b)fluoranthene	0.0028	5.7
Benzo(k)fluoranthene	0.0028	6.2
bis(2-Chloroethyl) ether	0.0311	9.7
bis(2-Ethylhexy)phthalate	1.76	9.7
Carbon Tetrachloride	0.363	1.5
Chrysene	0.0028	4.4
cis-1,3-Dichloropropene		3
Dibenz(a,h)anthracene	0.0028	6
Dieldrin	0.0019	0.1
Endosulfan sulfate	0.93	0.1
Endrin	0.0023	0.1
gamma-Chlordane		0.05
Heptachlor	0.000208	0.05
Heptachlor epoxide	0.000103	0.05
Hexachlorobenzene	0.000748	5.5
Hexachloroethane	2.73	5.3
Indeno(1,2,3-cd)pyrene	0.0028	7.1
Methoxychlor	0.03	0.5
Methylene Chloride	2.49	2.7
Toxaphene	0.0002	5
Vinyl Chloride	0.083	7.9
GOUNDWATER (µg/L)		
1,1,2,2-Tetrachloroethene	2	4.2
1,1,2-Trichloroethane	3	4.3

Table 5.5-1
(Continued)

1,2,4-Trichlorobenzene	9	9.6
1,2-Dichloroethane	0.3	2.4
1,2-Dichloropropane	0.5	1.7
Aldrin	0.002	0.05
alpha-BHC	0.006	0.05
Benzene	0.2	3.3
Bromodichloromethane	0.3	2
cis-1,3-Dichloropropene	0.2	3
Dieldrin	0.002	0.1
Hexachlorobutadiene	1	4.6
Methylene Chloride	2	2.7
Pentachlorophenol	0.3	4
Toxaphene	0.03	5
trans-1,3-Dichloropropene	0.2	2.4
SOIL (mg/kg)		
Toxaphene	0.1	210
SEDIMENT (mg/kg)		
2-Methylnaphthalene	65	580
Acenaphthene	150	580
Anthracene	85	580
Dibenzo (a,h) anthracene	60	580
Mercury	0.15	0.13
Antimony	2	5.4
2-BHC	0.394	2.9
Heptachlor	0.148	2.9
Endrin	0.0654	5.9
4,4' DDT	1.83	5.9
alpha-Chlordane	0.5	2.9
gamma-Chlordane	0.5	2.9
Aroclor	38.7	59

SECTION 6
CONCLUSIONS AND RECOMMENDATIONS

SECTION 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 MAIN POST

The conclusions and recommendations discussed in the following subsections are for the Main Post area of Fort Monmouth, and are based on the results of the site investigation activities. These conclusions and recommendations are also presented with the site-specific discussions in Section 4 and are summarized in Table 6.1-1.

6.1.1 Landfill 2 (M-2)

Investigation activities performed at site M-2 included the following:

- Sampling of two surface-water locations.
- Installation and sampling of three monitor wells.
- Tidal monitoring.

6.1.1.1 Conclusions

The surface-water sampling results indicate that two VOCs were detected at the two surface-water locations at concentrations greater than NJDEP surface-water criteria, and above maximum background concentrations. In addition, soluble lead was detected at a concentration greater than NJDEP criteria and the maximum background concentrations. Because the site formerly had a New Jersey Pollutant Discharge Elimination System (NJPDES) permit (permit No. 0057274), surface water has been sampled since 1985. The results from the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Chlorobenzene was detected in the groundwater at concentrations exceeding the NJDEP GWQC and background in both downgradient monitor wells from both sampling rounds and in the upgradient well during one sampling round.

Table 6.1-1

Main Post Site Summary and Recommendations

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
M-2 Landfill	Groundwater: Chlorobenzene in 3 wells Surface water: Tetrachloroethene Trichloroethene	Conduct groundwater and surface-water monitoring on a long-term basis.
M-3 Landfill	Groundwater: Chlorobenzene (low value) in 1 well Lead in 1 sample Surface water: None	Conduct groundwater and surface-water monitoring on a long-term basis. Excavate partially exposed drum and conduct confirmatory sampling.
M-4 Landfill	Groundwater: DDT (low value) in 1 well	Conduct groundwater monitoring on a long-term basis.
M-5 Landfill	Groundwater: Tetrachloroethene in 1 well	Conduct groundwater monitoring and sampling of surface-water location SS-6 on a long-term basis.
M-8 Landfill	Groundwater: Tetrachloroethene in 1 well Benzene in 1 well Chlorobenzene in 2 wells	Conduct groundwater monitoring and sampling of surface-water location SS-7 on a long-term basis.
M-12 Landfill	Groundwater: None	Conduct groundwater monitoring on a long-term basis.
M-14 Landfill	Groundwater: None Surface water: None	Conduct groundwater and surface-water monitoring on a long-term basis.
M-15 Water Tank	Soil: DDT DDE Lead Cadmium Zinc	Excavate contaminated soil and perform confirmatory sampling.
M-16 Former Pesticide Bldg.	Soil: Aldrin in 1 sample Dieldrin in 4 samples Heptachlor in 1 sample DDE in 1 sample DDT in 2 samples Groundwater: None	Excavate contaminated soil and perform confirmatory sampling. Abandon site monitor well.
M-18 Former Training Area	Soil: Chrysene (all SVOCs in 1 sample) Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Groundwater: DDD in 1 well Lead in 1 well	Locate and excavate possible UST and any contaminated soil and perform confirmatory sampling. Excavate stained soil at SB-06 and conduct confirmatory sampling. Conduct groundwater monitoring on a long-term basis.

Table 6.1-1

Main Post Site Summary and Recommendations (Continued)

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
AOC-3 Former Sewage Treatment Plant	Soil: None Sediment: None	No further action.
Pre-1941 Treatment Plant	Sediment: Arsenic Cadmium Chromium Zinc	No further action.
PCB Transformers	Soil: Building 292 Concrete: Buildings 1002, 1208, 1209	Remediate stained concrete when transformers are removed. Conduct confirmatory sampling. Sample soil at Bldg. 292 to determine extent of contamination.

The results of the tidal monitoring indicate that there is no apparent relationship between the changing creek levels and the water levels in upgradient monitor well MW-1; however, a direct relationship was observed between changing creek levels and the water levels in downgradient monitor wells MW-2 and MW-3. Conductivity and salinity results indicate the presence of freshwater in the creek at site M-2. Freshwater was indicated at monitor wells MW-1 and MW-3. A moderate to high specific conductance was measured at monitor well MW-2, which is unexplained.

6.1.1.2 Recommendations

Although groundwater sample results at site M-2 exceeded NJDEP criteria for one VOC, and surface-water results were slightly exceeded by two VOCs, immediate remedial action is not required for several reasons. Immediate remedial action is usually based on an immediate threat to human health. Shallow groundwater flows toward Mill Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. Although there is slight VOC contamination in Mill Creek, there is no use of this water for human consumption. In fact, Mill Creek becomes saline immediately downgradient of site M-2. Therefore, the groundwater and surface waters are not used for drinking water.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future. Although downgradient surface-water samples were not taken during this round, previous sampling at site M-8 indicated that NJDEP surface-water criteria were not exceeded for VOCs. Therefore, the only portion of Mill Creek for which NJDEP surface-water criteria are exceeded is the portion between sites M-2 and M-8. All of this portion is on Fort Monmouth property and, therefore, access to it is restricted.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, the Fort Monmouth Directorate of Public Works (DPW) proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.2 Landfill 3 (M-3)

Investigation activities performed at site M-3 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.
- Sampling of three surface-water locations.

6.1.2.1 Conclusions

The geophysical surveys indicate that the extent of the identified waste material is within the suspected boundaries of the landfill. Site monitor wells have been installed in appropriate locations to monitor groundwater quality upgradient and downgradient of the waste material. In an isolated area of the site the GPR results indicated hyperbolic radar signatures typical of a buried drum or drums. A partially exposed drum was also observed at this location.

Groundwater quality results indicate that chlorobenzene was detected in one downgradient well below laboratory quantitation limits, but just above NJDEP GWQC and background from one sampling round. Lead was also detected at levels above NJDEP GWQC and background.

The surface-water quality results indicate that no organic or inorganic concentrations exceeded both NJDEP surface-water criteria and the maximum background concentration. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. The results from

the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

6.1.2.2 Recommendations

Although NJDEP groundwater criteria were exceeded for one VOC, immediate remedial action is not required for several reasons. First, the measured value for the VOC was below the quantitation limit and just slightly above the GWQC. In addition, the shallow groundwater flows toward Lafetra Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. Surface-water samples did not exceed NJDEP surface-water criteria. Therefore, there is no immediate threat to human health.

In addition, because surface-water sampling has been performed at this site since 1986, and the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be the targeted for the monitoring program.

The partially exposed drum will be excavated. The area immediately around and under the drum will be investigated for additional drums. Any excavated drums will be examined to determine if hazardous materials were present or still exist. The drum and the excavation will be monitored with a photoionization detector (PID). NJDEP will be requested to send a representative to

monitor the excavation. If there is no indication that the drum contained, or still contains, hazardous materials and elevated readings are not observed on the PID, the excavation will be backfilled and no further action will be taken. If contamination is identified, additional sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993).

6.1.3 Landfill 4 (M-4)

Investigation activities performed at site M-4 included the following:

- Installation and sampling of three monitor wells.

6.1.3.1 Conclusions

One pesticide compound was detected at a concentration just above the NJDEP GWQC and background in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells, and also was not detected during previous sampling at downgradient location SS-5 (WESTON, 1993).

6.1.3.2 Recommendations

Although NJDEP groundwater criteria were exceeded for one pesticide, no immediate remedial action is required. The measured value of the pesticide was just slightly above the GWQC. Shallow groundwater flows toward Mill Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. The surface water was previously sampled downstream, but was not analyzed for pesticides. Since Mill Creek flows on Fort Monmouth property between sites M-4 and M-8, access to this stream is restricted.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable

and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor well locations are adequately placed to monitor downgradient groundwater, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern (including pesticides) identified in the first two rounds of sampling would be targeted for the long-term groundwater and surface-water monitoring program.

6.1.4 Landfill 5 (M-5)

Investigation activities performed at site M-5 included the following:

- Installation and sampling of two monitor wells.

6.1.4.1 Conclusions

PCE was detected in the upgradient well in concentrations exceeding NJDEP GWQC and background from both sampling rounds. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. During previous investigations, PCE was also detected at downgradient surface-water sampling location SS-6 (WESTON, 1993). Surface water was not sampled at site M-5 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at site M-2, which is upgradient. For site M-2, the results of the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

6.1.4.2 Recommendations

Although groundwater sample results exceeded NJDEP criteria for one VOC, immediate remedial action is not required. Shallow groundwater at the site flows toward Mill Creek and Lafetra Creek, and there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that some VOC concentrations exceed NJDEP surface-water criteria in Mill Creek adjacent to site M-5. However, previous rounds of sampling have indicated that VOC concentrations do not exceed surface-water criteria at site M-8, which is downgradient of site M-5. Therefore, there is little immediate threat to human health.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.5 Landfill 8 (M-8)

Investigation activities performed at site M-8 included the following:

- Abandonment of previously installed monitor wells and piezometers.
- Installation and sampling of four monitor wells.

- Tidal monitoring.

6.1.5.1 Conclusions

Due to highly turbid conditions and poor water-level recovery of the original monitor wells, all original monitor wells and piezometers were abandoned.

Groundwater sampling results indicate low concentrations of benzene and chlorobenzene were detected in two downgradient monitor wells, and PCE concentrations were detected in the upgradient well (MW-12) exceeding NJDEP GWQC. Additionally, PCE and other VOCs were previously detected at location SS-7, downgradient of site M-8.

Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. However, surface water was not sampled at site M-8 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at sites M-2 and M-3, which are upstream. The concentrations of VOCs at site M-8 for previous rounds were less than the NJDEP surface-water criteria.

The results of the tidal monitoring indicate that there is no apparent relationship between creek levels and water levels in MW-12 because of its distance from the creek. A poor to moderate relationship was measured between MW-14 and creek levels. A direct relationship was observed between creek levels and MW-13 and MW-15. The conductivity and salinity measurements in Parkers Creek indicate the presence of brackish to salty water at site M-8. Groundwater sampled from MW-12 indicates freshwater. Monitor wells MW-13, MW-14, and MW-15 indicate brackish to salty water in an area of the water-bearing unit close to Parkers Creek.

6.1.5.2 Recommendations

Although groundwater sample results exceeded NJDEP criteria for three VOCs, immediate remedial action is not required. Groundwater flows toward Lafetra Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or

downgradient of the site. In fact, groundwater at three of the four monitor wells is brackish and unsuitable for drinking. The brackish water is a result of the proximity of the wells to Parkers Creek, and the direct relationship of tidal fluctuations and site groundwater levels. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that VOC concentrations did not exceed NJDEP surface-water criteria in the stream. Therefore, there is little immediate threat to human health.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.6 Landfill 12 (M-12)

Investigation activities performed at site M-12 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.
- Tidal monitoring.

6.1.6.1 Conclusions

The results of the geophysical surveys indicate that the identified fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells are positioned to adequately monitor groundwater downgradient of these areas.

Groundwater sampling results indicate that no compounds of concern exceeded NJDEP GWQC from upgradient and downgradient wells.

The results of the tidal monitoring relate to both sites M-12 and M-14. The data indicate that there is no apparent relationship between creek levels and water levels in MW-19 and MW-20. A poor to moderate relationship was measured between MW-16, MW-17, and MW-18 and creek levels. A direct relationship was observed between creek levels and MW-21. The conductivity and salinity measurements in Husky Brook indicate the presence of brackish to salty water at sites M-12 and M-14. Groundwater sampled from monitor wells at each location indicates freshwater.

6.1.6.2 Recommendations

Although no compounds of concern were identified at site M-12, because of the site's history of being used as a landfill, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a long-term basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.7 Landfill 14 (M-14)

Investigation activities performed at site M-14 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.

- Sampling of two surface-water locations.
- Tidal monitoring.

6.1.7.1 Conclusions

The results of the geophysical surveys indicate that fill and some metallic debris exist throughout the site; however, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material and the small amount of subsurface metallic material present at the site.

The groundwater and surface-water sampling results indicate that no compounds of concern were detected above NJDEP GWQC and surface-water criteria.

Tidal monitoring was conducted at site M-12 and site M-14 simultaneously. The results of the tidal monitoring are discussed in Subsection 6.1.6.

6.1.7.2 Recommendations

Although no compounds of concern were identified at site M-14, because of the site's history of being used as a landfill, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.8 Water Tank (M-15)

Investigation activities performed at site M-15 included the following:

- Collection of two surface soil samples near the water tank.

6.1.8.1 Conclusions

Two pesticide compounds and three metals, cadmium, zinc, and lead, were detected in surface soil at levels that exceeded NJDEP residential SCC and maximum background.

6.1.8.2 Recommendations

DPW has submitted the necessary documentation to Headquarters, Army Materiel Command/Army Environmental Center (HQAMC/AEC) to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination encompasses the perimeter of the tank, about 10 feet at the widest point. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 13 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 6 inches. NJDEP will be requested to send a representative to observe the excavation.

6.1.9 Former Pesticide Storage Building (M-16)

Investigation activities performed at site M-16 included the following:

- Collection of four surface soil samples.
- Collection of two soil samples from discrete depth intervals at one soil boring location.
- Installation and sampling of one monitor well.

6.1.9.1 Conclusions

Pesticide compounds were detected at four surface soil sampling locations and in one soil boring sample (0 to 2-foot interval) in concentrations above NJDEP criteria and background.

No compounds of concern were detected in the groundwater above NJDEP criteria.

6.1.9.2 Recommendations

DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination is approximately 50 feet by 20 feet. The depth of contamination is assumed to be 12 inches. Excavation will be conducted in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 56 yd^3 of soil will be excavated, assuming that soil will be excavated to a depth of 12 inches. NJDEP will be requested to send a representative to observe the excavation.

The site monitor well will be properly abandoned due to the nondetection of compounds of concern in groundwater. The remedial activities proposed will remediate potential source areas of pesticides detected in soil.

6.1.10 Former Training Area (M-18)

Investigation activities performed at site M-18 included the following:

- Geophysical surveys.
- Soil sampling at nine soil boring locations.
- Installation and sampling of two monitor wells.

6.1.10.1 Conclusions

The geophysical surveys identified several anomalies indicative of buried waste and fill material within the suspected boundaries of the site M-18 area. One anomaly was indicative of a UST or storage tank component. The geophysical results indicate that soil borings and monitor wells were appropriately located to evaluate subsurface conditions downgradient and within landfill boundaries.

The soil sampling results indicated that six SVOCs were detected at SB-06 in concentrations that exceeded the NJDEP criteria and established background concentrations.

The groundwater sampling results indicate that 4,4-DDD was detected at a concentration just above the NJDEP GWQC in one well (MW-24) from both sampling rounds. Lead was detected in one location above NJDEP GWQC and background. TPH concentrations were also detected just above laboratory quantitation limits in MW-24 and MW-25 in both sampling rounds.

6.1.10.2 Recommendations

Trenching will be performed at the suspected UST or UST component location to confirm the geophysical results and to excavate if necessary. A PID will be used to conduct field screening during the excavation. The excavation will be performed in conjunction with confirmatory sampling, in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993), if a UST is encountered to ensure that NJDEP SCC are achieved. NJDEP will be requested to send a representative to observe the excavation.

Additionally, soil at soil boring SB-06 will be excavated. If it is determined that the suspected UST is the source of contamination at SB-06, this location will be remediated in conjunction with the UST. Confirmatory sampling will also be conducted.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.11 Former Main Post Sanitary Treatment Plant (AOC-3)

Investigation activities performed at site AOC-3 included the following:

- Collection of two soil samples from two soil boring locations.
- Collection of one sediment sample from one location in the Parkers Creek outfall area.

6.1.11.1 Conclusions

The results of the soil and sediment sampling indicated that compounds of concern were not detected above the NJDEP criteria and established background concentrations.

6.1.11.2 Recommendations

No further action will be taken.

6.1.12 Pre-1941 Sanitary Treatment Plant

Investigation activities performed at the former STP included the following:

- Collection of one sediment sample from the outfall area.

6.1.12.1 Conclusions

Nine metals were detected above NJDEP criteria in the sediment sample collected at the outfall area. In addition, four metals (arsenic, cadmium, chromium, and zinc) exceeded their respective maximum background concentrations. The other five metals were detected below established background concentrations.

6.1.12.2 Recommendations

Although four metals were detected in sediment at levels exceeding NJDEP criteria and background, in the worst case the criteria were exceeded by a factor of three. Since the samples was taken at the outfall of the STP, the results are believed to be the worst case and the area of

contamination is probably small. Access to this portion of Lafetra Creek is restricted although the stream is on the property boundary. The STP has not been used since 1941, and, presumably, the local ecology has reached an equilibrium. Therefore, since remediation would disrupt the ecology of the site, no further action will be taken.

6.1.13 PCB Transformers — Main Post

Investigation activities relative to the former location of PCB transformers included the following:

- Collection of soil and concrete samples for PCB analysis.

6.1.13.1 Conclusions

PCB levels in stained concrete were found to exceed NJDEP guidance levels in indoor vaults at Buildings 1002, 1208, and 1209. PCBs were also detected above applicable soil standards in the soil beneath transformer MP-062 on the northwest side of Building 292.

6.1.13.2 Recommendations

Since the indoor vaults are normally locked and are accessible by a very limited number of facility personnel, and the stained concrete cannot be removed without significantly disrupting electrical service, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. A warning sign will be posted, and workers entering the vaults will be trained to take precautions to prevent contamination.

Because the concentration of PCBs is only slightly above the SCC, additional sampling will be conducted beneath the former location of transformer MP-062 to determine the vertical and horizontal extent of PCBs in soil. The soil sampling will be performed in accordance with the NJDEP *Technical Requirements for Site Remediation* (NJDEP, 1993).

6.2 CHARLES WOOD

The conclusions and recommendations discussed in the following subsections are for the Charles Wood area of Fort Monmouth, and are based on the results of the site investigation activities.

These conclusions and recommendations are also presented with the site-specific discussions in Section 4 and are summarized in Table 6.2-1.

6.2.1 Wastewater Treatment Lime Pit 1 (CW-1)

Investigation activities performed at site CW-1 included the following:

- Collection of soil samples from four soil borings.
- Installation and sampling of four monitor wells at each of the soil boring locations.

6.2.1.1 Conclusions

The soil sample results indicate that compounds of concern were either not detected or were below laboratory quantitation limits and NJDEP criteria.

The groundwater sampling results indicate that TCE, PCE, and 1,2-dichlorobenzene were detected in the groundwater downgradient of the site at levels that exceeded the NJDEP criteria.

6.2.1.2 Recommendations

Although NJDEP groundwater criteria were exceeded by three VOCs at this site, immediate remedial action is not required. The probable source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is

WESTON MANAGERS DESIGNERS/CONSULTANTS

Table 6.2-1

Charles Wood Site Summary and Recommendations

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
CW-1 Acid Pit	Soil: None Groundwater: 1,2-Dichloroethene in 1 well Trichloroethene in 2 wells Tetrachloroethene in 1 well	Conduct soil-gas survey. Based on the results of the survey, install and sample two additional monitor wells. Conduct groundwater monitoring on a long-term basis for existing and newly installed monitor wells.
CW-2 Acid Pit	Soil: PCBs in 1 sample Groundwater: Tetrachloroethene in 1 well	Conduct soil-gas survey. Based on the results of the survey, install and sample two additional monitor wells. Collect soil samples for PCBs from monitor well borings. Conduct groundwater monitoring on a long-term basis for existing and newly installed monitor wells.
CW-3	No samples collected.	Facility will perform trenching to investigate site. If there is no indication of subsurface contamination, then no further action will be taken.
CW-3A Debris Site	Geophysics survey	Facility will investigate geophysics anomalies by backhoe trenching. If there is no indication of subsurface contamination, no further action will be taken.
CW-4 Indoor Firing Range	Soil: Lead	The contaminated soil will be excavated and confirmatory sampling will be performed.
CW-5 Former Sewage Treatment Plant	Soil: None Sediment: None	No further action.
CW-6 Pesticide Storage Building	Soil: Cadmium in 1 sample Dieldrin in 1 sample Groundwater: Benzene in 1 sample	Conduct groundwater monitoring on a long-term basis.
CW-9 Sludge Dump	Soil: Cadmium in 1 sample Groundwater: None	No further action.
AOC-7 Former Drum Storage Area	Soil: None	No further action.
PCB Transformers	Soil: Building 2000 (4 samples)	Excavate contaminated soil and conduct confirmatory sampling.

currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater between the acid neutralization pit and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells, if necessary, at the downgradient edge of the plume. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.2.2 Wastewater Treatment Lime Pit 2 (CW-2)

Investigation activities performed at site CW-2 included the following:

- Collection of soil samples from four soil borings.
- Installation and sampling of four monitor wells at each of the soil boring locations.

6.2.2.1 Conclusions

The results of the soil sampling indicate that one PCB compound (Aroclor-1254) was detected in SB-30 at a concentration slightly above the NJDEP SCC. PCB compounds were not detected

in the other three soil borings. In addition, PCBs were not detected in groundwater samples in the corresponding well location, MW-30.

Groundwater sampling results indicate that PCE was detected in the groundwater in one of the four wells (MW-32) in one of the two sampling rounds at levels slightly exceeding the NJDEP GWQC.

6.2.2.2 Recommendations

Although NJDEP groundwater criteria were exceeded by one VOC at this site, immediate remedial action is not required. The source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater between the acid neutralization pit and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of PCE concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells if necessary. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and from the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program. When the additional monitor wells are

installed, soil samples will be collected for PCB analysis because of the detection of PCBs in a soil sample collected from SB-30.

6.2.3 Landfill 3 (CW-3)

Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed and properly disposed of in June 1995 and exploratory trenches are planned to determine if any subsurface debris or soil staining is present. Field screening will be performed during excavation using a PID. NJDEP will be requested to send a representative to observe the investigation. In the absence of any elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.

6.2.4 Debris Site (CW-3A)

Investigation activities performed at site CW-3A included only geophysical surveys to evaluate accessible areas for potential subsurface waste.

6.2.4.1 Conclusions

Geophysical surveys indicated two areas where subsurface metallic debris may be present.

6.2.4.2 Recommendations

Exploratory trenching will be performed to investigate areas where subsurface metallic debris may be present. Field screening will be conducted with a PID during the excavation. NJDEP will be requested to send a representative to observe the excavation. In the absence of elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further

action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.

6.2.5 Range (Small Arms) (CW-4)

Investigation activities performed at site CW-4 included the following:

- Collection of one surface soil sample.
- Collection of one soil boring sample.

6.2.5.1 Conclusions

Soil sampling results indicate that only lead was detected at a concentration exceeding the NJDEP SCC at the spent round disposal area.

6.2.5.2 Recommendations

DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations.

The contaminated soil will be removed and disposed of in accordance with applicable regulations. The area of contamination is approximately 8 feet in diameter. The estimated depth of excavation is assumed to be 7 feet. Excavation will be performed in conjunction with confirmatory sampling to ensure that NJDEP SCC are achieved. It is estimated that 17 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 7 feet. NJDEP will be requested to send a representative to observe the excavation.

6.2.6 Former Sanitary Treatment Plant (CW-5)

Investigation activities performed at site CW-5 included the following:

- Collection of one sediment sample from the outfall area east of Hope Road.
- Installation of two soil borings and collection of two soil samples, one from each boring.

6.2.6.1 Conclusions

Three compounds (4,4'-DDT, 4,4'-DDD, and 4,4'-DDE) were detected in the sediment at levels that were above the NJDEP sediment guidance criteria but below background. Soil results were below the NJDEP SCC and established maximum background.

6.2.6.2 Recommendations

No further action will be taken.

6.2.7 Pesticide Storage Building T-2044 (CW-6)

Investigation activities performed at site CW-6 included the following:

- Installation of two soil borings and collection of two samples from SB-34 and one from SB-01.
- Installation and sampling of one monitor well.
- Sampling of existing monitor well MW-1.
- Collection of one surface soil sample from a drainage ditch.

6.2.7.1 Conclusions

The pesticide dieldrin and the metal cadmium were detected in the soil at two different locations, each at levels that exceeded NJDEP SCC and background. However, the average concentrations of dieldrin and cadmium in surface soil samples at CW-6 and CW-9 did not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. Groundwater samples indicated that benzene was detected in the existing monitor well (MW-1), which is attributed to a previously removed UST. Benzene was not detected in downgradient wells. Pesticides were not detected in any groundwater samples above NJDEP criteria.

6.2.7.2 Recommendations

NJDEP groundwater criteria were exceeded for one VOC, but the measured value was just slightly above the GWQC. In addition, one pesticide was detected in soils at a level above criteria and background, but was just slightly above the SCC. Therefore, no immediate remedial action is necessary.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.2.8 Sludge Dump (CW-9)

Investigation activities performed at site CW-9 included the following:

- Installation and sampling of two monitor wells.
- Collection of one soil sample from a soil boring.
- Collection of nine surface soil samples.

6.2.8.1 Conclusions

The average concentration of cadmium in surface soil samples at CW-6 and CW-9 and beryllium in surface soil location SS-09 at site CW-9 do not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. No compounds of concern were detected in site groundwater above NJDEP criteria.

6.2.8.2 Recommendations

No further action will be taken.

6.2.9 Former Hazardous Waste Storage Area (AOC-7)

Investigation activities performed at site AOC-7 included the installation of six soil borings. One soil sample was collected from each boring at depths ranging from 8 to 14 feet.

6.2.9.1 Conclusions

No compounds of concern were detected at this site at levels that exceeded NJDEP criteria.

6.2.9.2 Recommendations

No further action will be taken.

6.2.10 PCB Transformers — Charles Wood

Investigation activities performed at the former PCB transformer locations included the collection of seven surface soil samples for PCB analysis.

6.2.10.1 Conclusions

PCBs were detected above the NJDEP criteria in each of the four soil samples collected downgradient of the former transformer location northeast of Building 2000 (transformer CW-035). PCBs were not detected above NJDEP criteria in samples collected from the other three sampling locations.

6.2.10.2 Recommendations

Additional samples will be taken to further delineate the extent of contamination and the contaminated soil will be removed and disposed of in accordance with applicable regulations. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved.

ACRONYMS/REFERENCES

LIST OF ACRONYMS

AA	atomic absorption spectrophotometer
ACM	asbestos-containing material
AMC	U.S. Army Materiel Command
AOC	area of concern
ASTM	American Society for Testing and Materials
ATV	all terrain vehicle
AVRADA	U.S. Army Aviation Research and Development Activity
AWQC	ambient water quality criteria
bgs	below ground surface
BNA	base/neutral/acid
BRAC	Base Realignment and Closure Program
CDAP	Chemical Data Acquisition Plan
CECOM	U.S. Army Communications and Electronics Command
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
DCAA	Defense Contract Audit Agency
DENTAC	U.S. Army Dental Activity
DIS	Defense Investigation Services
DOI	U.S. Department of the Interior
DOP	di-octyl-phthalate
DOT	U.S. Department of Transportation
DPW	Directorate of Public Works, Fort Monmouth, New Jersey
DQOs	data quality objectives
EM	electromagnetic
EPA	U.S. Environmental Protection Agency
EqP	equilibrium partitioning
ER-L	Effects Range-Low (NOAA)
FSP	Field Sampling Plan
ft^2	square feet
ft msl	feet above mean sea level
FWS	U.S. Fish and Wildlife Service
GC/MS	gas chromatograph/mass spectrometer
GC	gas chromatograph
GOGO	government-owned, government-operated
gpm	gallons per minute
GPR	ground penetrating radar
GWQC	NJDEP Groundwater Quality Criteria
HHCs	halogenated hydrocarbons
HQAMC/AEC	Headquarters, Army Materiel Command/Army Environmental Center
IA	Installation Assessment
IATA	International Air Transport Association
ICP	inductively coupled plasma spectrometer
ID	inside diameter
ISC	U.S. Army Information Systems Command

LIST OF ACRONYMS
(Continued)

ISMA	U.S. Army Information System Management Agency
kHz	kiloHertz
LABCOM	U.S. Army Laboratory Command
m^3	cubic meter
MAG	magnetometry
MCSS	Monmouth County Soil Survey
MEDDAC	U.S. Army Medical Department Activities
mg/cm^2	milligrams per square centimeter
mg/g	milligrams per gram
mg/kg	milligrams per kilogram
mg/m^3	milligrams per cubic meter
MHz	megaHertz
mS/m	milliSiemens per meter
MS	matrix spike
MSD	matrix spike duplicate
msl	mean sea level
µg/g	microgram per gram
µg/kg	microgram per kilogram
µg/L	microgram per liter
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NMCRSA	Northeast Monmouth County Regional Sewerage Authority
NOAA	National Oceanic and Atmospheric Administration
nT	nanoTesla
OVA	organic vapor analyzer
OVM	organic vapor monitor
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PE	performance evaluation
PID	photoionization detector
ppm	parts per million
ppth	parts per thousand
PQL	practical quantitation levels
PVC	polyvinyl chloride pipe
QA/QC	quality assurance/quality control
QC	quality control
R&D	research and development
SBA	Small Business Administration
SCC	Soil Cleanup Criteria
SHERP	Safety, Health and Emergency Response Plan
SI	site investigation
SIR	Subsurface Interface Radar™

LIST OF ACRONYMS
(Continued)

SOP	standard operating procedure
STP	sanitary treatment plant
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TIC	tentatively identified compound
TOC	site-specific organic carbon
TPH	total petroleum hydrocarbons
TRI-TAC	Joint Tactical Communications Office
TSCA	Toxic Substances Control Act
URS	URS Consultants, Inc.
USACE	U.S. Army Corps of Engineers
USACHCS	U.S. Army Chaplain Center and School
USAMPS	U.S. Army Military Preparatory School
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USC	Unified Soil Classification
UST	underground storage tank
vac	vacuum
VOA	volatile organic analysis
VOC	volatile organic compound
WESTON®	Roy F. Weston, Inc.
yd^3	cubic yard

REFERENCES

Brown, G.A. and O.S. Zapecza. 1990. *Results of Test Drilling in Howell Township, Monmouth County, New Jersey.* USGS, West Trenton, NJ.

CECOM Historical Office. 1985. *A Concise History of Fort Monmouth, New Jersey.* Fort Monmouth, NJ.

Cosulich. 1981. *Engineering Design to Accompany Registration Statement, Fort Monmouth Solid Waste Landfill.* W.F. Cosulich Associates. May 1981.

EPA (U.S. Environmental Protection Agency). 1993. Drinking Water Regulations and Health Advisories, Office of Water, Washington, DC. May 1993.

EPA (U.S. Environmental Protection Agency). 1989. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.*

EPA (U.S. Environmental Protection Agency). 1986. *Quality Criteria for Water.* EPA 440/5-86-001.

EPA (U.S. Environmental Protection Agency). 1982. *Sampling Protocols for Collecting Surface Water, Bed Sediment, Bivalves, and Fish for Priority Pollutant Analysis.* EPA-68-01-6195. 152 pp.

Fields, T.W., T.F. McNevin, R.A. Harkov, and J.V. Hunter. 1992. *A Summary of Selected Soils Constituents and Contaminants at Background Locations in New Jersey.* New Jersey Department of Environmental Protection, Site Remediation Programs and Division of Science and Research.

FWS (U.S. Fish and Wildlife Service). National Wetlands Inventory. Asbury Park Quadrangle Map.

FWS (U.S. Fish and Wildlife Service). National Wetlands Inventory. Long Branch Quadrangle Map.

Gill, H.E. 1962. *Groundwater Resources of Cape May County, N.J.: Saltwater Invasion of Principal Aquifers.* State of New Jersey Department of Conservation and Economic Development, Special Report 18.

Harriman, D.A. and B.P. Sargent. 1985. *Ground-Water Quality in East-Central New Jersey, and a Plan for Sampling Networks.* U.S. Geological Survey, Water-Resources Investigations Report 85-4243.

Harriman, D.A., D.A. Pope, and A.D. Gordon. 1989. *Water-Quality Data for the Potomac-Raritan-Magothy Aquifer System in the Northern Coastal Plain of New Jersey, 1923-86.* New Jersey Geological Survey Report 19.

Jablonski, L.A. 1968. *Groundwater Resources of Monmouth County, New Jersey.* USGS Special Report 23. USGS, Washington, DC.

Jablonski, C.F. and R.J. Baumley. 1989. *Soil Survey of Monmouth County, New Jersey.* U.S. Department of Agriculture, Soil Conservation Service.

Klein, C. and C.S. Hurlburt, Jr. 1985. *Manual of Mineralogy.* J. Wiley and Sons, NY.

Long, E.R., D.D. MacDonald, S.C. Smith, and F.D. Calder. 1995. "Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Environments." In: *Environ. Mgmt.* Vol. 19, No. 1. pp. 81-97.

Malcolm Pirnie. 1995. Data Validation Report. June 1995.

McNeill, J.D. 1980. *Electromagnetic Terrain Conductivity Measurements at Low Induction Number.* Technical Note TN-6, Geonics, Ltd., Mississauga, Ontario.

MCSS (Monmouth County Soil Survey). 1989.

Meisler, H., J.A. Miller, L.L. Knobel, and R.L. Wait. 1988. "Region 22, Atlantic and Eastern Gulf Coastal Plan." In: *Hydrogeology: The Geology of North America*, W. Back, J.S. Rosenhein, and P.R. Seaber, editors. Vol. 0-2. pp. 209-218.

Minard, J.P. 1969. *Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey.* U.S. Government Printing Office, Washington, DC.

NJDEP (New Jersey Department of Environmental Protection). Groundwater Quality Criteria (GWQC).

NJDEP (New Jersey Department of Environmental Protection). 1995. *Site Remediation News*, Winter 1995.

NJDEP (New Jersey Department of Environmental Protection). 1993a. *Ground Water Quality Standards.* NJAC 7:9-6. February 1993.

NJDEP (New Jersey Department of Environmental Protection). 1993b. *Technical Requirements for Site Remediation.* NJAC 7:26E. July 1993.

NJDEP (New Jersey Department of Environmental Protection). 1993c. *New Jersey Surface Water Quality Standards.* NJAC 7:9-4. February 1993.

NJDEP (New Jersey Department of Environmental Protection). 1992a. *Cleanup Standards for Contaminated Sites, Proposed New Rules.* NJAC 7:26D. February 1992.

NJDEP (New Jersey Department of Environmental Protection). 1992b. *Field Sampling Procedures Manual.* May 1992.

NJDEP (New Jersey Department of Environmental Protection). 1992c. Letter from Division of Parks and Forestry to Mr. Joseph Fallon. 18 September 1992.

NJDEP (New Jersey Department of Environmental Protection). 1991. Guidance for Sediment Quality Evaluations.

NJDEP (New Jersey Department of Environmental Protection). 1990. Letter to Mr. Dinker Desai. 8 June 1990.

NOAA (National Oceanic and Atmospheric Administration). 1990. "Potential for Biological Effects of Sediment Sorbed Contaminants." Tech Memorandum.

Tedrow, J.C.F. 1986. *Soils of New Jersey.* Robert E. Krieger Publishing Company, Malabar, FL. p. 349.

U.S. Army. 1959. *Fort Monmouth History and Place Names, 1917-1959.* Fort Monmouth, NJ.

USATHAMA (U.S. Army Toxic and Hazardous Materials Agency). 1980. *Installation Assessment of Fort Monmouth.* Report 171. May 1980.

USGS (U.S. Geological Survey). 1989. Asbury Park Quadrangle Map.

USGS (U.S. Geological Survey). 1981. Long Branch Quadrangle Map.

WESTON (Roy F. Weston, Inc.). 1994. *Chemical Data Acquisition Plan for Site Investigation at Fort Monmouth, New Jersey.*

WESTON (Roy F. Weston, Inc.). 1993. *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey.*

Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

APPENDIX A

MAIN POST AND CHARLES WOOD
BOREHOLE LOGS AND WELL COMPLETION SUMMARIES

MAIN POST
BOREHOLE LOGS AND WELL COMPLETION SUMMARIES

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : MP2-MW1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/14/94 *END DATE :* 12/14/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 22.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 22.75 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVES
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	19.440
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32584

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 33.1"
Longitude-West: 74 deg 03' 08.8"

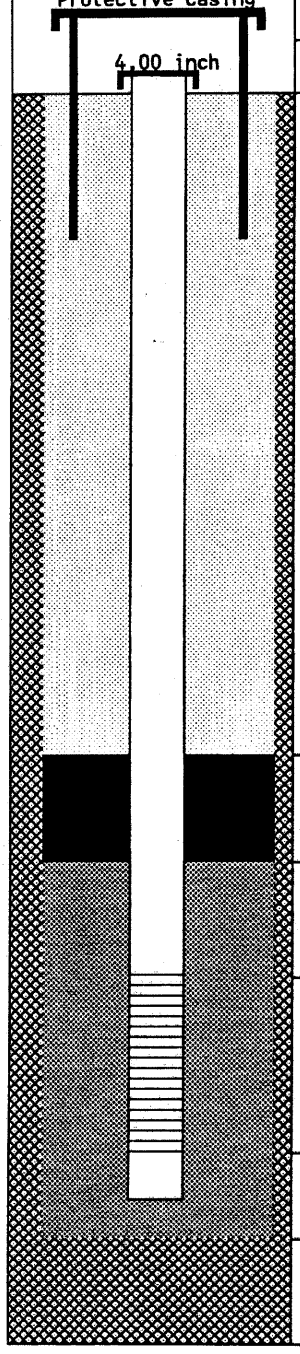
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 2	***INSPECTOR***	K. VALENTI

WELL ID	MP2-MW1
START DATE	12/14/94
COMPLETION DATE	12/14/94

WATER LEVELS



DEPTH		ELEV.
1.60	TC	21.04
0.00	GS	19.44
3.75	BN	15.69
5.75	SP	13.69
7.00	SC	12.44
22.29	BS	-2.85
22.00	TD	-2.56

DRILLING SUMMARY

Driller WELLINGTON REEVES
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 7.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.60 ***ft.*** ***Protective Casing:*** 1.98 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 3.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 3.75 to 5.75 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 5.75 to 22.75 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 7.00 to 22.29 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 22.29 to 22.75 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/22/94
Method Surge blocking, overpump
Yield <1 gpm ***Purged Volume*** 9 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 22.00	
SITE NAME : MAIN POST 2		LOGGER : K. VALENTI	
BORING ID : MP2-MW1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 19.440 surveyed		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Silty sand, SM	DK BROWN	LSE	MST	4 6 5 6	HNU 0.0	Fill. Topsoil-organics.
				Poorly graded sand, SP	LT BROWN	LSE	MST		HNU 0.0	Fill, M-F sand (parking lot fill) with some rounded stones.
18	1									
				No Sample Recovered						
17	2		100	Poorly graded sand, SP	LT BROWN	LSE	MST	5 5 4 4	HNU 0.0	Uncert./Fill? Mostly sand (m-f) little gravel, lit. silt, some small rounded stones, same as above.
16	3									
15	4		100	Silty sand, SM	GRAYISH BROWN	SFT	WET	5 7 10	HNU 0.0	Same as above interval. Mottling noted in matrix.
				Sandy lean clay, CL	LT ORANGE BROWN	FRM	WET	8	HNU 0.0	Orange-brown sand, some silt, clay. Gray mottling noted throughout matrix in spoon.
14	5									
				Poorly graded sand, SP	ORANGE-BROWN	LSE	WET		HNU 0.0	4" layer of dark orange to brown coarse to medium sand.
				Silty sand, SM	GRAYISH BROWN	FRM	MST		HNU 0.0	Mottling noted some small sub-angular to sub-rounded.
13	6		100	Silty sand, SM	GRAYISH-BROWN	LSE	WET	7 13 11	HNU 0.0	Slight mottling, silty sand (wet)
				Sandy lean clay, CL	LT GRAYISH BRN	FRM	WET	12	HNU 0.0	Wet, mottled sandy clay (with silt)
12	7									
				Well-graded sand, SW	ORANGE-BROWN	LSE	WET		HNU 0.0	2" coarse to medium sand.
				Sandy lean clay, CL	BROWN LT GRAY	SFT	WET		HNU 0.0	Wet, mottled sandy clay with silt.
11	8		100	Silty sand, SM	LT GRAY-BROWN	LSE	WET	6 7 7 9	HNU 0.0	sharp contact.
				Silty sand, SM	BROWNISH DK GRY	SFT	WET		HNU 0.0	
10	9									
9	10		100	Silty sand, SM	BRN-DK GRY/BLK	SFT	SAT	7 9 10 9	HNU 0.0	Mostly silty sand. Mottle noted w/streaks of yellow & orange periodically throughout sps.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 22.00	
SITE NAME : MAIN POST 2		LOGGER : K. VALENTI	
BORING ID : MP2-MW1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 19.440 surveyed		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
8	11			Silty sand, SM	BRN-DK GRY/BLK	SFT	SAT		HNU 0.0	Mostly silty sand. Mottle noted w/streaks of yellow & orange periodically throughout sps.
7	12		100	Silty sand, SM	LT GRAYISH BRN	LSE	SAT	3 5 7 8	HNU 0.0	
				Sandy silt, ML	DK GRAY TO BLK	LSE	MST		HNU 0.0	
6	13									
5	14		100	Sandy silt, ML	LT BROWN	SFT	WET	4 4 4 4	HNU 0.0	
				Elastic silt, MH	DK GRAY-BLACK	SFT	MST		HNU 0.0	Color is dk gray to black with green tint.
4	15									
3	16		100	Elastic silt, MH	DK GRAY - BLACK	SFT	MST	7 8 8 9	HNU 0.0	Same lithology as above interval.
				Silt, ML	DK GRAY-BLACK	FRM	MST		HNU 0.0	Dk gray to black. More consoidated. W.L. at 15' bgs.
2	17									
1	18		100	Elastic silt, MH	DK GRAY	FRM	SAT	3 3 5 10	HNU 0.0	Saturated 18-19.6. Clayey texture, very little sand
0	19									
				Silt with sand, ML	GREEN - DK GRAY	SFT	MST		HNU 0.0	
-1	20		100	Silt with sand, ML	GREEN-DK GRAY	LSE	WET	7 7 9 13	HNU 0.0	

 GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	22.00
SITE NAME :	MAIN POST 2	LOGGER :	K. VALENTI
BORING ID :	MP2-MW1	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/14/94
ELEVATION :	19.440 surveyed	DATE COMPLETED :	12/14/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silt with sand, ML	GREEN-DK GRAY	LSE	WET		HNU 0.0	
-1	21									
-2	22			Interval Not Sampled						Augered interval, TD of borehole 22.75.
-3	23									
-4	24									
-5	25									
-6	26									
-7	27									
-8	28									
-9	29									
-10	30									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP2-MW1	1	1	0.00	0.20	SPS		0	MF	80	20	0	0		NON	MOD	LSE	MST	
MP2-MW1	1	2	0.20	1.50	SPS		0	MF	100	0	0	0		NON	MOD	LSE	MST	
MP2-MW1	1	3	1.50	2.00	SPS		0		0	0	0	0						
MP2-MW1	2	1	2.00	4.00	SPS	F	10	MF	85	5	0	0		NON	MOD	LSE	MST	
MP2-MW1	3	1	4.00	4.40	SPS	F	5	MF	80	15	0	0		LOW	MOD	SFT	WET	
MP2-MW1	3	2	4.40	5.20	SPS		0	F	30	20	50	0		MOD	MOD	FRM	WET	
MP2-MW1	3	3	5.20	5.60	SPS		0	CM	100	0	0	0		NON	MOD	LSE	WET	
MP2-MW1	3	4	5.60	6.00	SPS		0	MF	70	20	10	0		LOW	POR	FRM	MST	
MP2-MW1	4	1	6.00	6.40	SPS	F	5	F	70	25	0	0		NON	POR	LSE	WET	
MP2-MW1	4	2	6.40	7.60	SPS		0		30	20	50	0		LOW	MOD	FRM	WET	
MP2-MW1	4	3	7.60	7.80	SPS		0	CM	100	0	0	0		NON	POR	LSE	WET	
MP2-MW1	4	4	7.80	8.00	SPS		0		30	20	50	0		MOD	MOD	SFT	WET	
MP2-MW1	5	1	8.00	8.80	SPS		0	MF	85	15	0	0		NON	MOD	LSE	WET	
MP2-MW1	5	2	8.80	10.00	SPS		0		50	40	10	0		LOW	POR	SFT	WET	
MP2-MW1	6	1	10.00	12.00	SPS		5		65	30	0	0		NON	POR	SFT	SAT	
MP2-MW1	7	1	12.00	12.60	SPS		0	FM	85	15	0	0		NON	MOD	LSE	SAT	
MP2-MW1	7	2	12.60	14.00	SPS		0		30	60	10	0		NON	MOD	LSE	MST	
MP2-MW1	8	1	14.00	14.60	SPS		0		40	50	10	0		LOW	POR	SFT	WET	
MP2-MW1	8	2	14.60	16.00	SPS		0	F	10	60	30	0		MOD	WEL	SFT	MST	
MP2-MW1	9	1	16.00	16.80	SPS		0		10	60	30	0		MOD	MOD	SFT	MST	
MP2-MW1	9	2	16.80	18.00	SPS		0		5	55	40	0		LOW	POR	FRM	MST	
MP2-MW1	10	1	18.00	19.60	SPS		0		10	45	45	0		MOD	WEL	FRM	SAT	
MP2-MW1	10	2	19.60	20.00	SPS		0		25	50	25	0		LOW	MOD	SFT	MST	
MP2-MW1	11	1	20.00	22.00	SPS		0		25	50	25	0		LOW	MOD	LSE	WET	
MP2-MW1	12	1	22.00	22.75	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : MP2-MW2 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/13/94 *END DATE :* 12/13/94

LOGGER/COMPANY : K. VALENTE

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 18.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 18.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	13.360
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32585

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

Moved original well location approx. 5' due S.E. of original staked location. MP2-MW-02 is a stickup well. Latitude-North 40 deg 18' 31.8"/Longitude-West: 74 deg 03' 18.9"

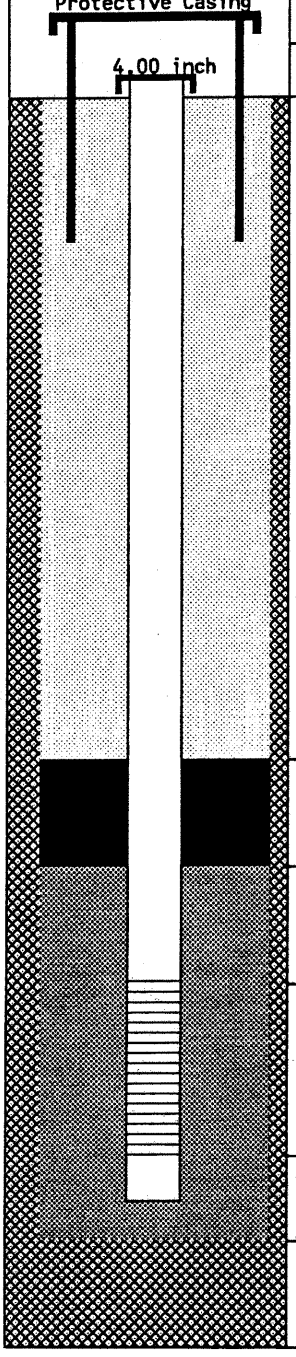
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 2	***INSPECTOR***	K. VALENTE

WELL ID	MP2-MW2
START DATE	12/13/94
COMPLETION DATE	12/13/94

WATER LEVELS



DEPTH		*ELEV.*
2.14	*TC*	15.50
0.00	*GS*	13.36
3.46	*BN*	9.90
5.46	*SP*	7.90
7.46	*SC*	5.90
17.00	*BS*	-3.64
17.00	*TD*	-3.64

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 7.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.14 ***ft.*** ***Protective Casing:*** 2.36 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 3.46 ***ft.***

Seal Type: BENTONITE ***Interval:*** 3.46 to 5.46 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 5.46 to 18.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 7.46 to 17.00 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 17.00 to 17.46 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/22/94
Method Surge blocking/overpump
Yield 2.5 gpm ***Purged Volume*** 90 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 18.00	
SITE NAME : MAIN POST AREA 2		LOGGER : K. VALENTE	
BORING ID : MP2-MW2		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/13/94	
ELEVATION : 13.360 surveyed		DATE COMPLETED : 12/13/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Sandy silt, ML	BROWN/DK BROWN	LSE	MST	7 13 19 15	HNU 0.0	0-1.1' topsoil/organics plant & root fragments
12	1			Sandy silt, ML	BROWN/DK BROWN	LSE	MST		HNU 0.0	Fill. Coal fragments present.
				No Sample Recovered						
11	2		50	Sandy silt, ML	GREEN GRAY	SFT	MST	13 8 6 7	HNU 0.0	Contents sharp based on color changes. Slight organic odor. Downward coarsening sequence.
10	3			No Sample Recovered						
9	4			No Sample Recovered				13 5 2 1		
8	5									
7	6		50	Fill	GREEN & BLACK			34 9 5 5	HNU 1.1	Fill. Possible roof shingles. Slight odor @ Approx. 6.5' bgs. Sample appears saturated.
6	7			No Sample Recovered						
5	8		50	Silty sand, SM	BROWN-GRAY	SFT	WET	23 12 8 10	HNU 0.0	Fill and debris with silty sand. Wood and paper debris present.
4	9			No Sample Recovered						
3	10			No Sample Recovered			WET	2 2 5 9	HNU 0.0	Organic odor in empty spoon. Water entering borehole at 8'10" bgs.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	18.00
SITE NAME :	MAIN POST AREA 2	LOGGER :	K. VALENTE
BORING ID :	MP2-MW2	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	13.360 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				No Sample Recovered			WET		HNU 0.0	Organic odor in empty spoon. Water entering borehole at 8'10" bgs.
2	11									
1	12		50	Elastic silt, MH	BROWN/DK GRAY	SFT	WET	5 3 2 2	HNU 0.0	Fill/uncertain. SPS filled with water.
0	13			No Sample Recovered						
-1	14		25	Silty sand, SM	GRAY BROWN	LSE	SAT	8 6 3 3	HNU 0.0	Fill. Recovery is slough.
				No Sample Recovered						
-2	15									
-3	16		100	Silty sand, SM	GRAY	LSE	SAT	4 5 9 14	HNU 0.0	16-17' slough.
-4	17			Other	TURQUOIS-GRAY	SFT	WET		HNU 0.0	Very soft silt clay material. Turquois-gray in color. Well set at 17' bgs. TD of borehole 18'bgs
-5	18									
-6	19									
-7	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP2-MW2	1	1	0.00	1.10	SPS		0	MF	30	60	2	8		NON	MOD	LSE	MST	
MP2-MW2	1	2	1.10	1.50	SPS	F	10		35	48	2	5		NON	POR	LSE	MST	
MP2-MW2	1	3	1.50	2.00	SPS		0		0	0	0	0						
MP2-MW2	2	1	2.00	3.00	SPS		5		25	60	10	0		NON	MOD	SFT	MST	
MP2-MW2	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP2-MW2	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP2-MW2	4	1	6.00	7.00	SPS		0		0	0	0	0						
MP2-MW2	4	2	7.00	8.00	SPS		0		0	0	0	0						
MP2-MW2	5	1	8.00	9.00	SPS		0	MF	60	40	0	0		NON	MOD	SFT	WET	
MP2-MW2	5	2	9.00	10.00	SPS		0		0	0	0	0						
MP2-MW2	6	1	10.00	12.00	SPS		0		0	0	0	0					WET	
MP2-MW2	7	1	12.00	13.00	SPS		0	F	10	70	20	0		MOD	WEL	SFT	WET	
MP2-MW2	7	2	13.00	14.00	SPS		0		0	0	0	0						
MP2-MW2	8	1	14.00	14.50	SPS		10		60	20	8	2		NON	POR	LSE	SAT	
MP2-MW2	8	2	14.50	16.00	SPS		0		0	0	0	0						
MP2-MW2	9	1	16.00	17.00	SPS		10		60	20	5	5		NON	POR	LSE	SAT	
MP2-MW2	9	2	17.00	18.00	SPS		0		20	20	60	0		LOW	MOD	SFT	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP2-MW3 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 12/13/94 END DATE : 12/13/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 15.60 ft. BGS
METHOD : HSA FLUID : WATER
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 15.60 ft. to 16.00 ft. BGS
METHOD : SPLIT SPOON FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVES
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	10.980
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : NJ 29 32586

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 35.5"
Longitude-West: 74 deg 03' 08.6"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

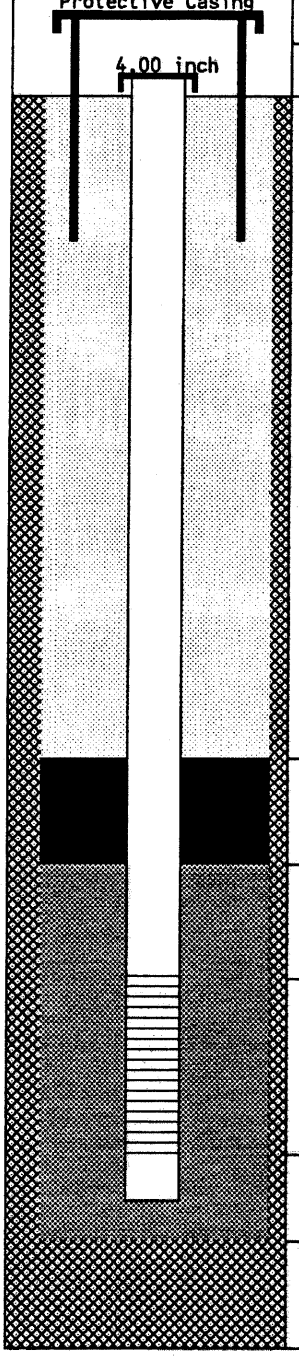
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 3	***INSPECTOR***	K. VALENTE

WELL ID	MP2-MW3
START DATE	12/13/94
COMPLETION DATE	12/13/94

WATER LEVELS



DEPTH		***ELEV.***
1.70	*TC*	12.63
0.00	*GS*	10.93
2.00	*BN*	8.93
4.60	*SP*	6.33
5.00	*SC*	5.93
15.14	*BS*	-4.21
15.00	*TD*	-4.07

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.70 ***ft.*** ***Protective Casing:*** 2.12 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 2.60 to 4.60 ***ft.***

Seal Type: BENTONITE ***Interval:*** 2.00 to 4.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 4.60 to 15.60 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 15.14 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 15.14 to 15.60 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/22/94
Method Surge blocking/overpump
Yield 2-3 gpm ***Purged Volume*** 225 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	16.00
SITE NAME :	MAIN POST AREA 3	LOGGER :	K. VALENTI
BORING ID :	MP2-MW3	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	10.980 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Poorly graded sand, SP	LT BROWN	LSE	MST	11 9 10 10	HNU 0.0	Fill. Medium to fine sand
9	1			Silty sand, SM	GRAYISH BROWN	FRM	MST		HNU 0.0	Fill. Slight organic odor Contains some organic debris and fragments of coal chips.
				No Sample Recovered						
8	2		50	Silty sand with gravel, SM	GRAYISH GREEN	FRM	MST	8 11 9 10	HNU 0.0	Fill with some organic debris, gravels and wood chips. Slight organic odor.
				Organic soil with sand	GRAYISH WHITE	LSE	MST		HNU 0.0	Fill. Organic debris & trash.
7	3			No Sample Recovered						
6	4		10	Fill		NA	NA	3 15 6 6	HNU 0.0	Fill with 2" of a few rock and wood, some trash
				No Sample Recovered						
5	5									
4	6		10	Fill	WHITE TAN	NA	NA	3 2 1 2	HNU 0.0	Fill includes 2" of trash debris & gravels (white-tan). Outside of spoon is dry.
				No Sample Recovered						
3	7									
2	8		20	Poorly graded sand, SP	GRAYISH GREEN	LSE	SAT	3 2 2 2	HNU 0.0	Fill. Organic odor present. Trash debris. Water at 8' bgs.
				No Sample Recovered						
1	9									
0	10		100	Fat clay, CH	DK BROWN	FRM	SAT	2 3 2 2	HNU 0.0	Fill/uncertain. Dk brown silty clay with organic debris, mild organic odor Recovery is saturated.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : MAIN POST AREA 3		LOGGER : K. VALENTI	
BORING ID : MP2-MW3		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/13/94	
ELEVATION : 10.980 surveyed		DATE COMPLETED : 12/13/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Fat clay, CH	DK BROWN	FRM	SAT		HNU 0.0	Fill/uncertain. Dk brown silty clay with organic debris, mild organic odor Recovery is saturated.
-1	11									
-2	12		50	Lean clay with sand, CL	GREENISH-GRAY	SFT	SAT	1 1 1 1	HNU 0.0	Mild organic odor. Very soft silt clay material.
-3	13			No Sample Recovered						
-4	14		75	Silty sand, SM	DK GRAY	SFT	SAT	4 3 4 6		Soft silty sand, dk gray. Similar lithology to previous spoon - more sand.
-5	15									
				No Sample Recovered						TD of borehole 16' bgs.
-6	16									
-7	17									
-8	18									
-9	19									
-10	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP2-MW3	1	1	0.00	1.00	SPS		0	MF	100	0	0	0		NON	WEL	LSE	MST	
MP2-MW3	1	2	1.00	1.50	SPS		0	F	80	20	0	0		NON	POR	FRM	MST	
MP2-MW3	1	3	1.50	2.00	SPS		0		0	0	0	0						
MP2-MW3	2	1	2.00	2.80	SPS		20		60	15	5	0		NON	POR	FRM	MST	
MP2-MW3	2	2	2.80	3.00	SPS		0		20	0	0	80		NON	POR	LSE	MST	
MP2-MW3	2	3	3.00	4.00	SPS		0		0	0	0	0						
MP2-MW3	3	1	4.00	4.20	SPS		0		0	0	0	0		NA	NA	NA	NA	
MP2-MW3	3	2	4.20	6.00	SPS		0		0	0	0	0						
MP2-MW3	4	1	6.00	6.20	SPS		0		0	0	0	0		NA	NA	NA	NA	
MP2-MW3	4	2	6.20	8.00	SPS		0		0	0	0	0						
MP2-MW3	5	1	8.00	8.40	SPS	C	5	F	95	0	0	0		NON	MOD	LSE	SAT	
MP2-MW3	5	2	8.40	10.00	SPS		0		0	0	0	0						
MP2-MW3	6	1	10.00	12.00	SPS		0		5	10	70	15		HGH	WEL	FRM	SAT	
MP2-MW3	7	1	12.00	13.00	SPS		0		20	20	60	0		LOW	MOD	SFT	SAT	
MP2-MW3	7	2	13.00	14.00	SPS		0		0	0	0	0						
MP2-MW3	8	1	14.00	15.50	SPS		0		60	35	5	0		NON	POR	SFT	SAT	
MP2-MW3	8	2	15.50	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP3-MW4 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/05/95 END DATE : 01/05/95

LOGGER/COMPANY :

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 23.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 23.00 ft. BGS
METHOD : HSA FLUID : WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	17.340
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : 29 32568

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 45.2"
Longitude-West: 74 deg 03' 09.3"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

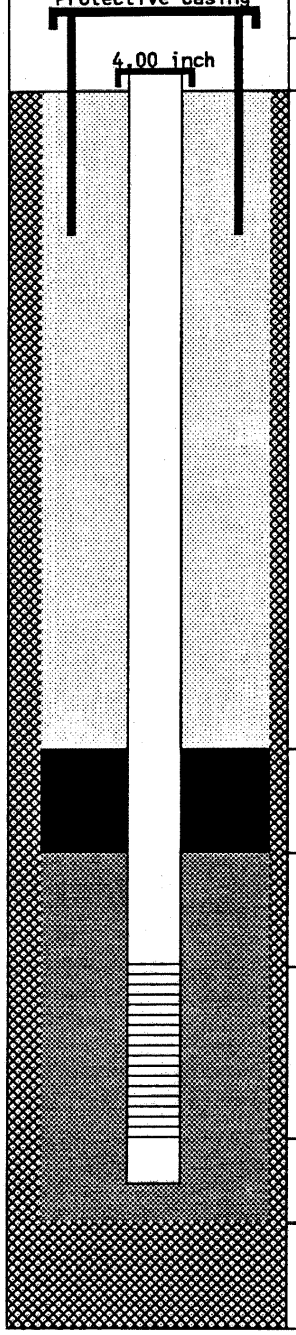
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 3	***INSPECTOR***	P. THOMAS

WELL ID	MP3-MW4
START DATE	01/05/95
COMPLETION DATE	01/05/95

WATER LEVELS



DEPTH		***ELEV.***
1.68	*TC*	19.02
0.00	*GS*	17.34
3.72	*BN*	13.62
6.72	*SP*	10.62
8.72	*SC*	8.62
23.26	*BS*	-5.92
23.00	*TD*	-5.66

DRILLING SUMMARY

Driller WELLINGTON REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 8.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.68 ***ft.*** ***Protective Casing:*** 2.36 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 3.72 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 3.72 to 6.72 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 6.72 to 23.72 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 8.72 to 23.26 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 23.26 to 23.72 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/12/95
Method Bailing/overpumping
Yield ~2 gpm ***Purged Volume*** 154 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 23.00	
SITE NAME : MAIN POST 3		LOGGER :	
BORING ID : MP3-MW4		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/05/95	
ELEVATION : 17.340 surveyed		DATE COMPLETED : 01/05/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	OLIVE GREEN	SFT	MST		OVM 0.0	0-0.2' bgs topsoil - grass and plant fragments
16	1			No Sample Recovered						
15	2		80	Silty sand, SM	OLIVE GREEN	SFT	MST		OVM 0.0	Coarsens downward.
14	3									
				No Sample Recovered						
13	4		60	Silty sand, SM	OLIVE GREEN	FRM	MST	16 19 38 31	OVM 0.0	Trace clay/gravel fragments.
12	5			No Sample Recovered						
11	6		75	Silty sand, SM	OLIVE GREEN	FRM	MST	5 12 14 15	OVM 0.0	
10	7			No Sample Recovered						
9	8		85	Silty sand, SM	OLIVE GREEN	FRM	MST	10 11 12 15	OVM 0.0	Trace gravel.
8	9			Silty sand, SM	BROWN/OLIVE GRN	SFT	MST		OVM 0.0	Slightly more clayey and moister than above. Dk olive green w/lt Fe color sediments.
				No Sample Recovered						
7	10		75	Silty sand, SM	DK OLIVE GREEN	SFT	WET	11 13 17 20	OVM 0.0	Sand w/clay matrix (similar to soils, found at MS locations)

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 23.00	
SITE NAME : MAIN POST 3		LOGGER :	
BORING ID : MP3-MW4		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/05/95	
ELEVATION : 17.340 surveyed		DATE COMPLETED : 01/05/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
6	11			Silty sand, SM	DK OLIVE GREEN	SFT	WET		OVM 0.0	Sand w/clay matrix (similar to soils, found at M5 locations)
				No Sample Recovered						
5	12		80	Silty sand, SM	DK OLIVE GREEN	LSE	WET	12 15 18 14	OVM 0.0	Sand w/clay matrix, slightly more sandy.
4	13									
				No Sample Recovered						
3	14		65	Silty sand, SM	DK OLIVE GREEN	LSE	WET	11 16 19 22	OVM 0.0	Water is apparant, but soil is not permeable. Sand in silt/clay matrix.
2	15									
				No Sample Recovered						
1	16		85	Silty sand, SM	DK OLIVE GREEN	LSE	SAT	9 10 15 20	OVM 0.0	Sat 16' bgs. Interval above is wet during low tide.
0	17									
				No Sample Recovered						
-1	18		95	Silty sand, SM	DK OLIVE GREEN	LSE	SAT	11 22 26 30	OVM 0.0	
-2	19									
-3	20			No Sample Recovered						

 GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	23.00
SITE NAME :	MAIN POST 3	LOGGER :	
BORING ID :	MP3-MW4	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/05/95
ELEVATION :	17.340 surveyed	DATE COMPLETED :	01/05/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			95	Silty sand, SM	DK OLIVE GREEN	LSE	SAT	12 19 29 31	OVM 0.0	
-3	21									
-4	22			No Sample Recovered Interval Not Sampled						Augered interval. Set well at 23' bgs.
-5	23									
-6	24									
-7	25									
-8	26									
-9	27									
-10	28									
-11	29									
-12	30									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP3-MW4	1	1	0.00	1.00	SPS		0	FM	50	40	5	5		NON	MOD	SFT	MST	
MP3-MW4	1	2	1.00	2.00	SPS		0		0	0	0	0						
MP3-MW4	2	1	2.00	3.60	SPS		0	MF	70	25	5	0		NON	MOD	SFT	MST	
MP3-MW4	2	2	3.60	4.00	SPS		0		0	0	0	0						
MP3-MW4	3	1	4.00	5.20	SPS		0	FM	70	25	5	0		NON	MOD	FRM	MST	
MP3-MW4	3	2	5.20	6.00	SPS		0		0	0	0	0						
MP3-MW4	4	1	6.00	7.50	SPS		0	FM	70	25	5	0		NON	MOD	FRM	MST	
MP3-MW4	4	2	7.50	8.00	SPS		0		0	0	0	0						
MP3-MW4	5	1	8.00	8.60	SPS		0	FM	70	25	5	0		NON	MOD	FRM	MST	
MP3-MW4	5	2	8.60	9.70	SPS		0	MF	55	40	5	0		NON	MOD	SFT	MST	
MP3-MW4	5	3	9.70	10.00	SPS		0		0	0	0	0						
MP3-MW4	6	1	10.00	11.50	SPS		0	MF	55	35	10	0		NON	MOD	SFT	WET	
MP3-MW4	6	2	11.50	12.00	SPS		0		0	0	0	0						
MP3-MW4	7	1	12.00	13.60	SPS		0	M	60	30	10	0		NON	MOD	LSE	WET	
MP3-MW4	7	2	13.60	14.00	SPS		0		0	0	0	0						
MP3-MW4	8	1	14.00	15.30	SPS		0	M	60	30	10	0		NON	MOD	LSE	WET	
MP3-MW4	8	2	15.30	16.00	SPS		0		0	0	0	0						
MP3-MW4	9	1	16.00	17.70	SPS		0	MF	60	30	10	0		NON	MOD	LSE	SAT	
MP3-MW4	9	2	17.70	18.00	SPS		0		0	0	0	0						
MP3-MW4	10	1	18.00	19.90	SPS		0	MF	60	30	10	0		NON	MOD	LSE	SAT	
MP3-MW4	10	2	19.90	20.00	SPS		0		0	0	0	0						
MP3-MW4	11	1	20.00	21.90	SPS		0		60	30	10	0		NON	MOD	LSE	SAT	
MP3-MW4	11	2	21.90	22.00	SPS		0		0	0	0	0						
MP3-MW4	12	1	22.00	23.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : MP3-MW5 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/09/95 *END DATE :* 01/09/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.43 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.43 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	11.280
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* 2932569

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Moved location due to high tension subsurface lines directly beneath original location. Latitude-North: 40 deg 18' 45.8"/Longitude-West: 74 deg 03' 14.6"

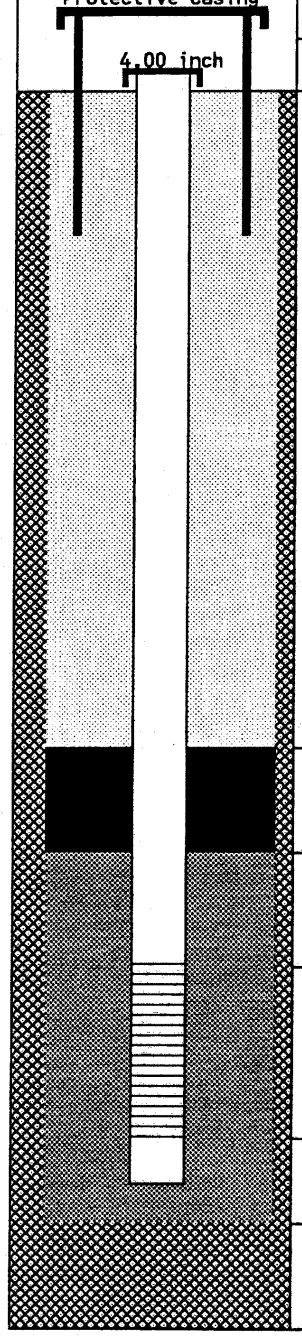
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 3	***INSPECTOR***	K. VALENTI

WELL ID	MP3-MW5
START DATE	01/09/95
COMPLETION DATE	01/09/95

WATER LEVELS



DEPTH		***ELEV.***
2.02	*TC*	13.30
0.00	*GS*	11.28
2.43	*BN*	8.85
4.43	*SP*	6.85
6.43	*SC*	4.85
15.97	*BS*	-4.69
16.00	*TD*	-4.72

DRILLING SUMMARY

Driller WELLINGTON REEVES
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 16.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.02 ***ft.*** ***Protective Casing:*** 2.14 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 2.43 ***ft.***

Seal Type: BENTONITE ***Interval:*** 2.43 to 4.43 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 4.43 to 16.43 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 6.43 to 15.97 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 15.97 to 16.43 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/12/95
Method Bailing/overpumping
Yield ~5 gpm ***Purged Volume*** 70 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.43	
SITE NAME : MAIN POST 3		LOGGER : K. VALENTI	
BORING ID : MP3-MW5		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/09/95	
ELEVATION : 11.280 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silty sand, SM	BROWN	SFT	MST	3 6 14 14	HNU 0.0	Top 4" bgs=topsoil. Cuttings @1.5' bgs black with v. slight petroleum odor (fill?).
10	1			No Sample Recovered						
9	2		50	Silty sand with gravel, SM	BLACK	LSE	MST	9 11 13 8	HNU 0.0	Uncertain/Fill? Black soil - very light petroleum product odor.
8	3			No Sample Recovered						
7	4			No Sample Recovered				9 2 1 2	HNU 0.0	Spoon was wet upon removal from borehole.
6	5									
5	6			No Sample Recovered				3 4 4 3		Spoon was wet. Cuttings wet at ~7' bgs. Fill consisted of film (for camera).
4	7									
3	8		20	Silty sand with gravel, SM	BLACK	LSE	SAT	4 3 3 3	HNU 0.0	Fill. Film coming up as cuttings. Very slight odor of petroleum products.
				No Sample Recovered						
2	9									
1	10			No Sample Recovered				2 2 2 2	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 16.43
SITE NAME : MAIN POST 3		LOGGER	: K. VALENTI
BORING ID : MP3-MW5		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: CME-55
EASTING : 0.0000 estimated		DATE STARTED	: 01/09/95
ELEVATION : 11.280 surveyed		DATE COMPLETED	: 01/09/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				No Sample Recovered					HNU 0.0	
0	11									
-1	12		15	Silty sand with gravel, SM	BLACK	LSE	SAT	5	HNU 0.0	Used 3" SPS. Same lith, as interval from 8-8.4' bgs.
				No Sample Recovered				4 6 8		
-2	13									
-3	14		15	Elastic silt, MH	BLACK	FRM	SAT	4	HNU 0.0	Used 3" sps. Set well at 16.43' bgs.
				No Sample Recovered				4 4 4		
-4	15									
-5	16			Interval Not Sampled						Augered interval, TD of borehole 16.43'.
-6	17									
-7	18									
-8	19									
-9	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP3-MW5	1	1	0.00	1.00	SPS		0		50	40	10	0		LOW	POR	SFT	MST	
MP3-MW5	1	2	1.00	2.00	SPS		0		0	0	0	0						
MP3-MW5	2	1	2.00	3.00	SPS		15		45	40	0	0		NON	POR	LSE	MST	
MP3-MW5	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP3-MW5	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP3-MW5	4	1	6.00	8.00	SPS		0		0	0	0	0						
MP3-MW5	5	1	8.00	8.40	SPS		20		50	30	0	0		NON	POR	LSE	SAT	
MP3-MW5	5	2	8.40	10.00	SPS		0		0	0	0	0						
MP3-MW5	6	1	10.00	12.00	SPS		0		0	0	0	0						
MP3-MW5	7	1	12.00	12.30	SPS		25		40	30	5	0		LOW	POR	LSE	SAT	
MP3-MW5	7	2	12.30	14.00	SPS		0		0	0	0	0						
MP3-MW5	8	1	14.00	14.30	SPS		0		0	65	35	0		HGH	WEL	FRM	SAT	
MP3-MW5	8	2	14.30	16.00	SPS		0		0	0	0	0						
MP3-MW5	9	1	16.00	16.43	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP3-MW6 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/11/95 *END DATE :* 01/11/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	10.250
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32570

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N *TYPE* *DEPTH*
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
No sampling, only installed well. Latitude-North: 40 deg 18' 48.4"/Longitude-West: 74 deg 03' 06.9".

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

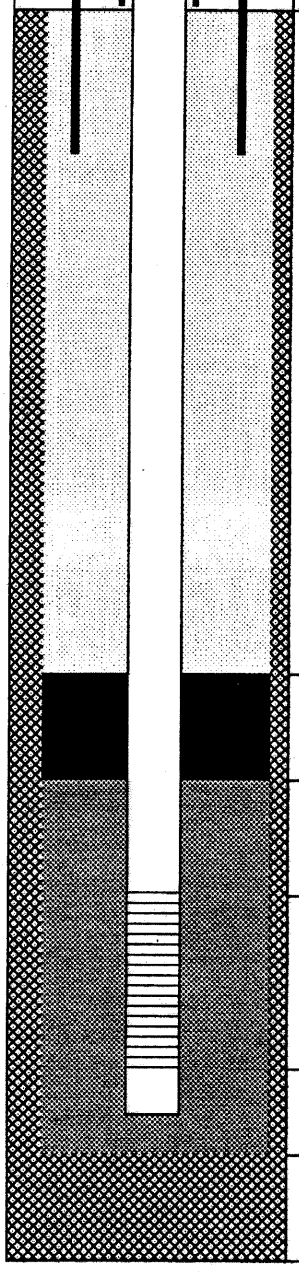
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 3	***INSPECTOR***	K. VALENTI

WELL ID	MP3-MW6
START DATE	01/11/95
COMPLETION DATE	01/11/95

WATER LEVELS



DEPTH		*ELEV.*
2.17	*TC*	12.42
0.00	*GS*	10.25
1.33	*BN*	8.92
3.33	*SP*	6.92
5.33	*SC*	4.92
14.87	*BS*	-4.62
15.00	*TD*	-4.75

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 15.00 ***ft.***
Type :

Stick Up Inner Casing: 2.17 ***ft.*** ***Protective Casing:*** 2.36 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.33 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.33 to 3.33 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.33 to 15.33 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.33 to 14.87 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.87 to 15.33 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/18/95
Method Surge blocking/overpump
Yield <.5 gpm ***Purged Volume*** 45 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST 3		LOGGER : K. VALENTI	
BORING ID : MP3-MW6		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME	
EASTING : 0.0000 estimated		DATE STARTED : 01/11/95	
ELEVATION : 10.250 surveyed		DATE COMPLETED : 01/11/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			20	Not Classified - Incomplete Data	BLACK	LSE	NA	8 6 5 5	HNU 0.0	Top 3" bgs consists of topsoil organics and landfill materials.
				No Sample Recovered						
9	1									
8	2			No Sample Recovered				2 2 2 3	HNU 0.0	
7	3									
6	4			No Sample Recovered				2 2 3 2	HNU 0.0	Switching to 3" dia. sps. Wood in SPS heal & spoon shoe. Cutting consists of wet blk gravelly sand ~6'
5	5									
4	6		50	Silty sand, SM	BROWN TO BLACK	FRM	WET	6 8 9 7	HNU 1.0	Fill 3" SPS used. Some orange (lt) Fe staining Water level at 6'4" bgs.
3	7			No Sample Recovered						
2	8		100	Silty sand, SM	GREEN	SFT	SAT	2 4 2 3	HNU 0.0	Fill.
1	9									
0	10		30	Silty sand, SM	GREEN	LSE	WET	1 1 2 3	HNU 0.0	Fill. Saturated sand & silt with fill material.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	MAIN POST 3	LOGGER :	K. VALENTI
BORING ID :	MP3-MW6	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME
EASTING :	0.0000 estimated	DATE STARTED :	01/11/95
ELEVATION :	10.250 surveyed	DATE COMPLETED :	01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GREEN	LSE	WET		HNU 0.0	Fill. Saturated sand & silt with fill material.
				No Sample Recovered						
-1	11									
-2	12		50	Silty sand, SM	GREEN	FRM	WET	11 11 13 15	HNU 0.0	Auger to 15' set well.
-3	13			No Sample Recovered						
-4	14			Interval Not Sampled						Augered interval.
-5	15									
-6	16									
-7	17									
-8	18									
-9	19									
-10	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP3-MW6	1	1	0.00	0.40	SPS		90		10	0	0	0		NA	NA	LSE	NA	
MP3-MW6	1	2	0.40	2.00	SPS		0		0	0	0	0						
MP3-MW6	2	1	2.00	4.00	SPS		0		0	0	0	0						
MP3-MW6	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP3-MW6	4	1	6.00	7.00	SPS		10		50	40	0	0		NON	POR	FRM	WET	
MP3-MW6	4	2	7.00	8.00	SPS		0		0	0	0	0						
MP3-MW6	5	1	8.00	10.00	SPS		0		50	35	15	0		LOW	MOD	SFT	SAT	
MP3-MW6	6	1	10.00	10.60	SPS		0		50	50	0	0		LOW	MOD	LSE	WET	
MP3-MW6	6	2	10.60	12.00	SPS		0		0	0	0	0						
MP3-MW6	7	1	12.00	13.00	SPS		0	MF	75	25	0	0		LOW	MOD	FRM	WET	
MP3-MW6	7	2	13.00	14.00	SPS		0		0	0	0	0						
MP3-MW6	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : MP4-MW7 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/14/94 *END DATE :* 12/14/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	14.830
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 029 32571

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 55.3"
Longitude-West: 74 deg 04' 54.5"

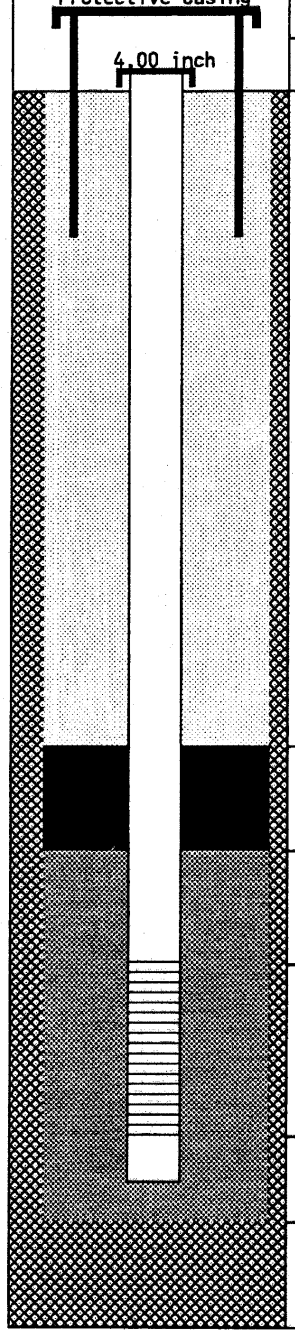
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 4	***INSPECTOR***	P. THOMAS

WELL ID	MP4-MW7
START DATE	12/14/94
COMPLETION DATE	12/14/94

WATER LEVELS



DEPTH		***ELEV.***
1.92	***TC***	16.75
0.00	***GS***	14.83
1.51	***BN***	13.32
4.01	***SP***	10.82
6.01	***SC***	8.82
15.55	***BS***	-0.72
15.50	***TD***	-0.67

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 6.01 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.92 ***ft.*** ***Protective Casing:*** 2.33 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.51 to 4.01 ***ft.***

Sand Pack Type : NO. 1 ***Interval:*** 4.01 to 16.01 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 6.01 to 15.55 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 15.55 to 16.01 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/22/94
Method Surge block/overpumping
Yield ~4 gpm ***Purged Volume*** 400 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : MAIN POST AREA 4		LOGGER : P. THOMAS	
BORING ID : MP4-MW7		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 14.830 surveyed		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			55	Sandy silt, ML	DK BROWN	SFT	MST	4 4 7 5	HNU 0.0	Topsoil.
				Poorly graded sand with silt, SP-SM	BROWN-RED	LSE	MST		HNU 0.0	Fine gravel to 0.5 feet bgs.
13	1			No Sample Recovered						
12	2		70	Poorly graded sand with silt, SP-SM	PALE BROWN	LSE	MST	8 8 8 10	HNU 0.0	
11	3			Silty sand, SM	ORANGE BROWN	SFT	MST		HNU 0.0	
				No Sample Recovered						
10	4		45	Silty sand, SM	OLIVE BROWN	SFT	MST	14 16 18 14	HNU 0.1	Sand with silt/clay lamina
9	5			No Sample Recovered						
8	6		75	Silty sand, SM	OLIVE & IRON BR	LSE	WET	10 17 16 12	HNU 0.0	SAT noted in cuttings ~7' bgs, sand w/silt and clay lamina: 7.1-7.3' (90% sand 10% silt) wet.
7	7			No Sample Recovered						
6	8		90	Silty sand, SM	OLIVE & FE BROW	SFT	SAT	8 5 9 7	HNU 1.0	Sand with silt/clay laminae.
5	9			No Sample Recovered						
4	10		45	Silty sand, SM	OLIVE BROWN	SFT	SAT	7 8 9 9	HNU 3.0	Small gravel laminae ~10.4' bgs.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 16.00
SITE NAME : MAIN POST AREA 4		LOGGER	: P. THOMAS
BORING ID : MP4-MW7		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: CME-55
EASTING : 0.0000 estimated		DATE STARTED	: 12/14/94
ELEVATION : 14.830 surveyed		DATE COMPLETED	: 12/14/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	OLIVE BROWN	SFT	SAT		HNU 3.0	Small gravel laminae ~10.4' bgs.
3	11			No Sample Recovered						
2	12		100	Silty sand, SM	OLIVE BROWN	SFT	SAT	11 20 17 14	HNU 1.0	Coarsening downward sequence into next spoon interval.
				Silty sand, SM	ST. BRN/OLV BRN	LSE	SAT		HNU 1.0	Sharp color change betw/ strong Fe oxide laminae (c. sand) interbedded w/ olive brown silt/clay.
1	13									
0	14		50	Poorly graded sand with silt, SP-SM	OLIVE BRN/FE BR	LSE	SAT	12 15 15 14	HNU 5.0	Set well 15.5' bgs.
-1	15			No Sample Recovered						
-2	16									
-3	17									
-4	18									
-5	19									
-6	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP4-MW7	1	1	0.00	0.45	SPS		0	FM	40	35	5	20		NON	NA	SFT	MST	
MP4-MW7	1	2	0.45	1.10	SPS	F	2	MF	85	13	0	0		NA	WEL	LSE	MST	
MP4-MW7	1	3	1.10	2.00	SPS		0		0	0	0	0						
MP4-MW7	2	1	2.00	3.00	SPS	F	2	MF	85	13	0	0		NA	WEL	LSE	MST	
MP4-MW7	2	2	3.00	3.40	SPS		0	MF	60	30	10	0		NON	WEL	SFT	MST	
MP4-MW7	2	3	3.40	4.00	SPS		0		0	0	0	0						
MP4-MW7	3	1	4.00	4.90	SPS		0	MF	80	15	5	0		NON	MOD	SFT	MST	
MP4-MW7	3	2	4.90	6.00	SPS		0		0	0	0	0						
MP4-MW7	4	1	6.00	7.50	SPS		0	MF	75	20	5	0		NON	MOD	LSE	WET	
MP4-MW7	4	2	7.50	8.00	SPS		0		0	0	0	0						
MP4-MW7	5	1	8.00	9.80	SPS		0	MF	80	15	5	0		NON	MOD	SFT	SAT	
MP4-MW7	5	2	9.80	10.00	SPS		0		0	0	0	0						
MP4-MW7	6	1	10.00	10.90	SPS	F	5	MF	75	15	5	0		NON	MOD	SFT	SAT	
MP4-MW7	6	2	10.90	12.00	SPS		0		0	0	0	0						
MP4-MW7	7	1	12.00	12.50	SPS		0	MF	80	15	5	0		NON	MOD	SFT	SAT	
MP4-MW7	7	2	12.50	14.00	SPS		0	MFC	80	15	5	0		NON	POR	LSE	SAT	
MP4-MW7	8	1	14.00	15.00	SPS		0	MCF	90	10	0	0		NA	MOD	LSE	SAT	
MP4-MW7	8	2	15.00	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP4-MW8 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/13/94 *END DATE :* 12/13/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 19.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 19.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	9.020
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32572

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 42.8"
Longitude-West: 74 deg 03' 02.9"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

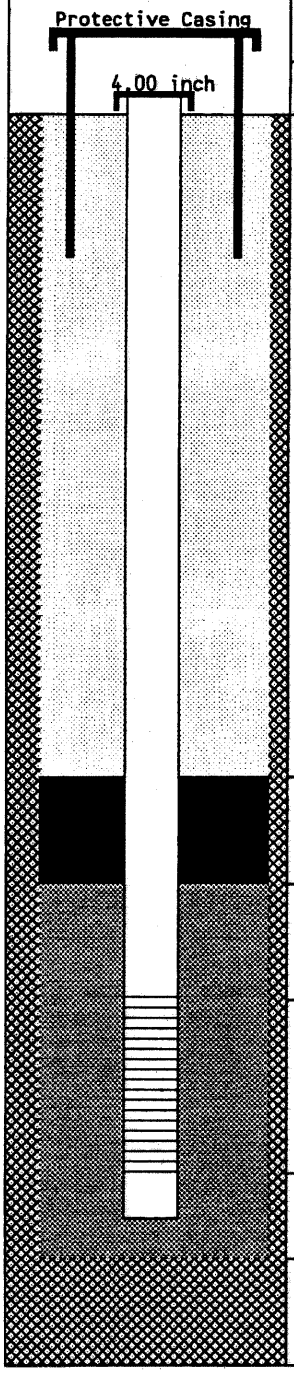
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 4	***INSPECTOR***	P. THOMAS

WELL ID	MP4-MW8
START DATE	12/13/94
COMPLETION DATE	12/13/94

WATER LEVELS



DEPTH		***ELEV.***
1.66	*TC*	10.68
0.00	*GS*	9.02
0.20	*BN*	8.82
1.64	*SP*	7.38
3.64	*SC*	5.38
18.18	*BS*	-9.16
19.00	*TD*	-9.98

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 3.64 ***ft.***
Type :

Stick Up Inner Casing: 1.66 ***ft.*** ***Protective Casing:*** 2.03 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.20 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.20 to 1.64 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 1.64 to 19.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 3.64 to 18.18 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 18.18 to 18.64 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/20/94
Method Surge block/overpumping
Yield 1 gpm ***Purged Volume*** 90 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	19.00
SITE NAME :	MAIN POST AREA 4	LOGGER :	P. THOMAS
BORING ID :	MP4-MW8	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	9.020 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			20	Organic soil, OL/OH	BROWN	SFT	MST	3 7 8 8	HNU 0.0	Topsoil grass roots/plant fragments.
				No Sample Recovered						
8	1									
7	2		27	Silt with sand, ML	RED BROWN	SFT	MST	8 8 14 18	HNU 0.0	Appears to be fill - bulk fragments 2-2.5' bgs (red)- rough drilling.
				No Sample Recovered						
6	3									
5	4		32	Silt with sand, ML	DK BRN/GRN BRN	SFT	MST	17 19 5 6	HNU 0.0	Appears to be fill. Plant root fragments.
				Well-graded gravel, GW	BROWN	LSE	DRY		HNU 0.0	Fill?
				No Sample Recovered						
4	5									
3	6		45	Poorly-graded gravel with sand, GP	BROWN-BEIGE	LSE	SAT	16 16 8 7	HNU 0.0	Uncertain - fill?
				No Sample Recovered						
2	7									
1	8			No Sample Recovered				9 4 3 3	HNU 0.0	Slough from above intervals.
0	9									
-1	10		95	Silty gravel with sand, GM	BROWN			4 2 1 6	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	19.00
SITE NAME :	MAIN POST AREA 4	LOGGER :	P. THOMAS
BORING ID :	MP4-MW8	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	9.020 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty gravel with sand, GM	BROWN				HNU 0.0	
				Organic soil, OL/OH	BROWN	SFT	MST		HNU 0.0	Plant/grass/root fragment
-1	11									
-2	12			No Sample Recovered						
			70	Organic soil, OL/OH	BROWN	SFT	MST	3 2 2 5	HNU 0.0	
				Sandy silt, ML	GRAY	SFT	MST		HNU 0.0	
-3	13			Silty sand, SM	LT GREEN	LSE	WET		HNU 0.0	
				No Sample Recovered						
-4	14		10	Well-graded gravel, GW	GRAY	LSE	SAT	6 5 5 6	HNU 0.0	Appears to be crushed concrete.
				No Sample Recovered						
-5	15									
-6	16		50	Silty sand, SM	GREEN	SFT	SAT	5 4 4 3	HNU 0.0	Sand and gravel (sat); gravel is rounded - augered to 19'.
-7	17			No Sample Recovered						
-8	18			Interval Not Sampled						Interval not sampled - set well at 19' bgs.
-9	19									
-10	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP4-MW8	1	1	0.00	0.40	SPS		0	F	10	35	5	50		NON	NA	SFT	MST	
MP4-MW8	1	2	0.40	2.00	SPS		0		0	0	0	0						
MP4-MW8	2	1	2.00	2.50	SPS		5	F	15	55	20	5		NON	POR	SFT	MST	
MP4-MW8	2	2	2.50	4.00	SPS		0		0	0	0	0						
MP4-MW8	3	1	4.00	4.50	SPS	F	5		15	70	10	0		NON	MOD	SFT	MST	
MP4-MW8	3	2	4.50	4.65	SPS	MCF	90	C	10	0	0	0		NA	POR	LSE	DRY	
MP4-MW8	3	3	4.65	6.00	SPS		0		0	0	0	0						
MP4-MW8	4	1	6.00	6.90	SPS	MFC	80	M	20	0	0	0		NA	MOD	LSE	SAT	
MP4-MW8	4	2	6.90	8.00	SPS		0		0	0	0	0						
MP4-MW8	5	1	8.00	10.00	SPS		0		0	0	0	0						
MP4-MW8	6	1	10.00	10.50	SPS	MFC	45	M	40	15	0	0						
MP4-MW8	6	2	10.50	11.90	SPS		0	F	10	25	5	60		NON	POR	SFT	MST	
MP4-MW8	6	3	11.90	12.00	SPS		0		0	0	0	0						
MP4-MW8	7	1	12.00	12.60	SPS		0	F	10	25	5	60		NON	POR	SFT	MST	
MP4-MW8	7	2	12.60	13.10	SPS		0	F	30	50	10	10		LOW	MOD	SFT	MST	
MP4-MW8	7	3	13.10	13.40	SPS		0	MF	70	25	5	0		NON	MOD	LSE	WET	
MP4-MW8	7	4	13.40	14.00	SPS		0		0	0	0	0						
MP4-MW8	8	1	14.00	14.20	SPS	MCF	90	CM	10	0	0	0		NA	POR	LSE	SAT	
MP4-MW8	8	2	14.20	16.00	SPS		0		0	0	0	0						
MP4-MW8	9	1	16.00	17.00	SPS	F	10	MCF	60	20	10	0		NON	MOD	SFT	SAT	
MP4-MW8	9	2	17.00	18.00	SPS		0		0	0	0	0						
MP4-MW8	10	1	18.00	19.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP4-MW9 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/13/94 *END DATE :* 12/13/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 24.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 24.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 22.00 ft. to 24.00 ft. BGS
METHOD : SPLIT SPOON SAMPLER *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	7.770
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32573

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 44.7"
Longitude-West: 74 deg 03' 02.6"

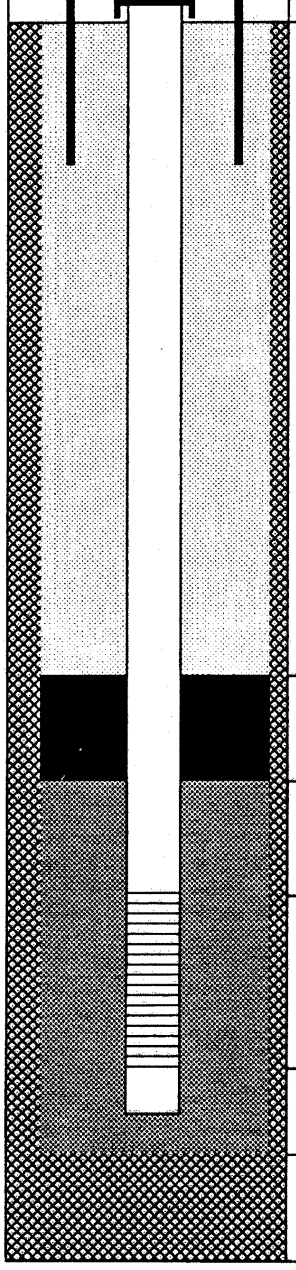
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 4	***INSPECTOR***	P. THOMAS

WELL ID	MP4-MW9
START DATE	12/13/94
COMPLETION DATE	12/13/94

WATER LEVELS



DEPTH		***ELEV.***
1.92	*TC*	9.69
0.00	*GS*	7.77
3.19	*BN*	4.58
5.69	*SP*	2.08
7.69	*SC*	0.08
22.23	*BS*	-14.46
22.00	*TD*	-14.23

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 7.76 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.92 ***ft.*** ***Protective Casing:*** 2.14 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 3.19 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 3.19 to 5.69 ***ft.***

Sand Pack Type : NO. 1 ***Interval:*** 5.69 to 24.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 7.69 to 22.23 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 22.23 to 22.69 ***ft.***
Backfill Type : NO. 1 SAND ***Interval:*** 22.69 to 24.00 ***ft.***

WELL DEVELOPMENT

Date 12/20/94
Method Surge block/overpumping
Yield 5 gpm ***Purged Volume*** 550 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface. Purge volume not measured.

NOTE: Well Diagram not to Scale ***Elevations are feet above mean sea level***

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	24.00
SITE NAME :	MAIN POST AREA 4	LOGGER :	P. THOMAS
BORING ID :	MP4-MW9	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	7.770 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silt with sand, ML	BROWN	SFT	MST	8 4 7 8	HNU 0.0	0-0.4 (topsoil), highly organic with plant/root fragments; 0.4-1.0 bgs - s. silt with tr. gravel
6	1			No Sample Recovered						
5	2		25	Silty sand with gravel, SM	BROWN	LSE	DRY	12 15 17 16	HNU 0.0	2-2.2 (same lithology as above interval).
				No Sample Recovered						
4	3									
3	4			No Sample Recovered				100 0 0 0		100/5" Split spoon refusal; no recovery.
2	5									
1	6			Interval Not Sampled						Interval not sampled due to refusal, redrilled at new location; resumed samp. 8-10 bgs, aug. 6-8'
0	7									
-1	8		100	Sandy silt, ML	GREEN GRAY	LSE	SAT	4 4 4 5	HNU 0.0	Perched water (?)
				Not Classified - Incomplete Data	BROWN	SFT	MST		HNU 0.0	Grass roots/fragments throughout interval.
-2	9			Sandy silt, ML	GRAY	SFT	MST		HNU 0.0	Silt organic.
-3	10		30	Silt with sand, ML	DK GRAY	SFT	MST	6 4 5 6	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 24.00	
SITE NAME : MAIN POST AREA 4		LOGGER : P. THOMAS	
BORING ID : MP4-MW9		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/13/94	
ELEVATION : 7.770 surveyed		DATE COMPLETED : 12/13/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silt with sand, ML	DK GRAY	SFT	MST		HNU 0.0	
				No Sample Recovered						
-3	11									
-4	12		70	Elastic silt, MH	GRAY	SFT	MST	2 3 4 4	HNU 0.0	Moist to wet with more clay.
-5	13			Silty gravel with sand, GM	GRAY	NA	SAT		HNU 0.0	
				No Sample Recovered						
-6	14		40	Silty sand, SM	GRAY	SFT	SAT	3 2 3 4	HNU 0.0	
				Silt with sand, ML	BROWN	SFT	WET		HNU 0.0	16.7-16.8 same as 16-16.4 The c.s. silt appears to be softer, possibly due to sat, moisture content.
				No Sample Recovered						
-7	15									
-8	16		15	Silty sand, SM	GRAY GREEN	LSE	MST	4 4 5 7	HNU 4.0	
				No Sample Recovered						
-9	17									
-10	18			No Sample Recovered					HNU 0.0	2' sat slough from above intervals.
-11	19									
-12	20		20	Silty sand, SM	FOREST GREEN	LSE	MST	3 4 5 5	HNU 5.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	24.00
SITE NAME :	MAIN POST AREA 4	LOGGER :	P. THOMAS
BORING ID :	MP4-MW9	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/13/94
ELEVATION :	7.770 surveyed	DATE COMPLETED :	12/13/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	FOREST GREEN	LSE	MST		HNU 5.0	
				No Sample Recovered						
-13	21									
-14	22		55	Sandy silt, ML	FOREST GREEN	SFT	SAT	3 4 4 5	HNU 4.5	Slt more compact; SAT in parts tight medium. Set well at 22' bgs. TD=24' bgs.
-15	23			No Sample Recovered						
-16	24									
-17	25									
-18	26									
-19	27									
-20	28									
-21	29									
-22	30									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP4-MW9	1	1	0.00	1.00	SPS	F	5	F	15	30	15	35		NON	MOD	SFT	MST	
MP4-MW9	1	2	1.00	2.00	SPS		0		0	0	0	0						
MP4-MW9	2	1	2.00	2.50	SPS	FM	35	MCF	45	20	0	0		NA	POR	LSE	DRY	
MP4-MW9	2	2	2.50	4.00	SPS		0		0	0	0	0						
MP4-MW9	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP4-MW9	4	1	6.00	8.00	NS		0		0	0	0	0						
MP4-MW9	5	1	8.00	8.40	SPS		0	FM	30	45	25	0		LOW	MOD	LSE	SAT	
MP4-MW9	5	2	8.40	8.80	SPS		0	F	15	20	5	60		NA	POR	SFT	MST	
MP4-MW9	5	3	8.80	10.00	SPS		0	F	30	50	10	10		LOW	MOD	SFT	MST	
MP4-MW9	6	1	10.00	10.60	SPS		0	F	20	50	20	10		LOW	MOD	SFT	MST	
MP4-MW9	6	2	10.60	12.00	SPS		0		0	0	0	0						
MP4-MW9	7	1	12.00	13.00	SPS		0	F	10	50	40	0		HGH	MOD	SFT	MST	
MP4-MW9	7	2	13.00	13.40	SPS	MFC	45	MFC	35	15	5	0		NA	POR	NA	SAT	
MP4-MW9	7	3	13.40	14.00	SPS		0		0	0	0	0						
MP4-MW9	8	1	14.00	14.40	SPS	FM	10	FM	45	35	10	0		LOW	POR	SFT	SAT	
MP4-MW9	8	2	14.40	14.80	SPS		0	F	20	30	10	40		LOW	POR	SFT	WET	
MP4-MW9	8	3	14.80	16.00	SPS		0		0	0	0	0						
MP4-MW9	9	1	16.00	16.30	SPS		0	MFC	75	20	5	0		NON	MOD	LSE	MST	
MP4-MW9	9	2	16.30	18.00	SPS		0		0	0	0	0						
MP4-MW9	10	1	18.00	20.00	SPS		0		0	0	0	0						
MP4-MW9	11	1	20.00	20.40	SPS		0	MF	50	45	5	0		NA	WEL	LSE	MST	
MP4-MW9	11	2	20.40	22.00	SPS		0		0	0	0	0						
MP4-MW9	12	1	22.00	23.10	SPS		0	MF	35	45	20	0		LOW	WEL	SFT	SAT	
MP4-MW9	12	2	23.10	24.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP5-MW10 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 12/14/94 END DATE : 12/14/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON, INC.
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	5.130
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : NJ 29 32574

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 48.6"
Longitude-West: 74 deg 03' 03.7"

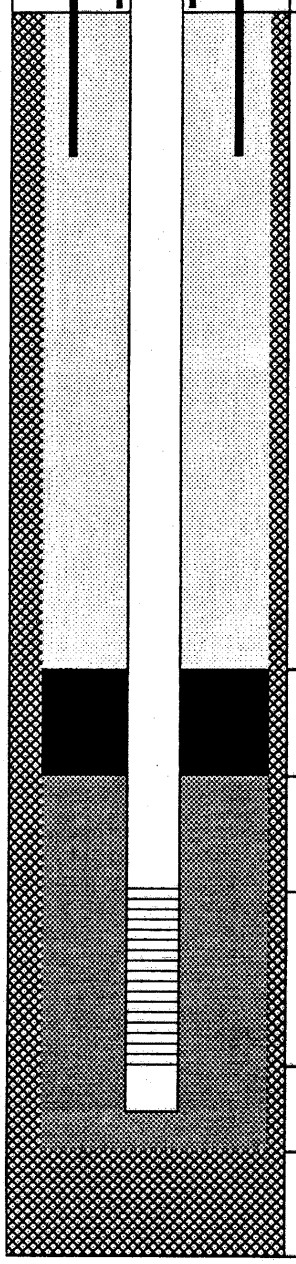
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 5	***INSPECTOR***	P. THOMAS

WELL ID	MP5-MW10
START DATE	12/14/94
COMPLETION DATE	12/14/94

WATER LEVELS



DEPTH		***ELEV.***
1.78	***TC***	6.91
0.00	***GS***	5.13
0.80	***BN***	4.33
3.00	***SP***	2.13
5.00	***SC***	0.13
14.54	***BS***	-9.41
15.00	***TD***	-9.87

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.78 ***ft.*** ***Protective Casing:*** 2.40 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.80 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.80 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 12/14/94
Method Surge blocking, bailing
Yield 5 gpm ***Purged Volume***

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : MAIN POST AREA 5		LOGGER : P. THOMAS	
BORING ID : MP5-MW10		DRILLING COMPANY : J.C. ANDERSON, INC.	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 5.130 surveyed		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			60	Sandy silt, ML	BROWN	SFT	MST	1 2 4 3	HNU 0.0	Topsoil
				Silty sand with gravel, SM					HNU 0.0	VAR orange-brown, black, charcoal fragments.
4	1			No Sample Recovered						
3	2		30	Fill		LSE	MST	2 1 1 1	HNU 0.0	Glass fragments/plastic cuttings, VAR - orange brown-black 2-2.4 2.4-2.6 blk sand.
				No Sample Recovered						
2	3									
1	4			No Sample Recovered					HNU 0.0	No recovery. Slough is SAT.
0	5									
-1	6			No Sample Recovered				1 1 1 1	HNU 0.0	Spoon sunk under weight of hammer. No recovery. SAT silty clay (organic rich) in spoon shoe.
-2	7									
-3	8		20	Silty sand, SM	GREEN (DKK)	LSE	SAT	1 1 2 1	HNU 0.1	Coarsens downward.
				No Sample Recovered						
-4	9									
-5	10		95	Silty sand with gravel, SM	DK GREEN	LSE	SAT	1 2 2 1	HNU 1.0	Gravel at 10.4 bgs.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : MAIN POST AREA 5		LOGGER : P. THOMAS	
BORING ID : MP5-MW10		DRILLING COMPANY : J.C. ANDERSON, INC.	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 5.130 surveyed		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand with gravel, SM	DK GREEN	LSE	SAT		HNU 1.0	Gravel at 10.4 bgs.
				Sandy elastic silt, MH	BROWN (GREEN)	SFT	SAT		HNU 1.0	Interbedded sand and clayey silt lamina - trace organics.
-5	11			Silty sand, SM	DK GREEN	LSE	SAT		HNU 1.0	
				No Sample Recovered						
-6	12		80	Clayey sand, SC	DK GREEN	SFT	SAT	2 1 1 1	HNU 1.0	Silt/clayey sand, qtz gravel.
-7	13									
				No Sample Recovered						
-8	14		90	Silty sand, SM	DK GREEN	SFT	SAT	2 1 2 1	HNU 0.1	Silt less clayey than above interval.
-9	15			Sandy silt, ML	BROWN-GREEN	SFT	SAT		HNU 0.1	Interbedded sand with silt/clay laminae. Set well at 15' bgs.
				No Sample Recovered						
-10	16									
-11	17									
-12	18									
-13	19									
-14	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP5-MW10	1	1	0.00	0.50	SPS		0	F	35	40	5	20		NON	MOD	SFT	MST	
MP5-MW10	1	2	0.50	1.20	SPS	F	15	MCF	50	30	5	0			POR			
MP5-MW10	1	3	1.20	2.00	SPS		0		0	0	0	0						
MP5-MW10	2	1	2.00	2.60	SPS	F	5	MCF	55	35	5	0		NON	POR	LSE	MST	
MP5-MW10	2	2	2.60	4.00	SPS		0		0	0	0	0						
MP5-MW10	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP5-MW10	4	1	6.00	8.00	SPS		0		0	0	0	0						
MP5-MW10	5	1	8.00	8.40	SPS	M	5	MCF	70	20	5	0		NON	MOD	LSE	SAT	
MP5-MW10	5	2	8.40	10.00	SPS		0		0	0	0	0						
MP5-MW10	6	1	10.00	10.50	SPS	FM	15	FCM	70	10	5	0		NON	POR	LSE	SAT	
MP5-MW10	6	2	10.50	11.30	SPS		0	MCF	45	35	18	2		MOD	POR	SFT	SAT	
MP5-MW10	6	3	11.30	11.90	SPS	F	5	MCF	50	35	10	0		NON	POR	LSE	SAT	
MP5-MW10	6	4	11.90	12.00	SPS		0		0	0	0	0						
MP5-MW10	7	1	12.00	13.60	SPS	F	10	MCF	60	10	20	0		LOW	MOD	SFT	SAT	
MP5-MW10	7	2	13.60	14.00	SPS		0		0	0	0	0						
MP5-MW10	8	1	14.00	14.95	SPS	F	10	MCF	60	20	10	0		LOW	MOD	SFT	SAT	
MP5-MW10	8	2	14.95	15.80	SPS	F	5	MCF	35	30	20	10		LOW	POR	SFT	SAT	
MP5-MW10	8	3	15.80	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP5-MW11 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/15/94 *END DATE :* 12/15/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	9.770
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32575

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 50.9"
Longitude-West: 74 deg 03' 01.8"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

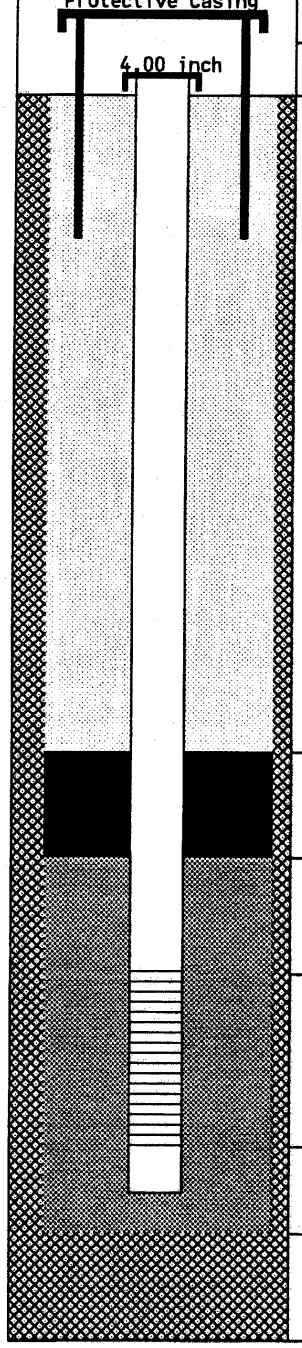
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA 5	***INSPECTOR***	P. THOMAS

WELL ID	MP5-MW11
START DATE	12/15/94
COMPLETION DATE	12/15/94

WATER LEVELS



DEPTH		*ELEV.*
1.93	*TC*	11.70
0.00	*GS*	9.77
0.80	*BN*	8.97
3.00	*SP*	6.77
5.00	*SC*	4.77
14.54	*BS*	-4.77
15.00	*TD*	-5.23

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	NONE
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.93 ***ft.*** ***Protective Casing:*** 2.44 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.80 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.80 to 3.00 ***ft.***

Sand Pack Type : NO. 1 SLURRY MORIE ***Interval:*** 3.00 to 5.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.85 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 14.54 to 15.00 ***ft.***

WELL DEVELOPMENT

Date	12/15/94
Method	Surge blocking/overpump
Yield	1.5 gpm ***Purged Volume*** 128 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/27/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST AREA 5		LOGGER : P. THOMAS	
BORING ID : MP5-MW11		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/15/94	
ELEVATION : 9.770 surveyed		DATE COMPLETED : 12/15/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			70	Silt with sand, ML	BROWN	SFT	MST	11 9	HNU 0.0	Topsoil
				Silty sand, SM	ORANGE	LSE	MST	10 12	HNU 0.0	
8	1			Sandy silt, ML	GRAY-BROWN	SFT	MST		HNU 0.0	Black mottles; charcoal fragments (?)- qtz gravel slt. micaceous.
				No Sample Recovered						
7	2		50	Poorly graded sand with silt, SP-SM	BROWN	LSE	MST	11 11 11 10	HNU 0.0	
6	3			No Sample Recovered						
5	4		60	Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	SAT	6 7 10 10	HNU 0.0	
4	5			No Sample Recovered						
3	6		85	Silty sand, SM	OLIVE BROWN/GRN	LSE	SAT	8 6 10 17	HNU 0.0	
2	7			Sandy silt, ML	GREEN/BROWN	SFT	SAT		HNU 0.0	
				No Sample Recovered						
1	8		90	Sandy silt, ML	GREEN/BROWN	SFT	SAT	10 15 18 20	HNU 0.0	Sand lenses (mottles) SAT clay mst/wet.
0	9									
				No Sample Recovered						
-1	10		80	Silty sand, SM	BROWN/GREEN	LSE	SAT	10 15 15 17	HNU 0.0	Interbedded sand - silt/ clay laninae.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST AREA 5		LOGGER : P. THOMAS	
BORING ID : MP5-MW11		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/15/94	
ELEVATION : 9.770 surveyed		DATE COMPLETED : 12/15/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	BROWN/GREEN	LSE	SAT		HNU 0.0	Interbedded sand - silt/ clay laminae.
-1	11									
				No Sample Recovered						
-2	12		95	Silty sand, SM	BROWN/GREEN	LSE	SAT	15 22 35 32	HNU 0.0	Interbedded sand/silt-clay laminae.
-3	13									
				Silty sand, SM	GREEN/BROWN	SFT	WET		HNU 0.0	Sharp content - compact (set) material.
-4	14			No Sample Recovered						
				Interval Not Sampled						Interval not sampled; set well at 15' bgs.
-5	15									
-6	16									
-7	17									
-8	18									
-9	19									
-10	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP5-MW11	1	1	0.00	0.20	SPS		0	F	15	40	5	40		NON	POR	SFT	MST	
MP5-MW11	1	2	0.20	0.90	SPS		0	MFC	80	15	0	0		NA	MOD	LSE	MST	
MP5-MW11	1	3	0.90	1.40	SPS		5	F	25	60	10	0		LOW	POR	SFT	MST	
MP5-MW11	1	4	1.40	2.00	SPS		0		0	0	0	0						
MP5-MW11	2	1	2.00	3.00	SPS		10	MFC	80	10	0	0		NA	MOD	LSE	MST	
MP5-MW11	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP5-MW11	3	1	4.00	5.20	SPS		5	MFC	85	10	0	0		NA	MOD	LSE	SAT	
MP5-MW11	3	2	5.20	6.00	SPS		0		0	0	0	0						
MP5-MW11	4	1	6.00	6.70	SPS		5	MFC	85	15	0	0		NA	MOD	LSE	SAT	
MP5-MW11	4	2	6.70	7.70	SPS		0	F	40	35	25	0		LOW	WEL	SFT	SAT	
MP5-MW11	4	3	7.70	8.00	SPS		0		0	0	0	0						
MP5-MW11	5	1	8.00	9.80	SPS		0	F	40	35	25	0		LOW	WEL	SFT	SAT	
MP5-MW11	5	2	9.80	10.00	SPS		0		0	0	0	0						
MP5-MW11	6	1	10.00	11.60	SPS		0	MFC	50	35	15	0		NON	MOD	LSE	SAT	
MP5-MW11	6	2	11.60	12.00	SPS		0		0	0	0	0						
MP5-MW11	7	1	12.00	13.50	SPS		0	MFC	65	25	10	0		NON	MOD	LSE	SAT	
MP5-MW11	7	2	13.50	13.90	SPS		0	MF	55	30	15	0		NON	MOD	SFT	WET	
MP5-MW11	7	3	13.90	14.00	SPS		0		0	0	0	0						
MP5-MW11	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : MP8-MW12 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/20/94 *END DATE :* 12/20/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	13.470
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32560

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 52.9"
Longitude-West: 74 deg 02' 58.3"

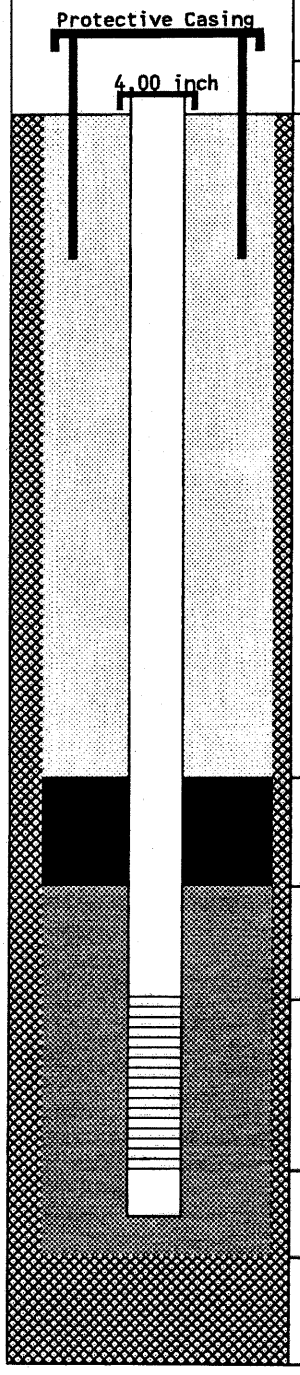
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 8	***INSPECTOR***	P. THOMAS

WELL ID	MP8-MW12
START DATE	12/20/94
COMPLETION DATE	12/20/94

WATER LEVELS



DEPTH		*ELEV.*
1.73	*TC*	15.20
0.00	*GS*	13.47
0.50	*BN*	12.97
3.00	*SP*	10.47
5.00	*SC*	8.47
14.54	*BS*	-1.07
15.00	*TD*	-1.53

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.73 ***ft.*** ***Protective Casing:*** 2.41 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 3.00 to 5.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : SAND NO. 1 ***Interval:*** 15.00 to 16.00 ***ft.***

WELL DEVELOPMENT

Date 01/05/95
Method Bailing/overpumping
Yield 3.5 gpm ***Purged Volume*** 115 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface

NOTE: Well Diagram not to Scale ***Elevations are feet above mean sea level***

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	16.00
SITE NAME :	MAIN POST 8	LOGGER :	P. THOMAS
BORING ID :	MP8-MW12	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/20/94
ELEVATION :	13.470 surveyed	DATE COMPLETED :	12/20/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			30	Silt with sand, ML	BROWN	SFT	MST	3 5 5 6	HNU 0.0	Topsoil.
				No Sample Recovered						
12	1									
11	2		45	Silty sand, SM	BROWN	SFT	MST	5 7 7 9	HNU 0.0	
				Poorly graded sand, SP	BROWN (FE)	LSE	DRY		HNU 0.0	
10	3			No Sample Recovered						
9	4		55	Poorly graded sand, SP	ORANGE BROWN	LSE	DRY	7 9 9 10	HNU 0.0	Trace qtz. gravel 4.9-5.1
8	5			No Sample Recovered						
7	6		55	Poorly graded sand, SP		LSE	WET	10 10 15 22	HNU 0.0	Wet at 7.0' bgs.
6	7			No Sample Recovered						
5	8		70	Poorly graded sand with silt, SP-SM	RED BROWN	LSE	SAT	12 15 16 19	HNU 0.0	
				Poorly graded sand, SP	GREEN	LSE	SAT		HNU 0.0	Trace qtz. gravel.
4	9									
				Poorly graded gravel, GP	FE BROWN	LSE	SAT		HNU 0.0	
				No Sample Recovered						
3	10		27	Poorly graded sand with silt, SP-SM	FE BROWN	LSE	SAT	23 28 29 28	HNU 0.0	Trace quartz gravel, fining downward sequence.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	16.00
SITE NAME :	MAIN POST 8	LOGGER :	P. THOMAS
BORING ID :	MP8-MW12	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/20/94
ELEVATION :	13.470 surveyed	DATE COMPLETED :	12/20/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	FE BROWN	LSE	SAT		HNU 0.0	Trace quartz gravel, fining downward sequence.
				No Sample Recovered						
2	11									
1	12		75	Poorly graded sand, SP	BROWN (OLIVE)	LSE	SAT	8 18 22 19	HNU 0.0	Note: 12.5-12.65 blk/brn var. lamina.
0	13									
				No Sample Recovered						
-1	14		47	Poorly graded sand with silt, SP-SM	FE BROWN	LSE	SAT	20 23	HNU 0.0	Trace qtz. gravel.
				Elastic silt with sand, MH	GREEN (DK)	SFT	WET	21 25	HNU 0.0	Fines downward into clay, well set at 15' bgs.
-2	15			No Sample Recovered						
-3	16									
-4	17									
-5	18									
-6	19									
-7	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP8-MW12	1	1	0.00	0.60	SPS		0	FM	25	40	5	30		NON	MOD	SFT	MST	
MP8-MW12	1	2	0.60	2.00	SPS		0		0	0	0	0						
MP8-MW12	2	1	2.00	2.70	SPS		0	FM	50	40	10	0		NON	MOD	SFT	MST	
MP8-MW12	2	2	2.70	2.90	SPS		0	M	95	5	0	0		NON	WEL	LSE	DRY	
MP8-MW12	2	3	2.90	4.00	SPS		0		0	0	0	0						
MP8-MW12	3	1	4.00	5.10	SPS		5	MF	90	5	0	0		NA	WEL	LSE	DRY	
MP8-MW12	3	2	5.10	6.00	SPS		0		0	0	0	0						
MP8-MW12	4	1	6.00	7.10	SPS		10	MF	85	5	0	0		NA	MOD	LSE	WET	
MP8-MW12	4	2	7.10	8.00	SPS		0		0	0	0	0						
MP8-MW12	5	1	8.00	8.40	SPS		0	MF	90	10	0	0		NON	WEL	LSE	SAT	
MP8-MW12	5	2	8.40	9.30	SPS		0	MF	95	5	0	0		NA	MOD	LSE	SAT	
MP8-MW12	5	3	9.30	9.50	SPS		0	MF	90	10	0	0		NON	MOD	LSE	SAT	
MP8-MW12	5	4	9.50	10.00	SPS		0		0	0	0	0						
MP8-MW12	6	1	10.00	10.55	SPS		0	MF	90	10	0	0		NON	MOD	LSE	SAT	
MP8-MW12	6	2	10.55	12.00	SPS		0		0	0	0	0						
MP8-MW12	7	1	12.00	13.50	SPS		5	MCF	90	5	0	0		NA	MOD	LSE	SAT	
MP8-MW12	7	2	13.50	14.00	SPS		0		0	0	0	0						
MP8-MW12	8	1	14.00	14.50	SPS		0	MCF	90	10	0	0		NON	MOD	LSE	SAT	
MP8-MW12	8	2	14.50	14.95	SPS		0	MCF	25	45	30	0		MOD	MOD	SFT	WET	
MP8-MW12	8	3	14.95	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP8-MW13 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/17/95 *END DATE :* 01/17/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVES
DRILL RIG TYPE : ATV

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	6.020
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32561

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 54.0"
Longitude-West: 74 deg 03' 04.8"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

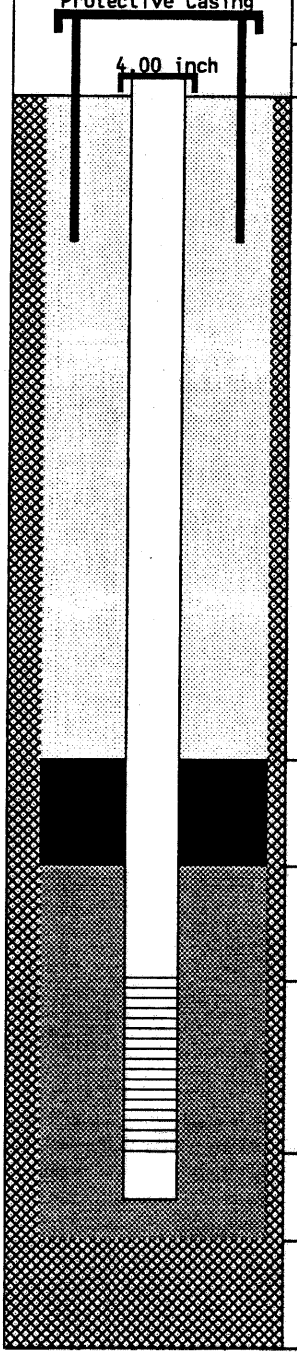
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA	***INSPECTOR***	P. THOMAS

WELL ID	MP8-MW13
START DATE	01/17/95
COMPLETION DATE	01/17/95

WATER LEVELS



DEPTH		*ELEV.*
1.78	*TC*	7.80
0.00	*GS*	6.02
1.00	*BN*	5.02
3.50	*SP*	2.52
5.00	*SC*	1.02
14.54	*BS*	-8.52
15.00	*TD*	-8.98

DRILLING SUMMARY

Driller	WELLS REEVES
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type :

Stick Up Inner Casing: 1.78 ***ft.*** ***Protective Casing:*** 2.21 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.00 to 3.50 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.50 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/25/95		
Method	Surge blocking,bailing		
Yield	4 gpm	***Purged Volume***	250 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	MAIN POST AREA	LOGGER :	P. THOMAS
BORING ID :	MP8-MW13	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV
EASTING :	0.0000 estimated	DATE STARTED :	01/17/95
ELEVATION :	6.020 surveyed	DATE COMPLETED :	01/17/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			40	Silty sand, SM	BROWN	LSE	WET	2 5 11	OVM 0.0	Fill. Large wood fragments; wires in drill cutting.
5	1			No Sample Recovered						
4	2		70	Sandy silt, ML	GRAY/BROWN	SFT	SAT	7 7 4 4	OVM 0.0	Fill. Coarsens downward; amber glass fragments throughout interval.
3	3			No Sample Recovered						
2	4			Sandy silt, ML	GRAY	SFT	SAT		OVM 0.0	Augered interval. Logged cuttings only - Fill.
1	5									
0	6									
-1	7									
-2	8		10	Sandy silt, ML	GRAY	SFT	SAT	2 1 3 2	OVM 0.0	Fill(?) Natural(?); slightly more gravelly.
				No Sample Recovered						
-3	9									
-4	10			Sandy silt, ML	GRAY	SFT	SAT		OVM 0.0	Fill(?) Natural(?) Augered interval. Logged cuttings only.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	MAIN POST AREA	LOGGER :	P. THOMAS
BORING ID :	MP8-MW13	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV
EASTING :	0.0000 estimated	DATE STARTED :	01/17/95
ELEVATION :	6.020 surveyed	DATE COMPLETED :	01/17/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Sandy silt, ML	GRAY	SFT	SAT		OVM 0.0	Fill(?) Natural(?) Augered interval. Logged cuttings only.
-4	11									
-5	12									
-6	13		60	Elastic silt with sand, MH	GRAYISH BROWN	SFT	SAT	8 5 2	OVM 0.0	Set well at 15' bgs. interval appeared to be natural material.
-7	14			No Sample Recovered						
-8	15									
-9	16									
-10	17									
-11	18									
-12	19									
-13	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP8-MW13	1	1	0.00	0.80	SPS	M	10	MF	50	15	5	20		NON	POR	LSE	WET	
MP8-MW13	1	2	0.80	2.00	SPS		0		0	0	0	0						
MP8-MW13	2	1	2.00	3.40	SPS	F	5	F	30	45	15	5		LOW	POR	SFT	SAT	
MP8-MW13	2	2	3.40	4.00	SPS		0		0	0	0	0						
MP8-MW13	3	1	4.00	8.00	CUT	F	5	F	30	45	15	5		LOW	POR	SFT	SAT	
MP8-MW13	4	1	8.00	8.20	SPS	F	10	F	25	45	15	5		LOW	POR	SFT	SAT	
MP8-MW13	4	2	8.20	10.00	SPS		0		0	0	0	0						
MP8-MW13	5	1	10.00	13.00	CUT	F	10	F	25	45	15	5		LOW	POR	SFT	SAT	
MP8-MW13	6	1	13.00	14.20	SPS		0	F	25	50	20	5		MOD	MOD	SFT	SAT	
MP8-MW13	6	2	14.20	15.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : MP8-MW14 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/16/95 *END DATE :* 01/16/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVES
DRILL RIG TYPE : ATV

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	12.880
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32562

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 58.3"
Longitude-West: 74 deg 03' 02.2"

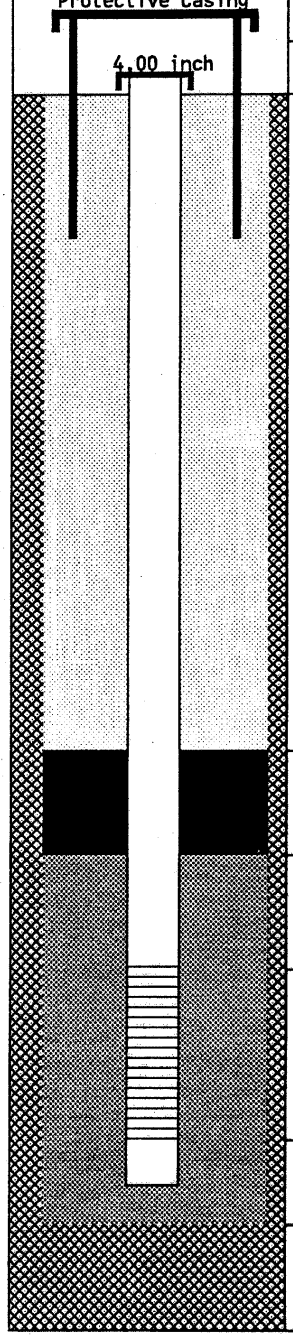
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	*DRILLING FIRM*	J.C. ANDERSON
SITE NAME	MAIN POST AREA	*INSPECTOR*	P. THOMAS

WELL ID	MP8-MW14
START DATE	01/16/95
COMPLETION DATE	01/16/95

WATER LEVELS



DEPTH		*ELEV.*
2.03	*TC*	14.91
0.00	*GS*	12.88
0.50	*BN*	12.38
3.00	*SP*	9.88
5.00	*SC*	7.88
14.54	*BS*	-1.66
15.00	*TD*	12.88

DRILLING SUMMARY

Driller WELLS REEVES
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 5.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.03 *ft.* *Protective Casing:* 2.43 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 0.50 *ft.*

Seal Type: BENTONITE SLURRY *Interval:* 0.50 to 3.00 *ft.*

Sand Pack Type : NO. 1 MORIE *Interval:* 3.00 to 15.00 *ft.*
Grain Size : UNIFORM *Median Diameter:*
Screen Diameter: 4.00 *Interval:* 5.00 to 14.54 *ft.*
Type : PVC *Slots:* 0.010 *inches*

Silt Trap Interval: 14.54 to 15.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date 01/25/95
Method Surge Block, Bailing
Yield .5 gpm *Purged Volume* 41 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/27/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST AREA		LOGGER : P. THOMAS	
BORING ID : MP8-MW14		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : ATV	
EASTING : 0.0000 estimated		DATE STARTED : 01/16/95	
ELEVATION : 12.880 surveyed		DATE COMPLETED : 01/16/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Silty sand, SM	BROWN	LSE	MST	13 11 8 8	OVM 0.0	Fill.
11	1			Sandy silt, ML	GRAY	SFT	MST		OVM 0.0	Fill. Large wood chip fragments.
				No Sample Recovered						
10	2		55	Sandy silt, ML	GRAY/OLIVE GRN	SFT	MST	8 7 8 6	OVM 0.0	Fill. Strong odor.
9	3			No Sample Recovered						
8	4			No Sample Recovered				4 1 2 1		
7	5									
6	6		40	Sandy silt, ML	GRAY	SFT	SAT	4 5 5 6	OVM 0.0	Fill. Large fragments of glass and wood found throughout interval.
5	7			Interval Not Sampled						
4	8		90	Sandy silt, ML	GRAY	SFT	SAT	4 3	OVM 0.0	
				Elastic silt with sand, MH	BROWN	SFT	SAT	4 2	OVM 0.0	
				Silty sand, SM	FOREST GREEN	LSE	SAT		OVM 0.0	
3	9			Silt with sand, ML	BROWN	SFT	SAT		OVM 0.0	
				No Sample Recovered						
2	10		50	Sandy silt, ML	GREY	SFT	SAT		OVM 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	MAIN POST AREA	LOGGER :	P. THOMAS
BORING ID :	MP8-MW14	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV
EASTING :	0.0000 estimated	DATE STARTED :	01/16/95
ELEVATION :	12.880 surveyed	DATE COMPLETED :	01/16/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Sandy silt, ML	GREY	SFT	SAT		OVM 0.0	
1	11			Interval Not Sampled						
0	12		95	Silt with sand, ML	BROWN	SFT	SAT	4 5 4 5	OVM 0.0	
-1	13			Silty sand, SM	GREEN	LSE	SAT		OVM 0.0	Backfill?
-2	14			Interval Not Sampled Interval Not Sampled						Augered interval. Set well at 15' bgs. TD of borehole is 15' bgs.
-3	15									
-4	16									
-5	17									
-6	18									
-7	19									
-8	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP8-MW14	1	1	0.00	1.20	SPS	M	5	MF	65	25	0	5		NA	MOD	LSE	MST	
MP8-MW14	1	2	1.20	1.50	SPS	M	5	FM	25	40	10	20		NON	MOD	SFT	MST	
MP8-MW14	1	3	1.50	2.00	SPS		0		0	0	0	0						
MP8-MW14	2	1	2.00	3.10	SPS		0	FM	40	45	15	0		NON	MOD	SFT	MST	
MP8-MW14	2	2	3.10	4.00	SPS		0		0	0	0	0						
MP8-MW14	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP8-MW14	4	1	6.00	6.80	SPS		0	FM	30	45	15	10		LOW	POR	SFT	SAT	
MP8-MW14	4	2	6.80	8.00	NS		0		0	0	0	0						
MP8-MW14	5	1	8.00	8.40	SPS		0		30	45	15	10		NON	POR	SFT	SAT	
MP8-MW14	5	2	8.40	8.70	SPS		0	F	20	50	20	10		MOD	MOD	SFT	SAT	
MP8-MW14	5	3	8.70	9.30	SPS	M	5	MFC	80	15	0	0		NA	POR	LSE	SAT	
MP8-MW14	5	4	9.30	9.80	SPS		0	F	20	50	20	10		LOW	MOD	SFT	SAT	
MP8-MW14	5	5	9.80	10.00	SPS		0		0	0	0	0						
MP8-MW14	6	1	10.00	11.00	SPS		0	FM	30	50	15	5		LOW	MOD	SFT	SAT	
MP8-MW14	6	2	11.00	12.00	NS		0		0	0	0	0						
MP8-MW14	7	1	12.00	13.20	SPS		0	MF	25	50	20	5		LOW	MOD	SFT	SAT	
MP8-MW14	7	2	13.20	13.90	SPS	M	5	MFC	60	30	5	5		NON	MOD	LSE	SAT	
MP8-MW14	7	3	13.90	14.00	NS		0		0	0	0	0						
MP8-MW14	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP8-MW15 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/17/95 *END DATE :* 01/17/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 18.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVES
DRILL RIG TYPE : ATV

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	5.010
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32563

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 57.9"
Longitude-West: 74 deg 02' 56.7"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

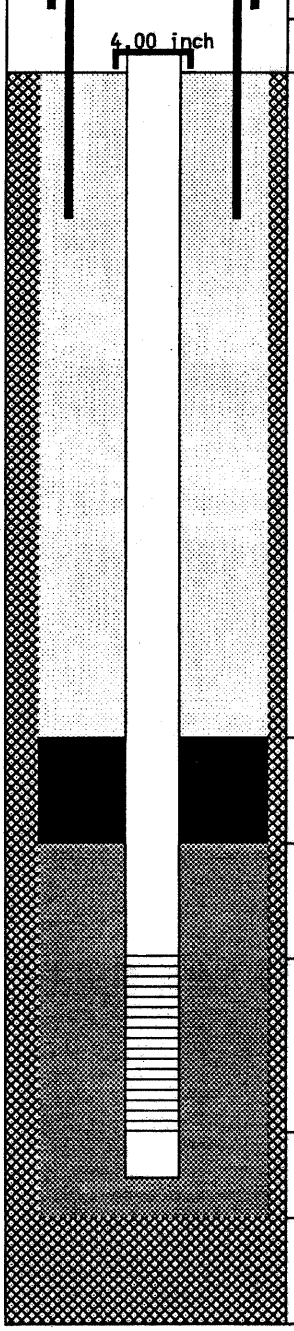
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA	***INSPECTOR***	P. THOMAS

WELL ID	MP8-MW15
START DATE	01/17/95
COMPLETION DATE	01/17/95

WATER LEVELS



DEPTH		*ELEV.*
2.00	*TC*	7.01
0.00	*GS*	5.01
1.00	*BN*	4.01
3.50	*SP*	1.51
5.00	*SC*	0.01
14.54	*BS*	-9.53
15.00	*TD*	-9.99

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.00 ***ft.*** ***Protective Casing:*** 2.34 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.00 to 3.50 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.50 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/25/95
Method Surge Blocking Overpump
Yield 2 gpm ***Purged Volume*** 120 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale ***Elevations are feet above mean sea level***

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 18.00	
SITE NAME : MAIN POST AREA		LOGGER : P. THOMAS	
BORING ID : MP8-MW15		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : ATV	
EASTING : 0.0000 estimated		DATE STARTED : 01/17/95	
ELEVATION : 5.010 surveyed		DATE COMPLETED : 01/17/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			30	Silty sand, SM	BROWN/BLACK	LSE	MST	7 9 18 11	OVM 0.0	Fill. Black mottles, concrete rubble bottom of spoon.
4	1			No Sample Recovered						
3	2			Interval Not Sampled					OVM 0.0	Auger refusal at 2' bgs. Moved location up 5' from original hole. Began spooning at 3' bgs.
2	3		30	Silty sand, SM	GRAY/BROWN	SFT	WET	7 5 50 0	OVM 0.0	Fill. Sat ~3.5-4' bgs, spoon refusal at 3.6' bgs Large wood fragments in bottom of spoon.
1	4		30	Not Classified - Incomplete Data						Interval not sampled - Augered to 5' bgs.
0	5			No Sample Recovered				18 5 1 1		Spoon is saturated.
-1	6									
-2	7		15	Silty sand, SM	GRAY	SFT	SAT	1 2 1 0	OVM 0.0	Fill(?) Gray sand with silt/clay and organics.
				No Sample Recovered						
-3	8									
-4	9			Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Logged cuttings only. Silty/clayey sand with trace gravel and organics.
-5	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 18.00	
SITE NAME : MAIN POST AREA		LOGGER : P. THOMAS	
BORING ID : MP8-MW15		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : ATV	
EASTING : 0.0000 estimated		DATE STARTED : 01/17/95	
ELEVATION : 5.010 surveyed		DATE COMPLETED : 01/17/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Logged cuttings only. Silty/clayey sand with trace gravel and organics.
-5	11									
-6	12									
-7	13		50	Silty sand, SM	DK GREEN	LSE	SAT	2	OVM 0.0	Set well at 15' bgs.
-8	14			No Sample Recovered						TD of hole 15' bgs.
-9	15									
-10	16									
-11	17									
-12	18									
-13	19									
-14	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP8-MW15	1	1	0.00	0.60	SPS	F	10	MF	55	20	5	10		NON	POR	LSE	MST	
MP8-MW15	1	2	0.60	2.00	SPS		0		0	0	0	0						
MP8-MW15	2	1	2.00	3.00	NS		0		0	0	0	0						
MP8-MW15	3	1	3.00	3.60	SPS	F	10	FM	50	25	10	5		NON	POR	SFT	WET	
MP8-MW15	4	1	3.60	5.00	SPS		0		0	0	0	0						
MP8-MW15	5	1	5.00	7.00	SPS		0		0	0	0	0						
MP8-MW15	5	1	7.00	7.30	SPS	F	5	MF	50	25	10	10		NON	POR	SFT	SAT	
MP8-MW15	5	2	7.30	9.00	SPS		0		0	0	0	0						
MP8-MW15	6	1	9.00	13.00	CUT	F	5	FM	55	25	10	5		NON	POR	SFT	SAT	
MP8-MW15	7	1	13.00	14.00	SPS		10	MF	70	20	0	0		NA	MOD	LSE	SAT	
MP8-MW15	7	2	14.00	15.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP12MW16 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/04/95 END DATE : 01/04/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA FLUID : WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	6.330
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : NJ 29 32576

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 48.7"
Longitude-West: 74 deg 02' 15.6"

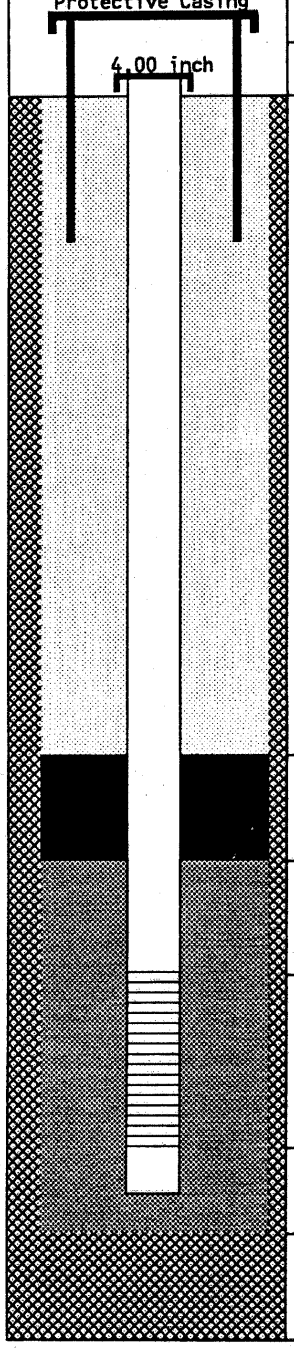
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	*DRILLING FIRM*	J.C. ANDERSON
SITE NAME	MAIN POST 12	*INSPECTOR*	P. THOMAS

WELL ID	MP12MW16
START DATE	01/04/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		*ELEV.*
2.02	*TC*	8.35
0.00	*GS*	6.33
0.50	*BN*	5.83
3.00	*SP*	3.33
4.50	*SC*	1.83
14.01	*BS*	-7.68
14.50	*TD*	-8.17

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 4.50 *ft.*
Type :

Stick Up Inner Casing: 2.02 *ft.* *Protective Casing:* 2.41 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 0.50 *ft.*

Seal Type: BENTONITE SLURRY *Interval:* 0.50 to 3.00 *ft.*

Sand Pack Type : NO. 1 SAND MORIE *Interval:* 3.00 to 14.50 *ft.*
Grain Size : UNIFORM *Median Diameter:*
Screen Diameter: 4.00 *Interval:* 4.50 to 14.01 *ft.*
Type : PVC *Slots:* 0.010 *inches*

Silt Trap Interval: 14.01 to 14.50 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date 01/16/95
Method Bailing, overpumping
Yield 0.5 gpm *Purged Volume* 59 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 12		LOGGER : P. THOMAS	
BORING ID : MP12MW16		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/04/95	
ELEVATION : 6.330 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			90	Silty sand, SM	OLIVE BROWN	LSE	WET	6 5 7 5	HNU 0.0	Fill, 0-0.2 topsoil, 0.2-0.3' dk brown charcoal gravel; sat. observed 1.5' bgs.
5	1									
				No Sample Recovered						
4	2		90	Silty sand, SM	OLIVE BROWN/BRN	LSE	SAT	3 2 5 3	HNU 0.0	
3	3									
				No Sample Recovered						
2	4		100	Silty sand, SM	BROWN	SFT	SAT	4 2 2 2	HNU 0.0	Interbedded sand with silt/and organics. differing % compositions.
1	5									
				Poorly graded sand with silt, SP-SM	STRONG PALE GRE	LSE	SAT		HNU 0.0	
0	6		65	Poorly graded sand with silt, SP-SM	GREEN	LSE	SAT	4 3 1 1	HNU 0.0	
-1	7									
				No Sample Recovered						
-2	8		50	Silty sand, SM	GREEN/BROWN/OLV	LSE	SAT	2 1 1 2	HNU 0.0	(Fill?) Iron stained with olive gray/green sand; 8-8.3 silt and organic zone.
-3	9			No Sample Recovered						
-4	10		60	Silty sand, SM	ORNG/FE DK BRN	SFT	SAT	5 5 5 4	HNU 0.0	Uncertain (fill?)

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 12		LOGGER : P. THOMAS	
BORING ID : MP12MW16		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/04/95	
ELEVATION : 6.330 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	ORNG/FE DK BRN	SFT	SAT		HNU 0.0	Uncertain (fill?)
-4	11			No Sample Recovered						
-5	12		85	Silty sand, SM	ORG/FE DK BRN	SFT	SAT	6 6 7 8	HNU 0.0	Fining downward interval. (Uncertain/fill).
-6	13			Silty sand, SM	DK BROWN	SFT	WET		HNU 0.0	Fill?
-7	14			No Sample Recovered Interval Not Sampled						Augered interval. Set well at 14.5' bgs. TD of borehole 145' bgs.
-8	15									
-9	16									
-10	17									
-11	18									
-12	19									
-13	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP12MW16	1	1	0.00	1.80	SPS		0	MFC	85	15	0	0		NA	MOD	LSE	WET	
MP12MW16	1	2	1.80	2.00	SPS		0		0	0	0	0						
MP12MW16	2	1	2.00	3.80	SPS		0	MFC	85	15	0	0		NA	MOD	LSE	SAT	
MP12MW16	2	2	3.80	4.00	SPS		0		0	0	0	0						
MP12MW16	3	1	4.00	5.50	SPS		0	MFC	80	20	0	0		NA	MOD	SFT	SAT	
MP12MW16	3	2	5.50	6.00	SPS		0	MFC	90	10	0	0		NA	MOD	LSE	SAT	
MP12MW16	4	1	6.00	7.30	SPS		0	MFC	90	10	0	0		NA	MOD	LSE	SAT	
MP12MW16	4	2	7.30	8.00	SPS		0		0	0	0	0						
MP12MW16	5	1	8.00	9.00	SPS		5	MFC	75	20	0	0		NA	MOD	LSE	SAT	
MP12MW16	5	2	9.00	10.00	SPS		0		0	0	0	0						
MP12MW16	6	1	10.00	11.20	SPS		0	MFC	78	20	2	0		NON	MOD	SFT	SAT	
MP12MW16	6	2	11.20	12.00	SPS		0		0	0	0	0						
MP12MW16	7	1	12.00	13.10	SPS		0	MF	70	25	5	0		NON	MOD	SFT	SAT	
MP12MW16	7	2	13.10	13.70	SPS		0	MF	60	30	10	0		NON	MOD	SFT	WET	
MP12MW16	7	3	13.70	14.00	SPS		0		0	0	0	0						
MP12MW16	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP12MW17 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/11/95 *END DATE :* 01/11/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	5.900
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32577

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 47.4"
Longitude-West: 74 deg 02' 19.2"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

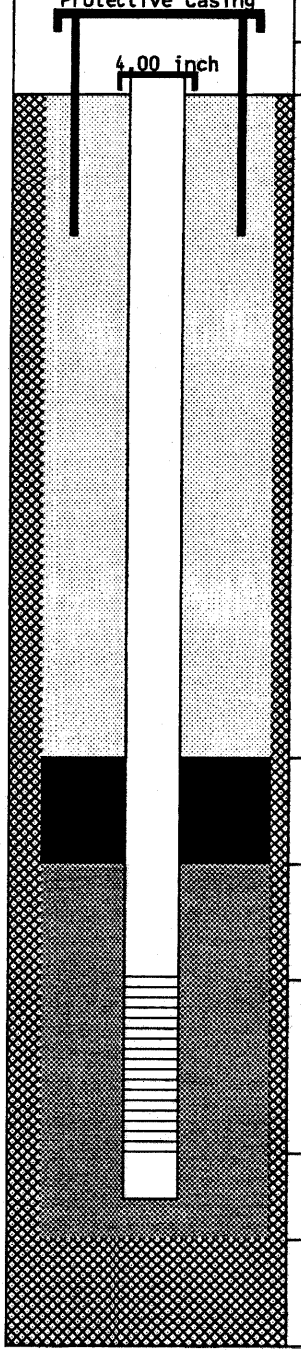
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 12	***INSPECTOR***	P. THOMAS

WELL ID	MP12MW17
START DATE	01/11/95
COMPLETION DATE	01/11/95

WATER LEVELS



DEPTH		*ELEV.*
1.97	*TC*	7.87
0.00	*GS*	5.90
0.50	*BN*	5.40
3.00	*SP*	2.90
4.50	*SC*	1.40
14.35	*BS*	-8.45
14.50	*TD*	-8.60

DRILLING SUMMARY

Driller	WELLINGTON REEVE
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.50 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.97 ***ft.*** ***Protective Casing:*** 2.34 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.35 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.35 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/17/95
Method	Bailing, overpumping
Yield	1.5 gpm

Purged Volume 120 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 12		LOGGER : P. THOMAS	
BORING ID : MP12MW17		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/11/95	
ELEVATION : 5.900 surveyed		DATE COMPLETED : 01/11/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			10	Sandy silt, ML	DK BRN/FE BRN	SFT	MST	2 3 3 2	OVM 0.0	Poor recovery - appears to be fill.
				No Sample Recovered						
4	1									
3	2			No Sample Recovered			SAT	2 1 1 1	OVM 0.0	Spoon was wet - possible fill recovered wood in drive shoe.
2	3									
1	4			No Sample Recovered				3 3 4 7		Recovered slough in spoon Possible saturated fill with fill gray roots (sat).
0	5									
-1	6		15	Sandy silt, ML	GREEN/BROWN	SFT	SAT	3 4 4 4	OVM 0.0	Slough (?). Sand with grass/tree roots.
				No Sample Recovered						
-2	7									
-3	8		25	Silty sand, SM	GRAY	SFT	SAT	8 10 4 3	OVM 0.0	Fill - grass roots etc. Poor recovery, slough.
				No Sample Recovered						
-4	9									
-5	10		20	Silty sand, SM	GRAY	SFT	SAT	2 2 4 4		Fill/slough?

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 12		LOGGER : P. THOMAS	
BORING ID : MP12MW17		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/11/95	
ELEVATION : 5.900 surveyed		DATE COMPLETED : 01/11/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT			Fill/slough?
				No Sample Recovered						
-5	11									
-6	12		100	Clayey sand, SC	GRAY	SFT	SAT	4 4 5 3		Sand with beds of clay/ silt organics.
-7	13									
-8	14			Interval Not Sampled						Augered interval - TD and set well 14.5' bgs.
-9	15									
-10	16									
-11	17									
-12	18									
-13	19									
-14	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP12MW17	1	1	0.00	0.20	SPS		10	FM	30	40	10	10		NON	POR	SFT	MST	
MP12MW17	1	2	0.20	2.00	SPS		0		0	0	0	0						
MP12MW17	2	1	2.00	4.00	SPS		0		0	0	0	0					SAT	
MP12MW17	3	1	4.00	6.00	SPS		0		0	0	0	0						
MP12MW17	4	1	6.00	6.30	SPS		10	MF	20	25	5	10		NON	POR	SFT	SAT	
MP12MW17	4	2	6.30	8.00	SPS		0		0	0	0	0						
MP12MW17	5	1	8.00	8.50	SPS		0	MF	50	20	20	10		LOW	POR	SFT	SAT	
MP12MW17	5	2	8.50	10.00	SPS		0		0	0	0	0						
MP12MW17	6	1	10.00	10.40	SPS		0	MF	50	20	20	10		NON	POR	SFT	SAT	
MP12MW17	6	2	10.40	12.00	SPS		0		0	0	0	0						
MP12MW17	7	1	12.00	14.00	SPS		0	MF	50	15	30	5		MOD	MOD	SFT	SAT	
MP12MW17	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : MP12MW18 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/11/95 *END DATE :* 01/11/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	4.780
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32578

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 49.7"
Longitude-West: 74 deg 02' 14.5"

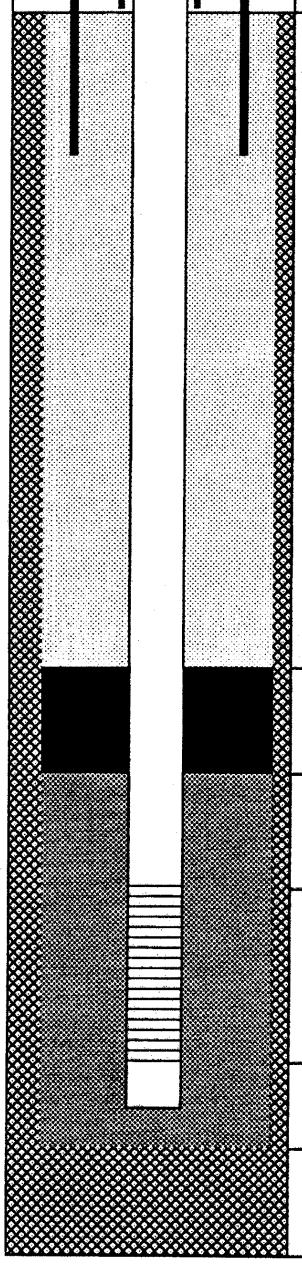
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 12	***INSPECTOR***	P. THOMAS

WELL ID	MP12MW18
START DATE	01/11/95
COMPLETION DATE	01/11/95

WATER LEVELS



DEPTH		***ELEV.***
1.84	*TC*	6.62
0.00	*GS*	4.78
0.50	*BN*	4.28
3.00	*SP*	1.78
4.50	*SC*	0.28
14.04	*BS*	-9.26
14.50	*TD*	-9.72

DRILLING SUMMARY

Driller WELLINGTON REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.50 ***ft.***
Type :

Stick Up Inner Casing: 1.84 ***ft.*** ***Protective Casing:*** 2.26 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.04 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/17/95
Method Surge blocking/bailing
Yield 0.5 gpm ***Purged Volume*** 45 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 12		LOGGER : P. THOMAS	
BORING ID : MP12MW18		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/11/95	
ELEVATION : 4.780 surveyed		DATE COMPLETED : 01/11/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			45	Sandy silt, ML	FE BROWN/GRAY	SFT	MST	3 3 3 4	OVM 1.0	Fill. Note: 0-0.2 topsoil
3	1			No Sample Recovered						
2	2		30	Silty sand, SM	GRAY/OLIVE GRN	LSE	SAT	3 4 3 3	OVM 0.0	Fill. Top 0-3' same lithology as noted above. Sheen observed in spoon.
				No Sample Recovered						
1	3									
0	4		50	Silty sand, SM	OLIVE GREEN	SFT	SAT	1 2 1 1	OVM 0.0	Sharp color change. Trace roots and plant fragments Sheen observed.
-1	5			No Sample Recovered						
-2	6		60	Silty sand, SM	OLIVE GREEN	LSE	SAT	1 1 2 4	OVM 0.0	
				Silty sand, SM	FE BROWN/GRAY	SFT	SAT		OVM 0.0	Iron (Fe) brown/gray interbedded laminae.
-3	7			No Sample Recovered						
-4	8		70	Silty sand, SM	FE BROWN/GRAY	SFT	SAT	4 2 4 5	OVM 0.0	Iron (Fe) brown/grey interbedded laminae.
-5	9			No Sample Recovered						
-6	10		80	Silty sand, SM	FE BROWN/GRAY	SFT	SAT	7 5 4 3	OVM 0.0	Slightly more clayey than above lithology. Clay pockets found throughout interval.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.50
SITE NAME :	MAIN POST 12	LOGGER :	P. THOMAS
BORING ID :	MP12MW18	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/11/95
ELEVATION :	4.780 surveyed	DATE COMPLETED :	01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	FE BROWN/GRAY	SFT	SAT		OVM 0.0	Slightly more clayey than above lithology. Clay pockets found throughout interval.
-6	11									
				No Sample Recovered						
-7	12		85	Silty sand, SM	FE BROWN/GRAY	SFT	SAT	5 2 5 4	OVM 0.0	
-8	13									
				No Sample Recovered						
-9	14			Interval Not Sampled						Augered interval. Set well at 14.5' bgs.
-10	15									
-11	16									
-12	17									
-13	18									
-14	19									
-15	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP12MW18	1	1	0.00	0.90	SPS		5	FM	25	50	10	10		NON	POR	SFT	MST	
MP12MW18	1	2	0.90	2.00	SPS		0		0	0	0	0						
MP12MW18	2	1	2.00	2.60	SPS		0	MF	85	15	0	0		NA	MOD	LSE	SAT	
MP12MW18	2	2	2.60	4.00	SPS		0		0	0	0	0						
MP12MW18	3	1	4.00	5.00	SPS		5	MF	70	20	0	5		NA	MOD	SFT	SAT	
MP12MW18	3	2	5.00	6.00	SPS		0		0	0	0	0						
MP12MW18	4	1	6.00	6.70	SPS		5	MF	70	20	0	5		NA	MOD	LSE	SAT	
MP12MW18	4	2	6.70	7.20	SPS		0	MF	70	25	5	0		NON	WEL	SFT	SAT	
MP12MW18	4	3	7.20	8.00	SPS		0		0	0	0	0						
MP12MW18	5	1	8.00	9.40	SPS		0	MF	70	25	5	0		NON	MOD	SFT	SAT	
MP12MW18	5	2	9.40	10.00	SPS		0		0	0	0	0						
MP12MW18	6	1	10.00	11.60	SPS		0	MF	70	20	10	0		NON	MOD	SFT	SAT	
MP12MW18	6	2	11.60	12.00	SPS		0		0	0	0	0						
MP12MW18	7	1	12.00	13.70	SPS		0	MF	70	20	10	0		NON	MOD	SFT	SAT	
MP12MW18	7	2	13.70	14.00	SPS		0		0	0	0	0						
MP12MW18	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP14MW19 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/04/95 *END DATE :* 01/04/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 15.00 ft. to 16.00 ft. BGS
METHOD : SPLIT SPOON *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	7.980
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32579

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude North: 40 deg 18' 47.3"
Longitude West: 74 deg 02' 20.7"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

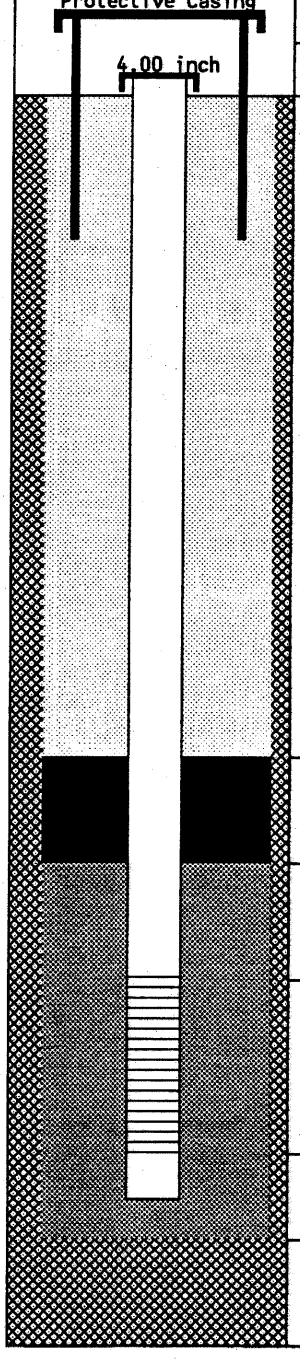
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 14	***INSPECTOR***	P. THOMAS

WELL ID	MP14MW19
START DATE	01/04/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		***ELEV.***
1.70	*TC*	9.68
0.00	*GS*	7.98
0.50	*BN*	7.48
3.50	*SP*	4.48
5.00	*SC*	2.98
14.54	*BS*	-6.56
15.00	*TD*	-7.02

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.70 ***ft.*** ***Protective Casing:*** 2.49 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.50 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 3.50 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/16/95
Method Bailing, overpumping
Yield 7 gpm ***Purged Volume*** 345 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	16.00
SITE NAME :	MAIN POST 14	LOGGER :	P. THOMAS
BORING ID :	MP14MW19	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/04/95
ELEVATION :	7.980 surveyed	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
6	1		70	Silty sand, SM	OLIVE BROWN	LSE	MST	4 3 3 4	HNU 0.0	Fill. 0-0.4 topsoil.
				No Sample Recovered						
5	2		30	Fill	GRAY		WET	10 11 8 9		Broken charcoal fragments (?).
				No Sample Recovered						
4	3									
3	4		10	Silty sand, SM	GRAY	SFT	SAT	3 2 5 5	HNU 0.0	Slough (?).
				No Sample Recovered						
2	5									
1	6		25	Fill	GRAY/WHITE			5 5 6 9	HNU 0.0	Fill with glass fragments
				No Sample Recovered						
0	7									
-1	8			No Sample Recovered						No recovery. Spoon sat.
-2	9									
-3	10		100	Silty sand, SM	GRAY		SAT	2 1 1 2	HNU 0.0	Uncertain/fill?

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : MAIN POST 14		LOGGER : P. THOMAS	
BORING ID : MP14MW19		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/04/95	
ELEVATION : 7.980 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY		SAT		HNU 0.0	Uncertain/fill?
-3	11									
-4	12		100	Silty sand, SM	GRAY	SFT	SAT	1 1 1 1	HNU 0.0	Probably fill.
-5	13									
-6	14		100	Silty sand, SM	GRAY	SFT	SAT		HNU 0.0	Probably fill. Set well at 15' bgs: wood fragments found in drive shoe.
-7	15									
-8	16									
-9	17									
-10	18									
-11	19									
-12	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP14MW19	1	1	0.00	1.40	SPS		0	MF	60	30	0	10		NA	POR	LSE	MST	
MP14MW19	1	2	1.40	2.00	SPS		0		0	0	0.	0						
MP14MW19	2	1	2.00	2.60	SPS		0		0	0	0	0					WET	
MP14MW19	2	2	2.60	4.00	SPS		0		0	0	0	0						
MP14MW19	3	1	4.00	4.20	SPS		5	MF	55	30	10	0		NON	POR	SFT	SAT	
MP14MW19	3	2	4.20	6.00	SPS		0		0	0	0	0						
MP14MW19	4	1	6.00	6.50	SPS		0		0	0	0	0						
MP14MW19	4	2	6.50	8.00	SPS		0		0	0	0	0						
MP14MW19	5	1	8.00	10.00	SPS		0		0	0	0	0						
MP14MW19	6	1	10.00	12.00	SPS		0	MFC	60	30	10	0					SAT	
MP14MW19	7	1	12.00	14.00	SPS		0	MFC	60	30	10	0		NON	MOD	SFT	SAT	
MP14MW19	8	1	14.00	16.00	SPS		0	MFC	60	30	10	0		NON	MOD	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : MP14MW20 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/04/94 *END DATE :* 01/04/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) :

TOTAL DEPTH : 14.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	7.430
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32580

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 50.2"
Longitude-West: 74 deg 02' 19.8"

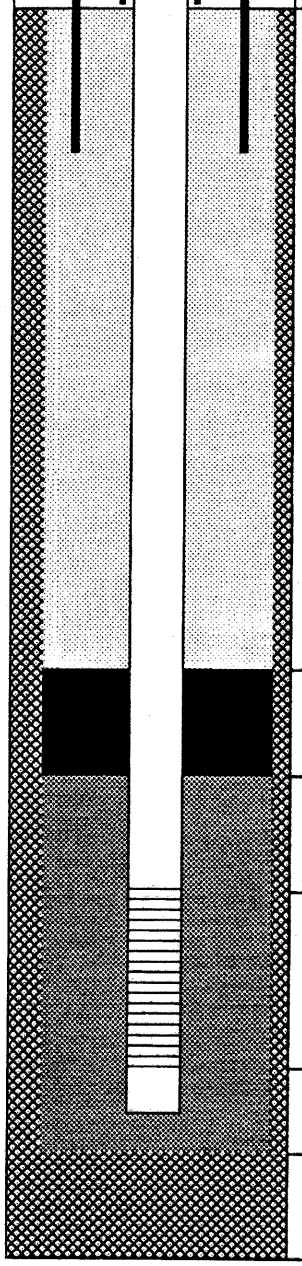
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 14	***INSPECTOR***	K. VALENTI

WELL ID	MP14MW20
START DATE	01/04/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		ELEV.
1.86	TC	9.29
0.00	GS	7.43
1.00	BN	6.43
3.00	SP	4.43
4.50	SC	2.93
14.04	BS	-6.61
14.50	TD	-7.07

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 14.50 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.86 ***ft.*** ***Protective Casing:*** 2.34 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.05 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/13/95
Method Surge blocking/bailing
Yield .5 gpm ***Purged Volume*** 61 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	MAIN POST 14	LOGGER :	K. VALENTI
BORING ID :	MP14MW20	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/04/94
ELEVATION :	7.430 surveyed	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Sandy silt, ML	DK BROWN	SFT	DRY	3 5 6 5	HNU 2.0	Dk brown to black sandy silt. 1st 3" topsoil.
6	1			No Sample Recovered						
5	2		40	Silty sand with gravel, SM	BLACK	LSE	DRY	3 3 3 4	HNU 0.0	Sand & gravel, little silt.
4	3			No Sample Recovered						
3	4		100	Elastic silt, MH	BLACK	FRM	WET	1 1 1 1	HNU 0.0	Uncertain, Wet outside of spoon at 4.5' bgs. Clayey silt containing roots.
2	5									
1	6		100	Elastic silt, MH	GREEN	FRM	SAT		HNU 0.0	Uncertain.
0	7									
-1	8		30	Elastic silt, MH	GREEN	SFT	SAT	1 1 2 1	HNU 0.0	Uncertain
-2	9			No Sample Recovered						
-3	10		100	Elastic silt with sand, MH	GREEN	SFT	SAT	1 1 1 1	HNU 0.0	Uncertain

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 14.00
SITE NAME : MAIN POST 14		LOGGER	: K. VALENTI
BORING ID : MP14MW20		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: CME-55
EASTING : 0.0000 estimated		DATE STARTED	: 01/04/94
ELEVATION : 7.430 surveyed		DATE COMPLETED	: 01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Elastic silt with sand, MH	GREEN	SFT	SAT		HNU 0.0	Uncertain
-3	11									
-4	12		100	Silt with sand, ML	DK GREEN BLK	FRM	SAT	3 6 7	HNU 0.0	Possible confining layer. TD of borehole 14' bgs.
-5	13									
-6	14									
-7	15									
-8	16									
-9	17									
-10	18									
-11	19									
-12	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP14MW20	1	1	0.00	1.00	SPS		0		40	60	0	0		NON	POR	SFT	DRY	
MP14MW20	1	2	1.00	2.00	SPS		0		0	0	0	0						
MP14MW20	2	1	2.00	2.80	SPS		40		40	20	0	0		NA	POR	LSE	DRY	
MP14MW20	2	2	2.80	4.00	SPS		0		0	0	0	0						
MP14MW20	3	1	4.00	6.00	SPS		0		0	50	20	30		HGH	NA	FRM	WET	
MP14MW20	4	1	6.00	8.00	SPS		0		0	40	30	30		HGH	NA	FRM	SAT	
MP14MW20	5	1	8.00	8.60	SPS		0		10	75	15	0		MOD	NA	SFT	SAT	
MP14MW20	5	2	8.60	10.00	SPS		0		0	0	0	0						
MP14MW20	6	1	10.00	12.00	SPS		0		25	60	15	0		HGH	NA	SFT	SAT	
MP14MW20	7	1	12.00	14.00	SPS		0		20	80	0	0		NON	POR	FRM	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP14MW21 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/04/95 *END DATE :* 01/04/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 18.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 16.00 ft. to 18.00 ft. BGS
METHOD : SPLIT SPOON *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	7.500
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32581

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 50.6"
Longitude-West: 74 deg 02' 14.0"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

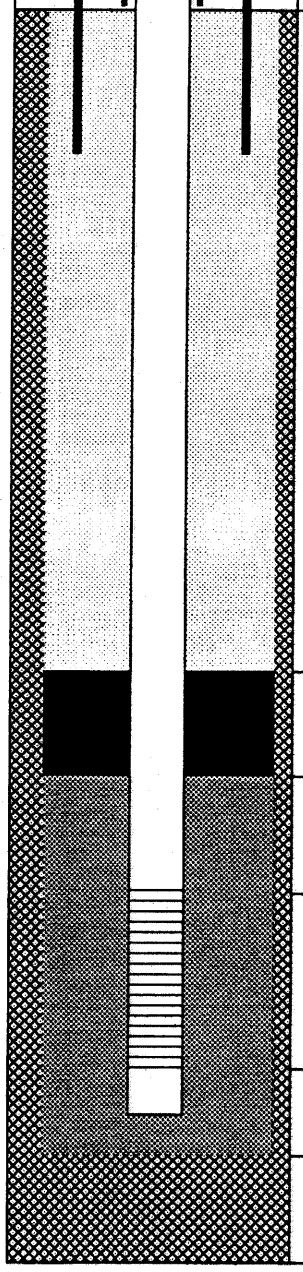
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 14	***INSPECTOR***	P. THOMAS

WELL ID	MP14MW21
START DATE	01/04/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		*ELEV.*
2.07	*TC*	9.57
0.00	*GS*	7.50
1.00	*BN*	6.50
4.00	*SP*	3.50
6.00	*SC*	1.50
15.54	*BS*	-8.04
16.00	*TD*	-8.50

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 6.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.07 ***ft.*** ***Protective Casing:*** 2.28 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.00 to 4.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 4.00 to 16.00 ***ft.***
Grain Size : ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 6.00 to 15.54 ***ft.***
Type : ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 15.54 to 16.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/13/95
Method Surge blocking/overpump
Yield 0.5 gpm ***Purged Volume*** 78 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 18.00	
SITE NAME : MAIN POST 14		LOGGER : P. THOMAS	
BORING ID : MP14MW21		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/04/95	
ELEVATION : 7.500 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
6	1		65	Silty sand, SM	BROWN	SFT	MST	3 17 19 20	HNU 0.0	Fill, 0-0.4' bgs. consists of grass root fragments.
				No Sample Recovered						
5	2		45	Silty sand, SM	BROWN	SFT	MST	12	HNU 0.0	Concrete rubble at 2.2' bgs.
				Fill	BROWN			100 0 0	HNU 0.0	
4	3		45	Interval Not Sampled						Augered interval.
3	4			Interval Not Sampled						Augered interval, Out of concrete interval @8-9' bgs, next spoon 10-12'bgs Sat. observed 6'bgs ctngs
2	5									
1	6									
0	7									
-1	8									
-2	9									
-3	10		70	Poorly graded sand, SP	GREY	SFT	SAT	2 3 2 4	HNU 0.0	Uncertain/fill?

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 18.00	
SITE NAME : MAIN POST 14		LOGGER : P. THOMAS	
BORING ID : MP14MW21		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/04/95	
ELEVATION : 7.500 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	GREY	SFT	SAT		HNU 0.0	Uncertain/fill?
-3	11			Sandy elastic silt, MH	GRAY	SFT	WET		HNU 0.0	Fill? Trace plant/root fragments.
				No Sample Recovered						
-4	12		80	Silty sand, SM	GRAY	SFT	SAT	6 1 2 1	HNU 0.0	Uncertain/fill?
-5	13									
				No Sample Recovered						
-6	14		60	Silty sand, SM	GRAY	SFT	SAT	2 2 2 2	HNU 0.0	Uncertain/fill?
-7	15									
				No Sample Recovered						
-8	16		90	Silty sand, SM	GRAY	SFT	SAT	2 3 1 2	HNU 0.0	Uncertain/fill? Note: 16.4-16.6 wet silt layer Well set at 16' bgs. TD of borehole 18'.
-9	17									
				No Sample Recovered						
-10	18									
-11	19									
-12	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP14MW21	1	1	0.00	1.30	SPS		5	M	60	25	0	10		NA	MOD	SFT	MST	
MP14MW21	1	2	1.30	2.00	SPS		0		0	0	0	0						
MP14MW21	2	1	2.00	2.20	SPS		5	MF	60	25	0	10		NA	MOD	SFT	MST	
MP14MW21	2	2	2.20	2.90	SPS		0		0	0	0	0						
MP14MW21	3	1	2.90	4.00	NS		0		0	0	0	0						
MP14MW21	4	1	4.00	10.00	NS		0		0	0	0	0						
MP14MW21	5	1	10.00	10.80	SPS		0		0	0	0	0		NON	MOD	SFT	SAT	
MP14MW21	5	2	10.80	11.40	SPS		0	F	30	50	20	0		MOD	WEL	SFT	WET	
MP14MW21	5	3	11.40	12.00	SPS		0		0	0	0	0						
MP14MW21	6	1	12.00	13.40	SPS		0	MF	60	30	10	0		NON	MOD	SFT	SAT	
MP14MW21	6	2	13.40	14.00	SPS		0		0	0	0	0						
MP14MW21	7	1	14.00	15.20	SPS		0	MF	60	30	10	0		NON	MOD	SFT	SAT	
MP14MW21	7	2	15.20	16.00	SPS		0		0	0	0	0						
MP14MW21	8	1	16.00	17.80	SPS		0		60	30	10	0		NON	MOD	SFT	SAT	
MP14MW21	8	2	17.80	18.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP16MW22 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 12/15/94 END DATE : 12/15/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA FLUID : WATER
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : SPS FLUID : NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	5.500
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : NJ 29 32582

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
0-2' sampled @1425 for VOC,BNA,TCL,Pest/PCB,Tal metals. VOC @approx. 6-12" bgs. 2"-10' int. same for parameters. VOC taken from 2-4'. Lat. 40 deg 18' 56.1"/Long. 74 deg 01'52.3"

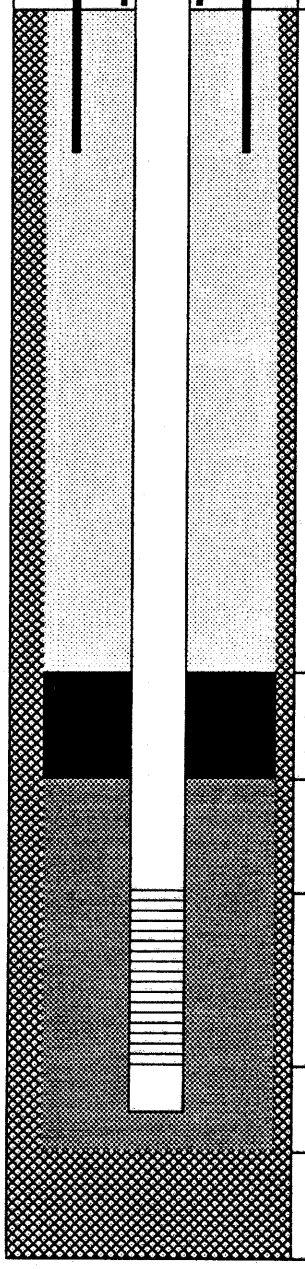
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 16	***INSPECTOR***	K. VALENTI

WELL ID	MP16MW22
START DATE	12/15/94
COMPLETION DATE	12/15/94

WATER LEVELS



DEPTH		ELEV.
1.75	TC	7.25
0.00	GS	5.50
1.00	BN	4.50
3.00	SP	2.50
4.50	SC	1.00
14.04	BS	-8.54
14.50	TD	-9.00

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.50 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.75 ***ft.*** ***Protective Casing:*** 2.04 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : MORIE #1 ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.04 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/05/95
Method Bailing, surge blocking
Yield 1 gpm ***Purged Volume*** 31 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 16		LOGGER : K. VALENTI	
BORING ID : MP16MW22		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/15/94	
ELEVATION : 5.500 surveyed		DATE COMPLETED : 12/15/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Other	BROWN	LSE	MST	13 11 7 7	HNU 0.0	Top 3" topsoil. Matrix contains a few subrounded small stones.
				Other	BLACK	LSE	NA		HNU 0.0	Asphalt gravel.
4	1			No Sample Recovered						
3	2		100	Lean clay with sand, CL	GREEN-DK GRAY	FRM	SAT	3 2 2 3	HNU 0.0	Water in the hole at 1' bgs. SPS saturated. Sandy saturated clay.
2	3									
1	4		75	Sandy lean clay with gravel, CL	DK GREEN-DK GRY	SFT	SAT	2 2 4 9	HNU 0.0	5.5-6 no recovery. Saturated.
0	5									
				No Sample Recovered						
-1	6		50	Clayey sand, SC	GREENISH BROWN	SFT	SAT	5 6 8 10	HNU 0.0	Saturated sample. Mostly sands some semi-rounded cobbles.
-2	7			No Sample Recovered						
-3	8		100	Poorly graded sand, SP	GREENISH-BROWN	SFT	SAT	5 4 2 1	HNU 0.0	Sands get finer w/depth all fine sands towards bottom of spoon. Few small cobbles.
-4	9									
-5	10		100	Poorly graded sand, SP	GREENISH-BROWN	LSE	SAT	1 1 1 2	HNU 0.0	Same lithology as previous interval.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : MAIN POST 16		LOGGER : K. VALENTI	
BORING ID : MP16MW22		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/15/94	
ELEVATION : 5.500 surveyed		DATE COMPLETED : 12/15/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	GREENISH-BROWN	LSE	SAT		HNU 0.0	Same lithology as previous interval.
-5	11									
				Fat clay, CH	GREENISH-GRAY	SFT	SAT		HNU 0.0	Some slight yellow staining observed.
-6	12		100	Fat clay, CH	GREENISH-GRAY	SFT	SAT	2 1 1 5	HNU 0.0	Some yellow staining. Same lithology as previous interval.
-7	13									
				Poorly graded sand, SP	GREENISH-WHITE	LSE	SAT		HNU 0.0	3" layer-sharp contact.
				Lean clay, CL	DK BROWN	FRM	MST		HNU 0.0	
-8	14		100	Fat clay, CH	DK BROWN	FRM	MST		HNU 0.0	Same lithology as previous interval. TD of borehole 14.5' bgs.
-9	15									
-10	16									
-11	17									
-12	18									
-13	19									
-14	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP16MW22	1	1	0.00	0.50	SPS	MC	20	FM	50	30	0	0		LOW	MOD	LSE	MST	
MP16MW22	1	2	0.50	1.00	SPS	C	100		0	0	0	0		NON	NA	LSE	NA	
MP16MW22	1	3	1.00	2.00	SPS		0		0	0	0	0						
MP16MW22	2	1	2.00	4.00	SPS		0	M	25	0	75	0		MOD	MOD	FRM	SAT	
MP16MW22	3	1	4.00	5.50	SPS		15		30	10	45	0		MOD	POR	SFT	SAT	
MP16MW22	3	2	5.50	6.00	SPS		0		0	0	0	0						
MP16MW22	4	1	6.00	7.00	SPS	C	10	CF	75	0	15	0		LOW	POR	SFT	SAT	
MP16MW22	4	2	7.00	8.00	SPS		0		0	0	0	0						
MP16MW22	5	1	8.00	10.00	SPS		5	MF	95	0	0	0		NON	MOD	SFT	SAT	
MP16MW22	6	1	10.00	11.50	SPS		5		95	0	0	0		NON	MOD	LSE	SAT	
MP16MW22	6	2	11.50	12.00	SPS		0		0	15	85	0		HGH	WEL	SFT	SAT	
MP16MW22	7	1	12.00	13.20	SPS		0		0	10	90	0		HGH	WEL	SFT	SAT	
MP16MW22	7	2	13.20	13.50	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
MP16MW22	7	3	13.50	14.00	SPS		0		0	40	60	0		MOD	WEL	FRM	MST	
MP16MW22	8	1	14.00	14.50	SPS		0		0	40	60	0		HGH	WEL	FRM	MST	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18MW24 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/12/95 *END DATE :* 01/12/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVES
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	6.780
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32565

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 19' 00.2"
Longitude-West: 74 deg 02' 49.7"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

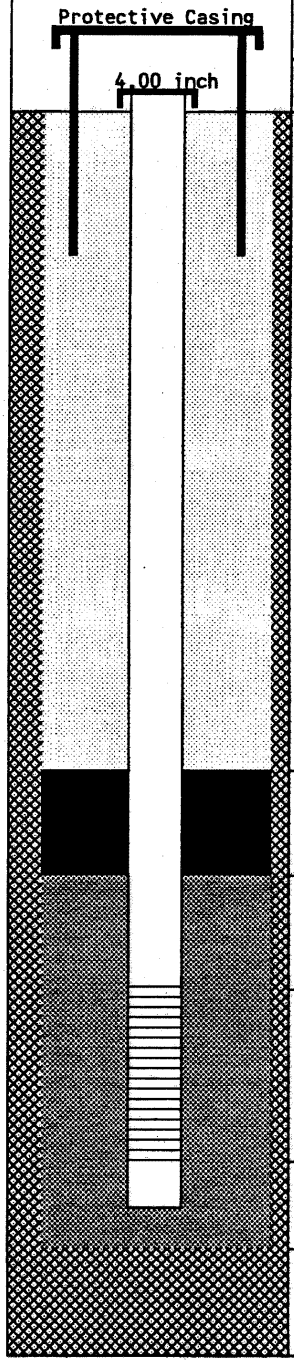
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 18	***INSPECTOR***	P. THOMAS

WELL ID	MP18MW24
START DATE	01/12/95
COMPLETION DATE	01/13/95

WATER LEVELS



DEPTH		***ELEV.***
1.38	*TC*	8.16
0.00	*GS*	6.78
1.00	*BN*	5.78
3.50	*SP*	3.28
5.00	*SC*	1.78
14.54	*BS*	-7.76
15.00	*TD*	-8.22

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.38 ***ft.*** ***Protective Casing:*** 2.26 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.00 to 3.50 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 3.50 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/18/95
Method surge blocking/overpump
Yield .25 gpm ***Purged Volume*** 20 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST 18		LOGGER : P. THOMAS	
BORING ID : MP18MW24		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/12/95	
ELEVATION : 6.780 surveyed		DATE COMPLETED : 01/12/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			70	Silty gravel with sand, GM	ORANGE	LSE	MST	7 5	OVM 0.0	Fill.
				Silty sand, SM	BROWN	LSE	MST	6 8	OVM 0.0	Sampled interval, MP18-SB24-A01. VOA collected soil sample MP18-SB24-A01
5	1									
				No Sample Recovered						
4	2		100	Silty sand, SM	BROWN	LSE	MST	5 5 6 6	OVM 0.0	Fill.
3	3			Fill	BLACK		WET		OVM 0.0	Fill. Shingles.
2	4		45	Silty sand, SM	DK GRAY	LSE	SAT	2 4 4 3	OVM 0.0	Fill. Collected soil sample. MP18-SB24-A02.
1	5			No Sample Recovered						
0	6		20	Silty sand, SM	GRAY	SFT	SAT	9 100 0 0	OVM 0.0	Offset hole 3'; augered to 7' bgs resume SPS: more clay in interval.
				No Sample Recovered						
-1	7		50	Silty sand, SM	GRAY	SFT	SAT	10 15 20 21	OVM 0.0	
-2	8			No Sample Recovered						
-3	9		60	Silty sand, SM	GRAY	SFT	SAT	20 15 14 100	OVM 0.0	Fill. Refusal -10.5-11' bgs. Offset hole again, 5' to east.
-4	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST 18		LOGGER : P. THOMAS	
BORING ID : MP18MW24		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/12/95	
ELEVATION : 6.780 surveyed		DATE COMPLETED : 01/12/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Refusal ~10.5-11' bgs. Offset hole again, 5' to east.
				No Sample Recovered						
-4	11			Interval Not Sampled						Augered interval in new borehole locations.
-5	12			Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Augered to 15' bgs; sanded cuttings. Same as above, set well at 15' bgs.
-6	13									
-7	14									
-8	15									
-9	16									
-10	17									
-11	18									
-12	19									
-13	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18MW24	1	1	0.00	0.20	SPS	MF	40	M	35	20	5	0		NON	POR	LSE	MST	
MP18MW24	1	2	0.20	1.40	SPS		10	MF	50	20	0	20		NA	POR	LSE	MST	
MP18MW24	1	3	1.40	2.00	SPS		0		0	0	0	0						
MP18MW24	2	1	2.00	2.90	SPS		10	MF	50	20	0	20		NA	POR	LSE	MST	
MP18MW24	2	2	2.90	4.00	SPS		0		0	0	0	0					WET	
MP18MW24	3	1	4.00	4.90	SPS		10	MF	50	25	5	10		NON	POR	LSE	SAT	
MP18MW24	3	2	4.90	6.00	SPS		0		0	0	0	0						
MP18MW24	4	1	6.00	6.40	SPS		5	MF	45	25	15	10		LOW	POR	SFT	SAT	
MP18MW24	4	2	6.40	7.00	SPS		0		0	0	0	0						
MP18MW24	5	1	7.00	8.00	SPS	M	10	MF	50	30	10	0		NON	POR	SFT	SAT	
MP18MW24	5	2	8.00	9.00	SPS		0		0	0	0	0						
MP18MW24	6	1	9.00	10.20	SPS		10		50	30	10	0		NON	POR	SFT	SAT	
MP18MW24	6	2	10.20	11.00	SPS		0		0	0	0	0						
MP18MW24	7	1	11.00	12.00	NS		0		0	0	0	0						
MP18MW24	8	1	12.00	15.00	CUT		10	MF	50	30	10	0		NON	POR	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : MP18MW25 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/13/95 *END DATE :* 01/13/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELL REEVE
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	6.350
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32566

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 19' 00.2"
Longitude-West: 74 deg 02' 48.1"

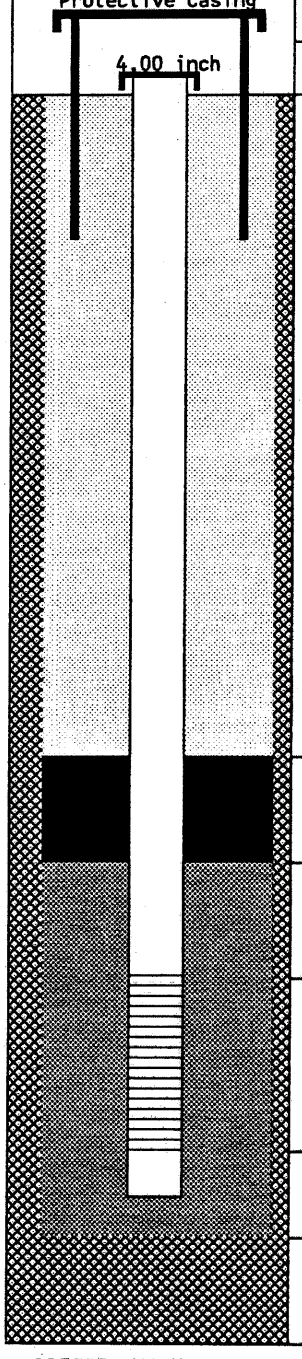
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST 18	***INSPECTOR***	P. THOMAS

WELL ID	MP18MW25
START DATE	01/13/95
COMPLETION DATE	01/13/95

WATER LEVELS



DEPTH		***ELEV.***
1.93	*TC*	8.28
0.00	*GS*	6.35
0.50	*BN*	5.85
3.00	*SP*	3.35
5.00	*SC*	1.35
14.54	*BS*	-8.19
15.00	*TD*	-8.65

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type :

Stick Up Inner Casing: 1.93 ***ft.*** ***Protective Casing:*** 2.29 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 30.00 ***ft.***

Sand Pack Type : NO 1 MORIE SAND ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/19/95
Method Surge Blocking/Bailing
Yield ~5 gpm ***Purged Volume*** 18 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : MAIN POST 18		LOGGER : P. THOMAS	
BORING ID : MP18MW25		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/13/95	
ELEVATION : 6.350 surveyed		DATE COMPLETED : 01/13/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
5	1		90	Silty sand, SM	BROWN	SFT	MST	4 5 5 6	OVM 0.0	Fill. Collected sample MP18-SB25-A01
				No Sample Recovered						
4	2		50	Silty sand with gravel, SM	BROWN	SFT	WET	7 9 11 14	OVM 0.0	Fill. Collected sample MP18-SB25-A02. Slightly more gravelly than above interval.
3	3			No Sample Recovered						
2	4		50	Silty sand, SM	OLIVE GREEN/GRY	SFT	SAT		OVM 0.0	Fill. Sat ~4.5' bgs, large wood fragments ~4.5 ft. bgs.
1	5			No Sample Recovered						
0	6			Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Logged drill cuttings.
-1	7									
-2	8									
-3	9									
-4	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log *Roy F. WESTON, Inc.*

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	MAIN POST 18	LOGGER :	P. THOMAS
BORING ID :	MP18MW25	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/13/95
ELEVATION :	6.350 surveyed	DATE COMPLETED :	01/13/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Fill. Logged drill cuttings.
-4	11									
-5	12									
-6	13									
-7	14									
-8	15									
-9	16									
-10	17									
-11	18									
-12	19									
-13	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18MW25	1	1	0.00	1.80	SPS	M	10	MF	50	25	5	10		NON	POR	SFT	MST	
MP18MW25	1	2	1.80	2.00	SPS		0		0	0	0	0						
MP18MW25	2	1	2.00	3.00	SPS	M	20	MF	40	25	5	10		NON	POR	SFT	WET	
MP18MW25	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP18MW25	3	1	4.00	5.00	SPS	M	10	MF	50	25	5	10		NON	POR	SFT	SAT	
MP18MW25	3	2	5.00	6.00	SPS		0		0	0	0	0						
MP18MW25	4	1	6.00	15.00	CUT	M	10	MF	50	25	5	10		NON	POR	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B1-MW1B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/09/95 *END DATE :* 01/09/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	22.480
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32587

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Longitude-West: 74 deg 02' 43.3"
Latitude-North: 40 deg 18' 24.1"
Well developed on 1/19/95.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

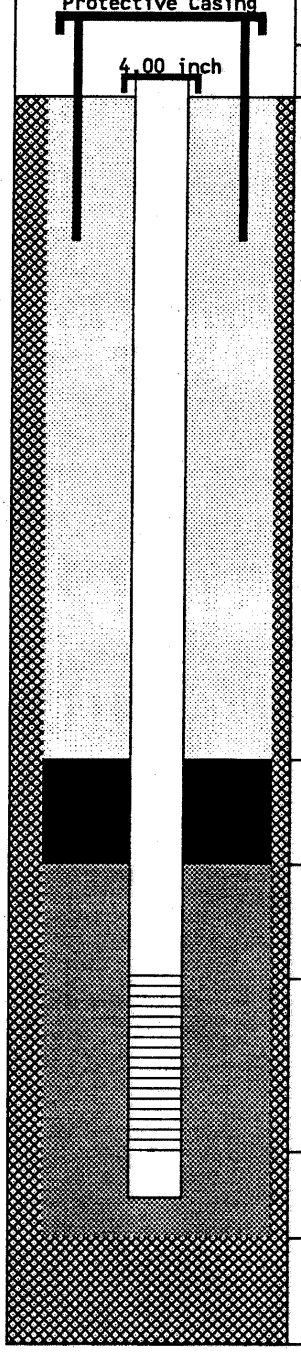
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	BACKGROUND 1	***INSPECTOR***	P. THOMAS

WELL ID	B1-MW1B
START DATE	01/01/95
COMPLETION DATE	01/09/95

WATER LEVELS



DEPTH		*ELEV.*
2.11	*TC*	24.59
0.00	*GS*	22.48
0.50	*BN*	21.98
3.00	*SP*	19.48
4.00	*SC*	18.48
13.54	*BS*	8.94
14.00	*TD*	8.48

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.00 ***ft.***
Type :

Stick Up Inner Casing: 2.11 ***ft.*** ***Protective Casing:*** 2.68 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO #1 MORIE ***Interval:*** 3.00 to 14.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.00 to 13.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 13.54 to 14.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/19/95		
Method	Surge blocking/overpump		
Yield	1.5 gpm	***Purged Volume***	85 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : BACKGROUND 1		LOGGER : P. THOMAS	
BORING ID : B1-MW1B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/09/95	
ELEVATION : 22.480 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Silty sand, SM	BROWN	SFT	WET	5 7 15	OVM 0.0	Topsoil
				Poorly graded sand, SP	YELLOW BROWN	LSE	WET	13	OVM 0.0	Soil sample from 1-2' bgs B1-SB01-A01
21	1			No Sample Recovered						
20	2		100	Poorly graded sand, SP	OLIVE YLW BROWN	LSE	SAT	13 12 16 14	OVM 0.0	Sharp color change to org brn ~3.9' bgs. Sat ~2.5' bgs. Composite sand sample collected.
19	3									
18	4		100	Poorly graded sand, SP	ORANGE-BROWN	LSE	SAT	9 9 11 12	OVM 0.0	Iron stained (orange brown color), dark heavy minerals throughout.
17	5									
16	6		50	Poorly graded sand with silt, SP-SM	FE BROWN (ORG)	LSE	SAT	10 11 11 12	OVM 0.0	Black heavy minerals throughout matrix.
15	7			No Sample Recovered						
14	8		65	Poorly graded sand with silt, SP-SM	FE BROWN/ORANGE	LSE	SAT	6 12 14 18	OVM 0.0	Str. presence of black heavy minerals.
13	9			No Sample Recovered						
12	10		60	Poorly graded sand with silt, SP-SM	FE BROWN	LSE	SAT	6 5 8 12	OVM 0.0	Dk heavy mineral throughout.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : BACKGROUND 1		LOGGER : P. THOMAS	
BORING ID : B1-MW1B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/09/95	
ELEVATION : 22.480 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	FE BROWN	LSE	SAT		OVM 0.0	Dk heavy mineral throughout.
11	11			No Sample Recovered						
10	12		45	Silty sand, SM	STRONG FE BROWN	LSE	SAT	8 11 17 14	OVM 0.0	
9	13			No Sample Recovered						
8	14			Interval Not Sampled						Interval not sampled, set well at 14.5' bgs; Note: Well set at 14' bgs. due to running sands.
7	15									
6	16									
5	17									
4	18									
3	19									
2	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

DATE: 06/20/95 **** Roy F. WESTON, Inc. LITHOLOGICAL DATA FOR - CLIENT ID: USAC2 *** PAGE: 1

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B1-MW1B	1	1	0.00	0.40	SPS		5	MF	50	25	0	20		NA	MOD	SFT	WET	
B1-MW1B	1	2	0.40	1.50	SPS		0	MF	95	5	0	0		NON	WEL	LSE	WET	
B1-MW1B	1	3	1.50	2.00	SPS		0		0	0	0	0						
B1-MW1B	2	1	2.00	4.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	SAT	
B1-MW1B	3	1	4.00	6.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	SAT	
B1-MW1B	4	1	6.00	7.00	SPS		0	MF	90	10	0	0		NA	MOD	LSE	SAT	
B1-MW1B	4	2	7.00	8.00	SPS		0		0	0	0	0						
B1-MW1B	5	1	8.00	9.30	SPS		0	MF	90	10	0	0		NA	MOD	LSE	SAT	
B1-MW1B	5	2	9.30	10.00	SPS		0		0	0	0	0						
B1-MW1B	6	1	10.00	11.20	SPS		0	MF	90	10	0	0		NA	MOD	LSE	SAT	
B1-MW1B	6	2	11.20	12.00	SPS		0		0	0	0	0						
B1-MW1B	7	1	12.00	12.90	SPS		0	MF	85	15	0	0		NA	MOD	LSE	SAT	
B1-MW1B	7	2	12.90	14.00	SPS		0		0	0	0	0						
B1-MW1B	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B2-MW2B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/05/95 *END DATE :* 01/06/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 20.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : VINCE BORELLI

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	19.440
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32588

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 42.7"
Longitude-West: 74 deg 03' 45.5"

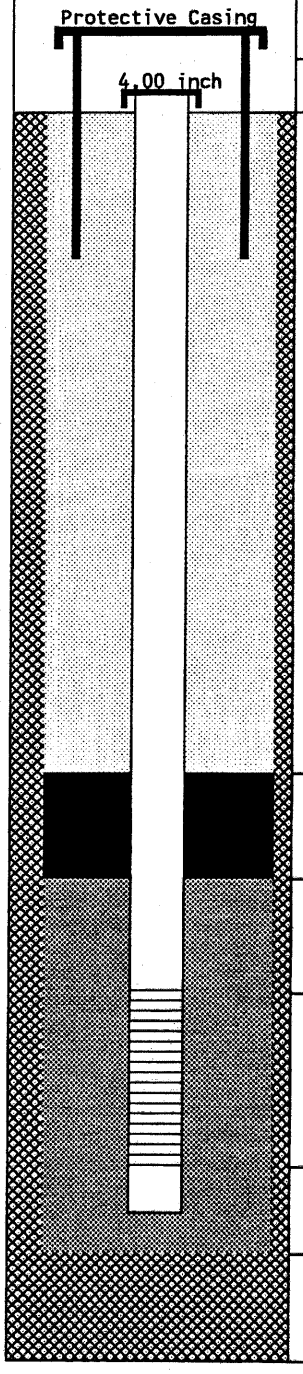
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	BACKGROUND 1	***INSPECTOR***	P. THOMAS

WELL ID	B2-MW2B
START DATE	01/06/95
COMPLETION DATE	01/06/95

WATER LEVELS



DEPTH		***ELEV.***
0.79	***TC***	20.23
0.00	***GS***	19.44
5.00	***BN***	14.44
8.00	***SP***	11.44
10.00	***SC***	9.44
19.54	***BS***	-0.10
20.00	***TD***	-0.56

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 8.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 0.79 ***ft.*** ***Protective Casing:*** 1.01 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 5.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 5.00 to 8.00 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 8.00 to 20.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 10.00 to 19.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 19.54 to 20.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/19/95
Method Surge blocking/bailing
Yield 2.5 gpm ***Purged Volume*** 250 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/27/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : BACKGROUND 1		LOGGER : P. THOMAS	
BORING ID : B2-MW2B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : VINCE BORELLI	
EASTING : 0.0000 estimated		DATE STARTED : 01/05/95	
ELEVATION : 19.440 surveyed		DATE COMPLETED : 01/06/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Sandy silt, ML	BROWN	FRM	MST	5 5 10 10	OVM 0.0	Possible backfill material sampled 1-2'bgs B1-SB01-A01.
18	1			No Sample Recovered						
17	2		60	Sandy elastic silt, MH	BROWN	SFT	MST	10 15 16 14	OVM 0.0	Progressively getting more clay.
16	3			No Sample Recovered						
15	4		50	Fat clay with sand, CH	BROWN/OLIVE	SFT	MST	12 12 15 20	OVM 0.0	Backfilled material; grass roots & fragments.
14	5			No Sample Recovered						
13	6		100	Fat clay with sand, CH	GREEN/GREY BRN	SFT	MST	4 3 5 7	OVM 0.0	Backfilled material - sat observed in coarser intervals, grass roots, fragments.
12	7									
11	8		70	Elastic silt with sand, MH	FE BRN/OLV BRN	SFT	SAT	2 3 7 5	OVM 0.0	Sat, observed in coarse intervals, backfill mat. graded into gray clayey silt. Micaceous @9' bgs.
10	9			No Sample Recovered						
9	10		90	Silty sand, SM	GRAY	FRM	MST	4 3 5 7	OVM 0.0	Very micaceous.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	0.00
SITE NAME :	BACKGROUND 1	LOGGER :	P. THOMAS
BORING ID :	B2-MW2B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	VINCE BORELLI
EASTING :	0.0000 estimated	DATE STARTED :	01/05/95
ELEVATION :	19.440 surveyed	DATE COMPLETED :	01/06/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
8	11			Silty sand, SM	GRAY	FRM	MST		OVM 0.0	Very micaceous.
				No Sample Recovered						
7	12		70	Silty sand, SM	GRAY	SFT	MST	5 5 7 5	OVM 0.0	V. micaceous.
6	13			No Sample Recovered						
5	14		90	Silty sand, SM	GRAY	LSE	SAT	6 5 9 10	OVM 0.0	V. micacous - green elongated, reflective "mineral" found throughout interval.
4	15									
				No Sample Recovered						
3	16		75	Silty sand, SM	GRAY	SFT	SAT	6 12 18 14	OVM 0.0	V. micacous very high; green mineral throughout interval.
2	17									
				No Sample Recovered						
1	18		100	Silty sand, SM	GRAY	SFT	SAT	10 15 10 9	OVM 0.0	V. micacous, set well 20' bgs.
0	19									
-1	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

DATE: 06/27/95 **** Roy F. WESTON, Inc. LITHOLOGICAL DATA FOR - CLIENT ID: USAC2 *** PAGE: 1

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B2-MW2B	1	1	0.00	1.00	SPS	F	5	FM	40	35	15	5		NON	MOD	FRM	MST	
B2-MW2B	1	2	1.00	2.00	SPS		0		0	0	0	0						
B2-MW2B	2	1	2.00	3.20	SPS	F	5	FM	30	35	30	0		HGH	MOD	SFT	MST	
B2-MW2B	2	2	3.20	4.00	SPS		0		0	0	0	0						
B2-MW2B	3	1	4.00	5.00	SPS	F	5	FM	20	30	35	10		HGH	MOD	SFT	MST	
B2-MW2B	3	2	5.00	6.00	SPS		0		0	0	0	0						
B2-MW2B	4	1	6.00	8.00	SPS		5	FM	20	30	35	10		HGH	MOD	SFT	MST	
B2-MW2B	5	1	8.00	9.40	SPS		5	F	20	40	30	5		MOD	MOD	SFT	SAT	
B2-MW2B	5	2	9.40	10.00	SPS		0		0	0	0	0						
B2-MW2B	6	1	10.00	11.80	SPS		0	F	50	40	10	0		NON	MOD	FRM	MST	
B2-MW2B	6	2	11.80	12.00	SPS		0		0	0	0	0						
B2-MW2B	7	1	12.00	13.40	SPS		0	FM	50	40	10	0		NON	MOD	SFT	MST	
B2-MW2B	7	2	13.40	14.00	SPS		0		0	0	0	0						
B2-MW2B	8	1	14.00	15.80	SPS		0	FM	50	40	10	0		NON	MOD	LSE	SAT	
B2-MW2B	8	2	15.80	16.00	SPS		0		0	0	0	0						
B2-MW2B	9	1	16.00	17.50	SPS		0	F	50	40	10	0		NON	MOD	SFT	SAT	
B2-MW2B	9	2	17.50	18.00	SPS		0		0	0	0	0						
B2-MW2B	10	1	18.00	20.00	SPS		0	F	50	40	10	0		NON	MOD	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B3-MW3B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/06/95 *END DATE :* 01/09/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 26.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 26.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	19.200
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32589

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 18' 32.4"
Longitude-West: 74 deg 03' 27.7"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

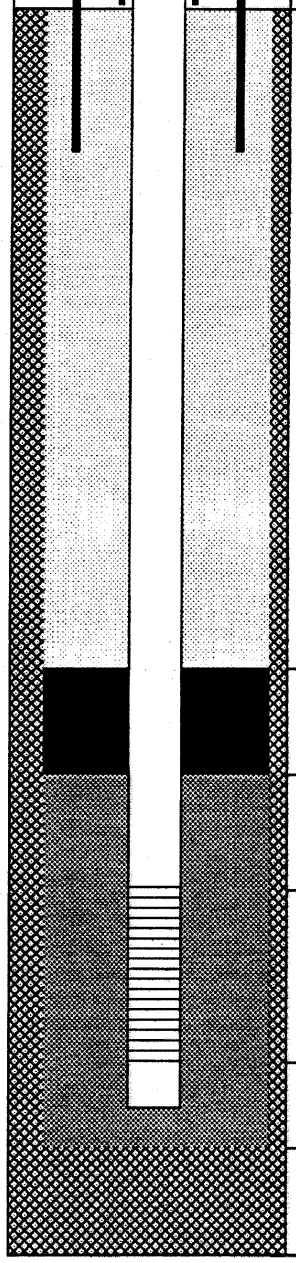
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA	***INSPECTOR***	P. THOMAS

WELL ID	B3-MW3B
START DATE	01/06/95
COMPLETION DATE	01/09/95

WATER LEVELS



DEPTH		*ELEV.*
1.89	*TC*	21.18
0.00	*GS*	19.29
11.00	*BN*	8.29
14.00	*SP*	5.29
16.00	*SC*	3.29
25.54	*BS*	-6.25
26.00	*TD*	-6.71

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 16.00 ***ft.***
Type :

Stick Up Inner Casing: 1.89 ***ft.*** ***Protective Casing:*** 2.33 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 11.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 11.00 to 14.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 14.00 to 26.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 16.00 to 25.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 25.54 to 26.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/19/95
Method	Surge Blocking/Bailing
Yield	<1 gpm ***Purged Volume*** 192 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

Depths are measured below ground surface. High turbidity at end of well development. Well is very slow to recharge.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	26.00
SITE NAME :	MAIN POST AREA	LOGGER :	P. THOMAS
BORING ID :	B3-MW3B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/06/95
ELEVATION :	19.200 surveyed	DATE COMPLETED :	01/09/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
18	1		70	Silty sand, SM	BROWN	SFT	MST	11 15 21 17	OVM 0.0	Lt med Fe stained mottles sampled (B3-SB1-A01) for respective parameters.
				No Sample Recovered						
17	2		70	Silty sand, SM	BRN-YELLOW FE	SFT	MST	5 7 10 14	OVM 0.0	Fill?
16	3			No Sample Recovered						
15	4		80	Silty sand, SM	OLIVE YELLOW BR	SFT	WET	6 7 10 13	OVM 0.0	Fill? Fe stained mottles irregular cohesion. Gravel layer ~5' bgs.
14	5			No Sample Recovered						
13	6		100	Silty sand, SM	ORG BRN/GRN GRY	SFT	WET	10 10 20 15	OVM 0.0	Fill, Fe, green/gray mottles; clay stringers.
12	7									
11	8		100	Silty sand, SM	FE BRN/GRN GRY	SFT	WET	12 15 19 22	OVM 0.0	Very tight matrix.
10	9									
9	10		100	Silty sand, SM	FE BRN/GRN GRY	SFT	WET	10 12 14 12	OVM 0.0	Sampled B3-SB1-A03

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 26.00	
SITE NAME : MAIN POST AREA		LOGGER : P. THOMAS	
BORING ID : B3-MW3B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/06/95	
ELEVATION : 19.200 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
8	11			Silty sand, SM	FE BRN/GRN GRY	SFT	WET		OVM 0.0	Sampled B3-SB1-A03
7	12		75	Silty sand, SM	GRAY	SFT	MST	4 6 9 12	OVM 0.0	
6	13			No Sample Recovered						
5	14		90	Silty sand, SM	GRAY	SFT	WET	12 12 10 11	OVM 0.0	Quartz sand with silt/ clay matrix, wet at bottom of spoon.
4	15									
3	16		60	No Sample Recovered Silty sand, SM	GRAY	LSE	WET	3 5 9 9	OVM 0.0	Coarser than above int.
2	17			No Sample Recovered						
1	18		90	Silty sand, SM	GRAY	SFT	SAT	8 5 7 9	OVM 0.0	
0	19									
-1	20		75	No Sample Recovered Silty sand, SM	GRAY	SFT	SAT	5 4 9 5	OVM 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 26.00	
SITE NAME : MAIN POST AREA		LOGGER : P. THOMAS	
BORING ID : B3-MW3B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/06/95	
ELEVATION : 19.200 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	
-1	21									
				No Sample Recovered						
-2	22			Interval Not Sampled						Augered interval.
-3	23									
-4	24		100	Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	
-5	25									
-6	26									
-7	27									
-8	28									
-9	29									
-10	30									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

DATE: 06/20/95 **** Roy F. WESTON, Inc. LITHOLOGICAL DATA FOR - CLIENT ID: USAC2 *** PAGE: 1

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B3-MW3B	1	1	0.00	1.40	SPS	F	5	FM	50	35	5	5		NON	MOD	SFT	MST	
B3-MW3B	1	2	1.40	2.00	SPS		0		0	0	0	0						
B3-MW3B	2	1	2.00	3.40	SPS	F	5		50	35	10	0		NON	MOD	SFT	MST	
B3-MW3B	2	2	3.40	4.00	SPS		0		0	0	0	0						
B3-MW3B	3	1	4.00	5.60	SPS	F	10	MFC	40	30	20	0		MOD	MOD	SFT	WET	
B3-MW3B	3	2	5.60	6.00	SPS		0		0	0	0	0						
B3-MW3B	4	1	6.00	8.00	SPS		5	MF	45	35	15	0		LOW	MOD	SFT	WET	
B3-MW3B	5	1	8.00	10.00	SPS		5	FM	45	35	15	0		LOW	MOD	SFT	WET	
B3-MW3B	6	1	10.00	12.00	SPS	F	5	FM	45	35	15	0		LOW	MOD	SFT	WET	
B3-MW3B	7	1	12.00	13.50	SPS		0	FM	50	40	10	0		NON	MOD	SFT	MST	
B3-MW3B	7	2	13.50	14.00	SPS		0		0	0	0	0						
B3-MW3B	8	1	14.00	15.80	SPS		0	FM	50	40	10	0		NON	MOD	SFT	WET	
B3-MW3B	8	2	15.80	16.00	SPS		0		0	0	0	0						
B3-MW3B	9	1	16.00	17.20	SPS		0	MF	60	30	10	0		NON	MOD	LSE	WET	
B3-MW3B	9	2	17.20	18.00	SPS		0		0	0	0	0						
B3-MW3B	10	1	18.00	19.80	SPS		0	MF	55	35	10	0		NON	MOD	SFT	SAT	
B3-MW3B	10	2	19.80	20.00	SPS		0		0	0	0	0						
B3-MW3B	11	1	20.00	21.50	SPS		0	MF	55	35	10	0		NON	MOD	SFT	SAT	
B3-MW3B	11	2	21.50	22.00	SPS		0		0	0	0	0						
B3-MW3B	12	1	22.00	24.00	NS		0		0	0	0	0						
B3-MW3B	13	1	24.00	26.00	SPS		0	FM	50	40	10	0		NON	MOD	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B4-MW4B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/09/95 *END DATE :* 01/09/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	9.780
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32567

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

Sample I.D. 1-2' B4-SB01-A01 Dup. B4-SB4-001 Sample I.D. 6'-6" to 7'-2" B4SB01-A02. All parameters: TCL+30 VOA, BNA,PEST /PCB, TAL met.,Cn. Lat: 40 deg 19' 0"/Long: 74 deg 02' 40.3"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

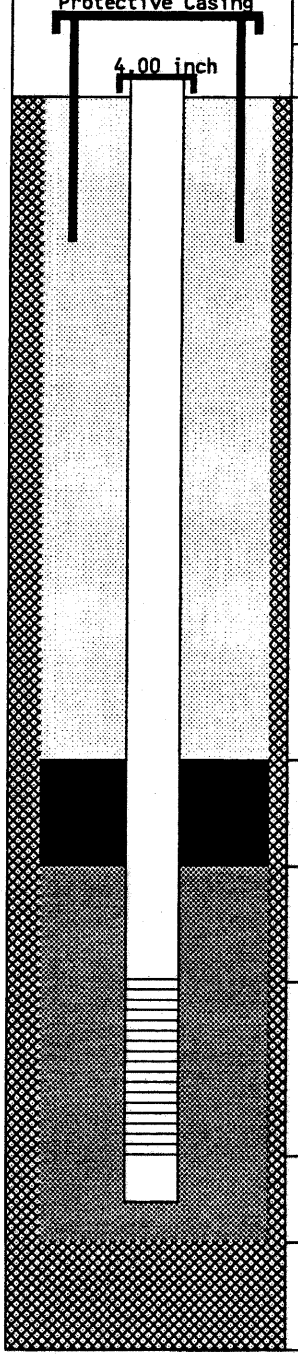
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	BACKGROUND 4	***INSPECTOR***	K. VALENTI

WELL ID	B4-MW4B
START DATE	01/09/95
COMPLETION DATE	01/09/95

WATER LEVELS



DEPTH		***ELEV.***
2.30	*TC*	12.08
0.00	*GS*	9.78
1.00	*BN*	8.78
3.00	*SP*	6.78
5.00	*SC*	4.78
14.54	*BS*	-4.76
15.00	*TD*	-5.22

DRILLING SUMMARY

Driller	WELLS REEVE
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 15.00 ***ft.***
Type :

Stick Up Inner Casing: 2.30 ***ft.*** ***Protective Casing:*** 2.66 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/19/95		
Method	Surge Blocking/Overpump		
Yield	~.5 gpm	***Purged Volume***	45 gal

COMMENTS

TC = Top of Casing	SP = Top Sand Pack	= Grout
GS = Ground Surface	SC = Top Screen	= Seal
BN = Top Seal	BS = Bottom Screen	= Sand Pack
	TD = Total Depth	= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : BACKGROUND 4		LOGGER : K. VALENTI	
BORING ID : B4-MW4B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/09/95	
ELEVATION : 9.780 surveyed		DATE COMPLETED : 01/09/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
8	1		100	Silty sand, SM	BROWN	NA	MST	4 4 3 8	HNU 0.0	Used 3" spoon.
				Silty sand, SM	BROWN					Fill/uncertain. Gradual change to drive brn color w/more sand & little silt
				Silty sand, SM	OLIVE BROWN					Fill/uncertain. Used 3" split spoon for sample collection.
7	2		100	Poorly graded sand with silt, SP-SM	OLIVE	LSE	MST	6 7 8 9	HNU 0.0	3" sps used.
6	3			Sandy silt, ML	OLIVE	FRM	MST		HNU 0.0	Fill/uncertain with orange staining - mod. gray mottling noted from 3-4' (3" sps used).
5	4		100	Silty sand, SM	OLIVE	FRM	WET	10 11 11 14	HNU 0.0	V. firm, moist to wet (tightly packed), Heavy orange (lt.) staining, gray mottling (3" sps)
4	5									
3	6		100	Silty sand, SM	OLIVE	SFT	WET	4 7 7 11	HNU 0.0	Heavy dk. orange and gray staining. Wet at 7'2' bgs Sampled B4-SB01-A02.
2	7									
1	8		100	Silty sand, SM	OLIVE GREEN	SFT	SAT	8 10 11 11	HNU 0.0	Outside of sps sat. Rod wet to 6' bgs. 1st water at 7'-2" bgs. 3" sps used.
0	9									
-1	10		100	Silty sand, SM	GREEN (FOREST)	LSE	SAT	4 5 6 6	HNU 0.0	2" sps used hereafter to td. Thin bands of pale orange to orange color throughout. sps sat-wet.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	BACKGROUND 4	LOGGER :	K. VALENTI
BORING ID :	B4-MW4B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/09/95
ELEVATION :	9.780 surveyed	DATE COMPLETED :	01/09/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GREEN (FOREST)	LSE	SAT		HNU 0.0	2" sps used hereafter to td. Thin bands of pale orange to orange color throughout. sps sat-wet.
-1	11									
-2	12		100	Poorly graded sand with silt, SP-SM	GREEN-FOREST	LSE	SAT	3 4 8 9	HNU 0.0	
-3	13									
-4	14		100	Poorly graded sand, SP	DK GREEN	LSE	SAT	4 8 16 15	HNU 0.0	End of borehole.
-5	15									
-6	16									
-7	17									
-8	18									
-9	19									
-10	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B4-MW4B	1	1	0.00	0.20	SPS		0	M	85	15	0	0		NON	MOD	NA	MST	
B4-MW4B	1	2	0.20	0.50	SPS		0	M	85	15	0	0						
B4-MW4B	1	3	0.50	2.00	SPS		0	M	85	15	0	0						
B4-MW4B	2	1	2.00	3.00	SPS		0	MF	90	10	0	0		NON	MOD	LSE	MST	
B4-MW4B	2	2	3.00	4.00	SPS		0		30	60	10	0		LOW	MOD	FRM	MST	
B4-MW4B	3	1	4.00	6.00	SPS		0		55	25	20	0		MOD	POR	FRM	WET	
B4-MW4B	4	1	6.00	8.00	SPS		0		60	25	15	0		LOW	POR	SFT	WET	
B4-MW4B	5	1	8.00	10.00	SPS		0		85	10	5	0		LOW	MOD	SFT	SAT	
B4-MW4B	6	1	10.00	12.00	SPS		0	F	85	10	5	0		NON	MOD	LSE	SAT	
B4-MW4B	7	1	12.00	14.00	SPS		0	F	90	10	0	0		LOW	MOD	LSE	SAT	
B4-MW4B	8	1	14.00	16.00	SPS		0	F	95	5	0	0		NON	WEL	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B5-MW5B PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/11/95 END DATE : 01/11/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 0.00 ft. BGS
METHOD : HSA FLUID : WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	13.400
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # : NJ 29 32583

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 19' 04.7"
Longitude-West: 74 deg 02' 07.6"

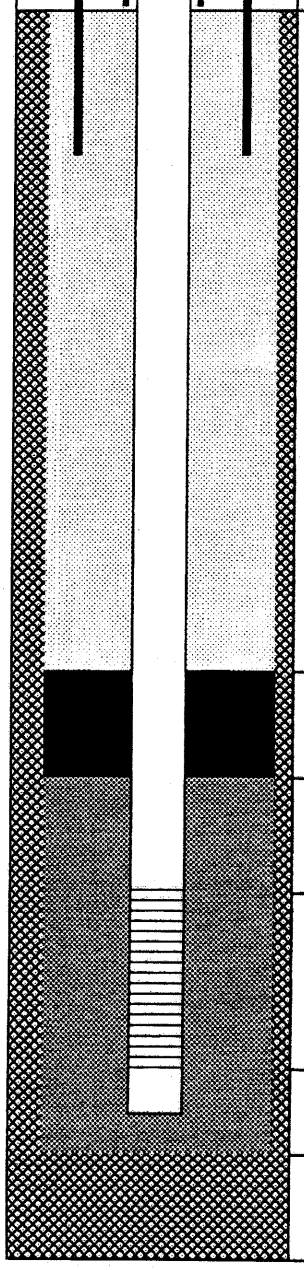
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	MAIN POST AREA	***INSPECTOR***	K. VALENTI

WELL ID	B5-MW5B
START DATE	01/11/95
COMPLETION DATE	01/11/95

WATER LEVELS



DEPTH		ELEV.
2.00	TC	15.40
0.00	GS	13.40
1.00	BN	12.40
3.00	SP	10.40
4.50	SC	8.90
14.04	BS	-0.64
14.50	TD	-1.10

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 14.80 ***ft.***
Type :

Stick Up Inner Casing: 2.00 ***ft.*** ***Protective Casing:*** 2.14 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.04 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/19/95
Method Bailing
Yield 1 gpm ***Purged Volume*** 18 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Well during development remained turbid.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : MAIN POST AREA		LOGGER : K. VALENTI	
BORING ID : B5-MW5B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/11/95	
ELEVATION : 13.400 surveyed		DATE COMPLETED : 01/11/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
12	1		100	Sandy silt, ML	BROWN	LSE	DRY	7 8 9 8	HNU 0.0	3" SPS used. Uncertain fill or natural. Sample collected B5-SB01-A01. Topsoil at 0-0.3' bgs.
11	2		100	Sandy elastic silt, MH	OLIVE BROWN	STF	MST	9 8 13 15	HNU 0.0	Fill. 2" SPS used. Mottle orange Fe stains. More sand towards spoon bottom Sample col.B5-SB01-A02
10	3									
9	4		100	Fill	OLIVE BROWN	LSE	SAT	9 9 8 8	HNU 0.0	Fill. 2" SPS used. Wet at 4' bgs. Few gray bands at ~5' bgs. Heavy Fe staining @5.8'
8	5									
7	6		50	Silty sand, SM	OLIVE BROWN	LSE	SAT	4 4 5 5	HNU 0.0	2" sps used here to T.D.
6	7			No Sample Recovered						
5	8		50	Silty sand, SM	OLIVE BROWN	SFT	SAT	2 1 2 1	HNU 0.0	Mild gray and lt. orange staining in SPS.
4	9			No Sample Recovered						
3	10		100	Silt with sand, ML	DK BROWN TO BLK	SFT	SAT	2 2 2 3	HNU 0.0	SPS is wet to saturated.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	0.00
SITE NAME :	MAIN POST AREA	LOGGER :	K. VALENTI
BORING ID :	B5-MW5B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/11/95
ELEVATION :	13.400 surveyed	DATE COMPLETED :	01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
2	11			Silt with sand, ML	DK BROWN TO BLK	SFT	SAT		HNU 0.0	SPS is wet to saturated.
1	12		100	Elastic silt with sand, MH	BLACK	FRM	SAT	5 4 8 9	HNU 0.0	Sps gets sandier towards bottom (20%). Auger to 14.5 to set well.
0	13									
-1	14			Interval Not Sampled						
-2	15									
-3	16									
-4	17									
-5	18									
-6	19									
-7	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B5-MW5B	1	1	0.00	2.00	SPS		0		35	65	0	0		NON	POR	LSE	DRY	
B5-MW5B	2	1	2.00	4.00	SPS		0		30	55	15	0		MOD	POR	STF	MST	
B5-MW5B	3	1	4.00	6.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	SAT	
B5-MW5B	4	1	6.00	7.00	SPS		0	MF	85	15	0	0		NON	WEL	LSE	SAT	
B5-MW5B	4	2	7.00	8.00	SPS		0		0	0	0	0						
B5-MW5B	5	1	8.00	9.00	SPS		0	F	75	20	5	0		LOW	WEL	SFT	SAT	
B5-MW5B	5	2	9.00	10.00	SPS		0		0	0	0	0						
B5-MW5B	6	1	10.00	12.00	SPS		0		20	75	5	0		LOW	MOD	SFT	SAT	
B5-MW5B	7	1	12.00	14.00	SPS		0		15	75	10	0		MOD	WEL	FRM	SAT	
B5-MW5B	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

MAIN POST
SOIL BORING LOGS

BOREHOLE ID : MP18-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/12/95 *END DATE :* 01/12/95

LOGGER/COMPANY : K. VALENTI/P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 8.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 3.00
INTERVAL: 0.00 ft. to 8.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55 MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Boreholes were grouted with cement/bentonite mixture from bottom to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 8.00	
SITE NAME : MAIN POST 18		LOGGER : K. VALENTI/P. THOMAS	
BORING ID : MP18-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55 MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/12/95	
ELEVATION : 0.000 estimated		DATE COMPLETED : 01/12/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			85	Silty gravel with sand, GM	ORANGE	LSE	MST	13 15 19 21	HNU 0.0 CGI 100.0	Fill.
-1	1			Silty sand, SM	OLIVE GREEN/GRY	SFT	MST		HNU 0.0	Fill. Collected sample MP18-SB01-A01.
				No Sample Recovered						
-2	2		70	Silty sand, SM	GRAY	SFT	MST	15 10 15 15	HNU 0.0	Fill with gray shingles
-3	3									
				No Sample Recovered						
-4	4		60	Silty sand, SM	GRAY	SFT	WET	12 14 14 13	OVM 0.0	Fill. Collected sample MP18-SB01-A02. Soils wet at ~4' bgs.
-5	5									
				No Sample Recovered						
-6	6		100	Silty sand, SM	GRAY	SFT	SAT	12 14 12 13	OVM 0.0	Fill. Soils saturated at 6' bgs.
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB1	1	1	0.00	0.90	SPS	MF	45		40	15	0	0		NON	POR	LSE	MST	
MP18-SB1	1	2	0.90	1.70	SPS		10	MF	50	25	5	10		NON	POR	SFT	MST	
MP18-SB1	1	3	1.70	2.00	SPS		0		0	0	0	0						
MP18-SB1	2	1	2.00	3.40	SPS	MF	10	MF	50	25	5	10		NON	POR	SFT	MST	
MP18-SB1	2	2	3.40	4.00	SPS		0		0	0	0	0						
MP18-SB1	3	1	4.00	5.20	SPS	MF	10	MF	50	25	5	10		NON	POR	SFT	WET	
MP18-SB1	3	2	5.20	6.00	SPS		0		0	0	0	0						
MP18-SB1	4	1	6.00	8.00	SPS		10	MF	50	25	5	10		NON	POR	SFT	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18-SB2 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/12/95 *END DATE :* 01/12/95

LOGGER/COMPANY : K. VALENTI/P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 6.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55 MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	0.00
SITE NAME :	MAIN POST 18	LOGGER :	K. VALENTI/P. THOMAS
BORING ID :	MP18-SB2	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55 MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/12/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/12/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			60	Silty gravel with sand, GM	ORANGE	LSE	MST	9 10 18 13	OVM 0.0	Fill.
-1	1			Silty sand, SM	OLIVE GREEN/GRY	SFT	MST		OVM 0.0	Fill.
				No Sample Recovered						
-2	2		70	Silty sand, SM	GRAY	SFT	WET	10 14 15 14	OVM 0.0	Soils are finer than previous interval.
-3	3									
				No Sample Recovered						
-4	4		90	Silty sand, SM	GRAY	SFT	WET	10 11 15 14	OVM 0.0	Fill. Saturated at bottom of spoon. Collected sample MP18-SB02-A02 from 4-6' bgs. Water @6-7' bgs
-5	5									
				No Sample Recovered						
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB2	1	1	0.00	0.90	SPS	FM	45	MF	40	15	0	0		NON	POR	LSE	MST	
MP18-SB2	1	2	0.90	1.20	SPS	FM	10	MF	50	25	5	10		NON	POR	SFT	MST	
MP18-SB2	1	3	1.20	2.00	SPS		0		0	0	0	0						
MP18-SB2	2	1	2.00	3.40	SPS		10	FM	50	20	10	10		NON	POR	SFT	WET	
MP18-SB2	2	2	3.40	4.00	SPS		0		0	0	0	0						
MP18-SB2	3	1	4.00	5.80	SPS	MF	10	FM	50	20	10	10		NON	POR	SFT	WET	
MP18-SB2	3	2	5.80	6.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : MP18-SB3 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/12/95 *END DATE :* 01/12/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 8.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 3.00
INTERVAL: 0.00 ft. to 8.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELL REEVES
DRILL RIG TYPE : MOBILE B57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N *TYPE* *DEPTH*
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Boreholes were backfilled with cement/bentonite mixture from bottom to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	8.00
SITE NAME :	MAIN POST 18	LOGGER :	P. THOMAS
BORING ID :	MP18-SB3	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B57
EASTING :	0.0000 estimated	DATE STARTED :	01/12/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/12/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			60	Silty gravel with sand, GM	ORANGE	LSE	MST	6 9 8 9	OVM 0.0	Fill
				Silty sand, SM	GRAY	SFT	MST		OVM 0.0	Fill. Collected sample MP18-SB03-A01
-1	1			No Sample Recovered						
-2	2		80	Silty sand, SM	GRAY	SFT	MST	2 10 10 8	OVM 0.0	Fill. Wood fragments (large) ~3' bgs.
-3	3									
				No Sample Recovered						
-4	4		55	Silty sand, SM	GRAY	SFT	WET	18 23 25 29	OVM 0.0	Fill. Large wood fragments; wet throughout interval.
-5	5									
				No Sample Recovered						
-6	6		82	Silty sand, SM	GRAY	SFT	WET	13 11 11 9	OVM 0.0	Fill. Large wood fragments. TD of borehole 8 ft. bgs.
-7	7									
				No Sample Recovered						
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB3	1	1	0.00	0.50	SPS	FM	45	MF	40	15	0	0		NON	POR	LSE	MST	
MP18-SB3	1	2	0.50	1.20	SPS	F	10	MF	50	25	5	10		NON	POR	SFT	MST	
MP18-SB3	1	3	1.20	2.00	SPS		0		0	0	0	0						
MP18-SB3	2	1	2.00	3.60	SPS	M	10	FM	45	25	10	10		NON	POR	SFT	MST	
MP18-SB3	2	2	3.60	4.00	SPS		0		0	0	0	0						
MP18-SB3	3	1	4.00	5.40	SPS		10		40	25	5	20		NON	POR	SFT	WET	
MP18-SB3	3	2	5.40	6.00	SPS		0		0	0	0	0						
MP18-SB3	4	1	6.00	7.50	SPS	M	10	FM	40	25	5	20		NON	POR	SFT	WET	
MP18-SB3	4	2	7.50	8.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18-SB4 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/11/95 *END DATE :* 01/11/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 6.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA *FLUID :*
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
	PURGE :	0.00
	SAMPLE :	0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sampled I.D. boring SB04-A01/A02 5'-6" 1st water T.D.=6'

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	6.00
SITE NAME :	MAIN POST 18	LOGGER :	K. VALENTI
BORING ID :	MP18-SB4	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/11/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Poorly graded sand, SP	ORANGE-BROWN	LSE	DRY	7 7 9 11	OVM 0.0	Fill. Sample M18-SB04-A01 collected. 3" SPS used. Top 2" were asphalt.
-1	1									
-2	2		100	Well-graded sand with gravel, SW	ORANGE-BROWN	LSE	DRY	15 17 21 25	OVM 0.0	Sand & gravel, 8" from 2'8" to 3'4" int. (2'8"-3'4") of sand & gravels (subang) (small cobbles).
-3	3									
-4	4		100	Well-graded sand, SW	REDDISH BROWN	LSE	WET	27 23 25 29	OVM 0.0	3" sps used. Sample M18-SB04-A02 collected water at 5.5' bgs.
-5	5									
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB4	1	1	0.00	2.00	SPS		0		100	0	0	0		NA	MOD	LSE	DRY	
MP18-SB4	2	1	2.00	4.00	SPS		20		80	0	0	0		NA	POR	LSE	DRY	
MP18-SB4	3	1	4.00	6.00	SPS		5		95	0	0	0		NA	POR	LSE	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18-SB5 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/11/95 END DATE : 01/11/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 4.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 4.00 ft. BGS
METHOD : HSA FLUID :
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sampled I.D. boring SB05-A01/A02 3'-8" 1st water T.D.=4'

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT	: FT. MONMOUTH	TOTAL DEPTH	: 4.00
SITE NAME	: MAIN POST 18	LOGGER	: K. VALENTI
BORING ID	: MP18-SB5	DRILLING COMPANY	: J.C. ANDERSON
NORTHING	: 0.0000 estimated	DRILLING RIG	: CME-55
EASTING	: 0.0000 estimated	DATE STARTED	: 01/11/95
ELEVATION	: 0.000 estimated	DATE COMPLETED	: 01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Well-graded sand, SW	BROWN	LSE	DRY	3 4 4 4	OVM 0.0	Fill. Top 3" asphalt. Sands mild Fe staining. Sample M18-SB04-A01 collected.
-1	1									
-2	2		100	Poorly graded sand, SP	BROWN	LSE	SAT	8 9 11 8	OVM 0.0	Fill iron (Fe) staining present. Water at 3.75' bgs. TD of borehole 4'bgs Sample M18SB05-A02 coll.
-3	3									
-4	4									
-5	5									
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB5	1	1	0.00	2.00	SPS		5		95	0	0	0		NA	POR	LSE	DRY	
MP18-SB5	2	1	2.00	4.00	SPS		0		100	0	0	0		NA	MOD	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18-SB6 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/11/95 *END DATE :* 01/11/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 6.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sampled I.D. Borings SB06-A01/A02 4' 2st water TD=6'

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 6.00
SITE NAME : MAIN POST 18		LOGGER	: K. VALENTI
BORING ID : MP18-SB6		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: CME-55
EASTING : 0.0000 estimated		DATE STARTED	: 01/11/95
ELEVATION : 0.000 estimated		DATE COMPLETED	: 01/11/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silty sand with gravel, SM	GRAY-BROWN	LSE	MST	17 18 21	OVM 0.0	Fill. Top 2" are topsoil (orange/yellow). Used 3" spoon. Cement present.
				Silty sand with gravel, SM	LT YELLOW BROWN	LSE	MST	25	OVM 0.0	Sample M18-SB06-A01 collected.
				Silty sand, SM	DK GRAY	LSE	MST		OVM 0.0	Sample M18SB01-A01 collected.
-1	1			No Sample Recovered						
-2	2		50	Silty sand with gravel, SM	BLACK	LSE	WET	9 13 13 17	OVM 0.0	Fill. 4" broken concrete in top SPS. Sharp change to little silty sand and gravel. Fuel oil staining
-3	3			No Sample Recovered						
-4	4			Sandy silt, ML	BLACK	FRM	SAT	6 6 5 4		Fill. Sheen/odor of fuel present. TD of borehole 6.
-5	5									
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB6	1	1	0.00	0.40	SPS		15		70	15	0	0		NA	POR	LSE	MST	
MP18-SB6	1	2	0.40	0.80	SPS		15		70	15	0	0		NA	POR	LSE	MST	
MP18-SB6	1	3	0.80	1.00	SPS		5		80	15	0	0		NON	POR	LSE	MST	
MP18-SB6	1	4	1.00	2.00	SPS		0		0	0	0	0						
MP18-SB6	2	1	2.00	3.00	SPS		20		60	20	0	0		NON	POR	LSE	WET	
MP18-SB6	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP18-SB6	3	1	4.00	6.00	SPS		10		25	65	0	0		LOW	MOD	FRM	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP18-SB7 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/12/95 END DATE : 01/12/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 6.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 3.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELL REEVES
DRILL RIG TYPE : MOBILE B57

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	6.00
SITE NAME :	MAIN POST AREA 18	LOGGER :	P. THOMAS
BORING ID :	MP18-SB7	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B57
EASTING :	0.0000 estimated	DATE STARTED :	01/12/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/12/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			90	Poorly graded sand with silt, SP-SM	OLIVE/YELL BRN	LSE	MST	6 5 5 4	OVM 0.0	Fill. Collected sample MP18-SB07-A01.
				No Sample Recovered						
-2	2		50	Not Classified - Incomplete Data	GRAY	NA	SAT	6 11 12 13	OVM 0.0	Fill. No sample collected due to all gravel and saturated.
-3	3			No Sample Recovered						
-4	4		50	Not Classified - Incomplete Data	GRAY	NA	SAT	5 10 15 12	OVM 0.0	Could not sample interval gravel and saturated. TD of borehole at 6' bgs.
-5	5			No Sample Recovered						
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP18-SB7	1	1	0.00	1.80	SPS		0	MF	90	10	0	0		NA	WEL	LSE	MST	
MP18-SB7	1	2	1.80	2.00	SPS		0		0	0	0	0						
MP18-SB7	2	1	2.00	3.00	SPS	M	100		0	0	0	0		NA	NA	NA	SAT	
MP18-SB7	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP18-SB7	3	1	4.00	5.00	SPS	M	100		0	0	0	0		NA	NA	NA	SAT	
MP18-SB7	3	2	5.00	6.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP3-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/14/94 *END DATE :* 12/14/94

LOGGER/COMPANY : K. VALENTE

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 12.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA *FLUID :*
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
MPAOC3-SB01 performed, once completed was backfilled to surface with grout. Sample collected MPA3-SB01A02, MPA3-SB01C02 (dup). MPA3-SB01--2 (field blanks)

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 12.00	
SITE NAME : MAIN POST AREA 3		LOGGER : K. VALENTE	
BORING ID : MP3-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Silty sand, SM	LT BROWN	SFT	DRY	4 5 5 7	HNU 15.0	Top 3" of soil in spoon is brown sandy silt topsoil/organic.
-1	1									
				No Sample Recovered						
-2	2		50	Well-graded sand with gravel, SW	WHITISH TAN	LSE	MST	14 13 7 7	HNU 8.0	Beach sand (coarse) & gravel.
-3	3			No Sample Recovered						
-4	4		50	Silt, ML	ORANGE BROWN	LSE	MST	7 8 9 11	HNU 17.0	1st 2" of recovery slough from borehole.
-5	5			No Sample Recovered						
-6	6		50	Poorly graded sand with silt, SP-SM	ORANGE-BROWN	LSE	MST	6 8 8 10	HNU 8.0	Same lithology as previous spoon.
-7	7			No Sample Recovered						
-8	8		75	Silty sand, SM	BROWN	LSE	MST	6 6 9 11	HNU 40.0	
-9	9			Poorly graded sand with silt, SP-SM	ORANGE BROWN	LSE	MST		HNU 40.0	Same lithology as 4-6'bgs
				No Sample Recovered						
-10	10		50	Poorly graded sand with silt, SP-SM	ORANGE BROWN	LSE	MST	9 9 10 11	HNU 9.0	Orange brown sand. Same lithology as above interval.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 12.00	
SITE NAME : MAIN POST AREA 3		LOGGER : K. VALENTE	
BORING ID : MP3-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/14/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/14/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	ORANGE BROWN	LSE	MST		HNU 9.0	Orange brown sand. Same lithology as above interval.
				Poorly graded sand, SP	BROWN	LSE	WET		HNU 0.0	11.6' wet sand. End of borehole. Borehole grouted to surface.
-11	11			No Sample Recovered						
-12	12									
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP3-SB1	1	1	0.00	1.50	SPS		0	F	75	25	0	0		NON	MOD	SFT	DRY	
MP3-SB1	1	2	1.50	2.00	SPS		0		0	0	0	0						
MP3-SB1	2	1	2.00	3.00	SPS	C	20	CM	80	0	0	0		NON	POR	LSE	MST	
MP3-SB1	2	2	3.00	4.00	SPS		0		0	0	0	0						
MP3-SB1	3	1	4.00	5.00	SPS		0		0	90	10	0		NON	WEL	LSE	MST	
MP3-SB1	3	2	5.00	6.00	SPS		0		0	0	0	0						
MP3-SB1	4	1	6.00	7.00	SPS		0	F	90	10	0	0		NON	WEL	LSE	MST	
MP3-SB1	4	2	7.00	8.00	SPS		0		0	0	0	0						
MP3-SB1	5	1	8.00	8.70	SPS		0	M-F	80	20	0	0		NON	MOD	LSE	MST	
MP3-SB1	5	2	8.70	9.50	SPS		0	MF	90	10	0	0		NON	WEL	LSE	MST	
MP3-SB1	5	3	9.50	10.00	SPS		0		0	0	0	0						
MP3-SB1	6	1	10.00	10.50	SPS		0	F	90	10	0	0		NON	WEL	LSE	MST	
MP3-SB1	6	2	10.50	11.00	SPS		0	MF	100	0	0	0		NON	MOD	LSE	WET	
MP3-SB1	6	3	11.00	12.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : MP3-SB2 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/15/94 *END DATE :* 12/15/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 4.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 4.00 ft. to 14.00 ft. BGS
METHOD : SPS *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

Augered to 4'. SPS to 14' bgs. SB02 grouted to ground surface level. Groundwater @12' bgs (w.l. used). Sampled 2-10' composite sample int. Routine sample - MPA3-SB02-A02.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	MAIN POST AREA 3	LOGGER :	K. VALENTI
BORING ID :	MP3-SB2	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/15/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/15/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Silty sand, SM	LT BROWN	LSE	MST	8 9 21 26	HNU 0.0	Topsoils/organics.
				Silty sand, SM	BROWN					
				Silty sand, SM	LT BROWN					Sharp color change at 1' from brown to lt. brown.
-1	1									
				Well-graded gravel with sand, GW	TANNISH WHITE	LSE	DRY		HNU 0.0	Rock fragments and sand. Some small sub-rounded stones in sps (lower 1' of sps) of white quartz.
-2	2		40	Well-graded gravel with sand, GW	TANNISH WHITE	LSE	MST	1 1 14 16	HNU 3.0	Same as above interval. Rock fragments and sand (white quartzite).
-3	3			No Sample Recovered						
-4	4		75	Silty sand, SM	GRAYISH BROWN	FRM	MST	13 15 19 18	HNU 3.0	Silt and sand mottled.
-5	5			Poorly graded sand, SP	ORANGE BROWN	LSE	MST		HNU 3.0	
				No Sample Recovered						
-6	6		100	Poorly graded sand, SP	ORANGE BROWN	LSE	MST	11 6 5 5	HNU 3.0	Same lithology as above interval.
-7	7									
-8	8		100	Poorly graded sand, SP	BROWN	LSE	MST	10 7 8 5	HNU 3.0	
-9	9									
-10	10		100	Poorly graded sand, SP	BROWN	LSE	MST	13 15 8 3	HNU 3.0	Iron oxide banding. Uniform bands from lt. orange to dk org. Some bands highly distinct.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.00	
SITE NAME : MAIN POST AREA 3		LOGGER : K. VALENTI	
BORING ID : MP3-SB2		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/15/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/15/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	BROWN	LSE	MST		HNU 3.0	Iron oxide banding. Uniform bands from lt. orange to dk org. Some bands highly distinct.
-11	11									
-12	12		50	Silty sand, SM	BROWNISH GRAY	FRM	SAT	11 11 13 14	HNU 0.0	Gray mottles noted. Water at 12' bgs. TD of borehole.
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
MP3-SB2	1	1	0.00	0.20	SPS		0	FM	65	35	0	0		NON	MOD	LSE	MST	
MP3-SB2	1	2	0.20	0.50	SPS		0	FM	65	35	0	0						
MP3-SB2	1	3	0.50	1.50	SPS		0	FM	65	35	0	0						
MP3-SB2	1	4	1.50	2.00	SPS	CM	80	MC	20	0	0	0		NON	POR	LSE	DRY	
MP3-SB2	2	1	2.00	2.80	SPS	C	70	CM	30	0	0	0		NON	POR	LSE	MST	
MP3-SB2	2	2	2.80	4.00	SPS		0		0	0	0	0						
MP3-SB2	3	1	4.00	5.00	SPS		0	MF	60	40	0	0		LOW	MOD	FRM	MST	
MP3-SB2	3	2	5.00	5.50	SPS		0	FM	100	0	0	0		NON	WEL	LSE	MST	
MP3-SB2	3	3	5.50	6.00	SPS		0		0	0	0	0						
MP3-SB2	4	1	6.00	8.00	SPS		0	MF	100	0	0	0		NON	WEL	LSE	MST	
MP3-SB2	5	1	8.00	10.00	SPS		0	FM	100	0	0	0		NON	WEL	LSE	MST	
MP3-SB2	6	1	10.00	12.00	SPS		0	MF	100	0	0	0		NON	WEL	LSE	MST	
MP3-SB2	7	1	12.00	13.00	SPS		0		60	35	5	0		LOW	MOD	FRM	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

CHARLES WOOD
BOREHOLE LOGS AND WELL COMPLETION SUMMARIES

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : CW1-MW26 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/19/94 *END DATE :* 12/19/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	60.540
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32591

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sampled soils for TCE+30; TAL
Latitude-North: 40 degrees 17' 44.5"
Longitude-West: 74 degrees 05' 17.7"

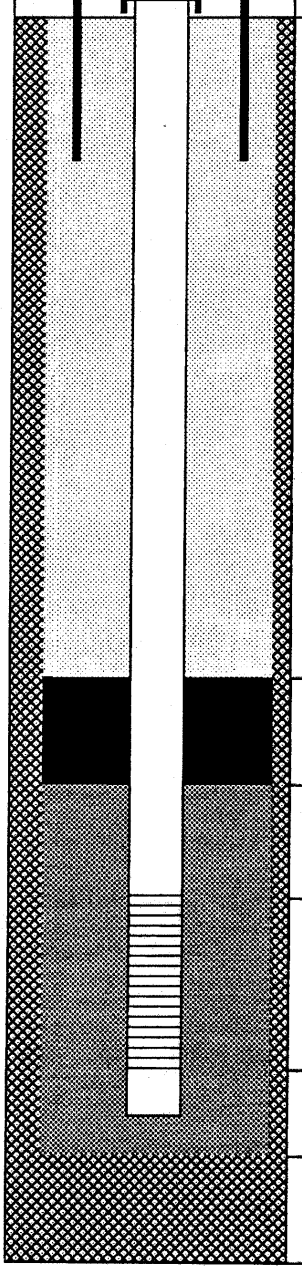
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	CW1-MW26
START DATE	12/19/94
COMPLETION DATE	12/19/94

WATER LEVELS



DEPTH		ELEV.
1.92	TC	62.46
0.00	GS	60.54
2.00	BN	58.54
4.00	SP	56.54
5.00	SC	55.54
14.54	BS	46.00
15.00	TD	45.54

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.92 ***ft.*** ***Protective Casing:*** 2.08 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 2.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 2.00 to 4.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 4.00 to 16.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/20/95
Method Surge block/overpumping
Yield 1 gpm ***Purged Volume*** 85 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW1-MW26		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/19/94	
ELEVATION : 60.540 surveyed		DATE COMPLETED : 12/19/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
59	1		100	Poorly graded sand, SP	YLLWSH LT BROWN	SFT	MST	3 4 7 9	HNU 0.0	Top 3" consist of topsoil with organics.
58	2		100	Poorly graded sand, SP	YLLWSH LT BROWN	SFT	MST	6 6 7 8	HNU 0.0	
57	3									
56	4		100	Poorly graded sand, SP	YLLWSH LT BROWN	SFT	MST	5 3 2 4	HNU 0.0	Mild iron (Fe) banding throughout spoon.
55	5									
54	6		100	Poorly graded sand, SP	YELLOW LT BROWN	LSE	SAT	5 3 1 1	HNU 0.0	3" spoon used. Water at 6.1' bgs. Sample CW01-SB06-A02 collected. Mild mottling noted.
53	7									
52	8		100	Poorly graded sand, SP	YELLOW LT BROWN	LSE	SAT	1 2 5 6	HNU 0.0	Collected sample CW01-SB26-A02.
51	9									
50	10		100	Poorly graded sand, SP	YLLWSH LT BROWN	SFT	SAT	1 1 2 2	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	K. VALENTI
BORING ID :	CW1-MW26	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/19/94
ELEVATION :	60.540 surveyed	DATE COMPLETED :	12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
49	11			Poorly graded sand, SP	YLLWSH LT BROWN	SFT	SAT		HNU 0.0	
48	12		100	Poorly graded sand, SP	YLLWSH LT BROWN	LSE	SAT	2 4 4 6	HNU 0.0	Some gray mottles noted.
47	13									
46	14			Interval Not Sampled						Augered interval. Set well at 15' bgs. TD of borehole 16' bgs.
45	15									
44	16									
43	17									
42	18									
41	19									
40	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW1-MW26	1	1	0.00	2.00	SPS		0	F	100	0	0	0		NON	WEL	SFT	MST	
CW1-MW26	2	1	2.00	4.00	SPS		0	F	95	5	0	0		NON	WEL	SFT	MST	
CW1-MW26	3	1	4.00	6.00	SPS		0		95	5	0	0		NON	WEL	SFT	MST	
CW1-MW26	4	1	6.00	8.00	SPS		0	F	98	2	0	0		NON	WEL	LSE	SAT	
CW1-MW26	5	1	8.00	10.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW26	6	1	10.00	12.00	SPS		0	F	100	0	0	0		NON	WEL	SFT	SAT	
CW1-MW26	7	1	12.00	14.00	SPS		0	F	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW26	8	1	14.00	16.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW1-MW27 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/19/94 *END DATE :* 12/19/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2: 2.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : SPS *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	60.810
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32592

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sampled TCE+30, TAL
Latitude-North: 40 deg 17' 44.6"
Longitude-West: 74 deg 05' 17.8"

GEOLIS Copyright (c) 1990, Roy F: WESTON, Inc.

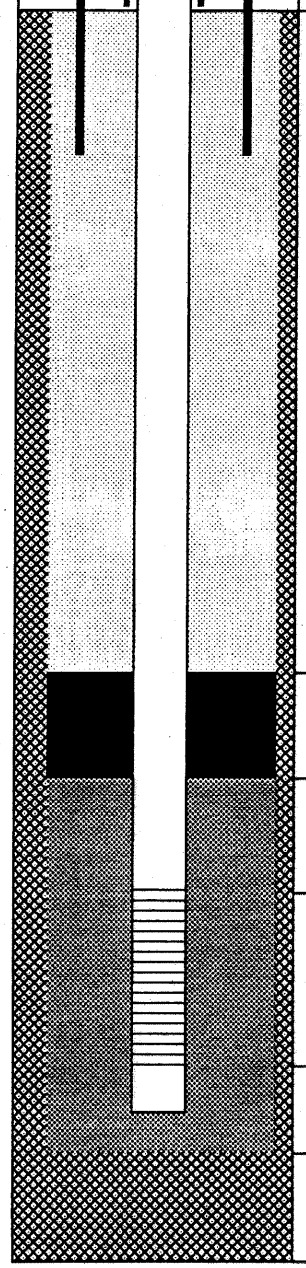
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	CW1-MW27
START DATE	12/19/94
COMPLETION DATE	12/19/94

WATER LEVELS



DEPTH		***ELEV.***
1.75	*TC*	62.56
0.00	*GS*	60.81
2.00	*BN*	58.81
4.00	*SP*	56.81
5.00	*SC*	55.81
14.54	*BS*	46.27
15.00	*TD*	45.81

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.75 ***ft.*** ***Protective Casing:*** 1.95 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 2.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 2.00 to 4.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 4.00 to 16.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/20/95
Method Surge Blocking/Overdril
Yield 1-2 gpm ***Purged Volume*** 128 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW1-MW27		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/19/94	
ELEVATION : 60.810 surveyed		DATE COMPLETED : 12/19/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
59	1		100	Poorly graded sand, SP	YELLOW BROWN	LSE	MST	6 5 4 4	HNU 0.0	Top 2" of SPS is topsoil and organics.
58	2		100	Poorly graded sand, SP	YELLOW BROWN	LSE	MST	3 2 1 1	HNU 4.0	Same lithology as above interval.
57	3									
56	4		100	Poorly graded sand, SP	YELLOW BROWN	LSE	SAT	1 2 1 2	HNU 6.0	First occurance of water at 5.8" bgs. Same lithology as above interval.
55	5									
54	6		100	Poorly graded sand, SP	YELLOW LT BROWN	LSE	SAT	3 2 2 3	HNU 0.0	3" SPS used. Collected sample CW1-SP27 (MW27) A02 at 7' bgs.
53	7									
52	8		100	Poorly graded sand, SP	YLLWSH LT BROWN	LSE	SAT	3 3 4 5	HNU 0.0	Same lithology as last spoon. 9-10' bgs pieces of wood and sharp change in color to lt. grysh brn
51	9									
50	10		100	Poorly graded sand, SP	LT GRY YLW-LT B	LSE	SAT	1 1 2 2	HNU 0.0	Gray mottles, some slight yellow-orange banding.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	16.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	K. VALENTI
BORING ID :	CW1-MW27	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/19/94
ELEVATION :	60.810 surveyed	DATE COMPLETED :	12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
49	11			Poorly graded sand, SP	LT GRY YLW-LT B	LSE	SAT		HNU 0.0	Gray mottles, some slight yellow-orange banding.
48	12		100	Poorly graded sand, SP	LT YLLWSH BROWN	LSE	SAT	3 4 3 4	HNU 0.0	Gray mottles, some banding.
47	13									
46	14		100	Poorly graded sand, SP	YLLWSH LT BROWN	LSE	SAT	3 4 4 6	HNU 0.0	Mottles, Fe banding (orange) towards bottom of sps. TD of hole 16'bgs
45	15									
44	16									
43	17									
42	18									
41	19									
40	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW1-MW27	1	1	0.00	2.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	MST	
CW1-MW27	2	1	2.00	4.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	MST	
CW1-MW27	3	1	4.00	6.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW27	4	1	6.00	8.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW27	5	1	8.00	10.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW27	6	1	10.00	12.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW27	7	1	12.00	14.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	
CW1-MW27	8	1	14.00	16.00	SPS		0	F	100	0	0	0		NON	WEL	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : CW1-MW28 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/19/94 *END DATE :* 12/19/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	60.730
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32593

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 degrees 17' 44.8"
Longitude-West: 74 degrees 05' 17.7"

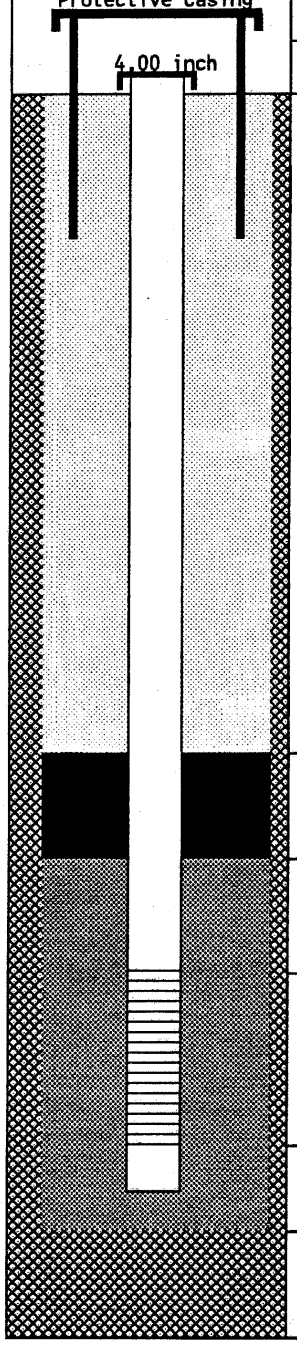
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	*DRILLING FIRM*	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	*INSPECTOR*	P. THOMAS

WELL ID	CW1-MW28
START DATE	12/19/94
COMPLETION DATE	12/19/94

WATER LEVELS



DEPTH		*ELEV.*
2.16	*TC*	62.89
0.00	*GS*	60.73
0.50	*BN*	60.23
3.00	*SP*	57.73
5.00	*SC*	55.73
14.54	*BS*	46.19
15.00	*TD*	45.73

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 5.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.16 *ft.* *Protective Casing:* 2.44 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 0.50 *ft.*

Seal Type: BENTONITE SLURRY *Interval:* 0.50 to 3.00 *ft.*

Sand Pack Type : NO. 1 MORIE *Interval:* 3.00 to 15.00 *ft.*
Grain Size : UNIFORM *Median Diameter:*
Screen Diameter: 4.00 *Interval:* 5.00 to 14.54 *ft.*
Type : PVC *Slots:* 0.010 *inches*

Silt Trap Interval: 14.54 to 15.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date 01/20/95
Method Surge blocking/overpump
Yield ~2 gpm *Purged Volume* 147 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	CW1-MW28	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/19/94
ELEVATION :	60.730 surveyed	DATE COMPLETED :	12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			70	Sandy silt, ML	BROWN	SFT	MST	4 3 4 5	HNU 0.0	Fill. Topsoil.
				Poorly graded sand, SP	ORANGE BROWN	LSE	MST		HNU 0.0	Fill.
59	1									
				No Sample Recovered						
58	2		60	Poorly graded sand, SP	ORG/OLV BRN	LSE	MST	3 5 4 3	HNU 0.0	Fill.
57	3			No Sample Recovered						
56	4		50	Poorly graded sand, SP	OLV/ORG BROWN	LSE	MST	3 4 3 3	HNU 0.0	Fill.
55	5			No Sample Recovered						
54	6		100	Poorly graded sand, SP	OLIVE	LSE	MST	3 4 3 4	HNU 0.0	Fill. Saturation observed at 7.8' bgs.
53	7									
52	8		100	Poorly graded sand, SP	OLV/ORG BROWN	LSE	SAT	2 3 5 5	HNU 0.0	Fill.
51	9									
50	10		100	Poorly graded sand, SP	YELLOW BROWN	LSE	SAT	3 4 3 4	HNU 0.0	Fill.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 15.00
SITE NAME : CHARLES WOOD AREA		LOGGER	: P. THOMAS
BORING ID : CW1-MW28		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B-57
EASTING : 0.0000 estimated		DATE STARTED	: 12/19/94
ELEVATION : 60.730 surveyed		DATE COMPLETED	: 12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	YELLOW BROWN	LSE	SAT		HNU 0.0	Fill.
49	11									
48	12		100	Poorly graded sand, SP	YELLOW BROWN	LSE	SAT	4 4 3 4	HNU 0.0	Fill.
47	13									
46	14			Interval Not Sampled						Augered interval.
45	15									
44	16									
43	17									
42	18									
41	19									
40	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW1-MW28	1	1	0.00	0.50	SPS		0	MF	40	35	0	25		NA	POR	SFT	MST	
CW1-MW28	1	2	0.50	1.40	SPS		0	MF	95	5	0	0		NON	WEL	LSE	MST	
CW1-MW28	1	3	1.40	2.00	SPS		0		0	0	0	0						
CW1-MW28	2	1	2.00	3.20	SPS		0	MF	95	5	0	0		NON	WEL	LSE	MST	
CW1-MW28	2	2	3.20	4.00	SPS		0		0	0	0	0						
CW1-MW28	3	1	4.00	5.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	MST	
CW1-MW28	3	2	5.00	6.00	SPS		0		0	0	0	0						
CW1-MW28	4	1	6.00	8.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	MST	
CW1-MW28	5	1	8.00	10.00	SPS		0	MF	95	5	0	0		NON	MOD	LSE	SAT	
CW1-MW28	6	1	10.00	12.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW28	7	1	12.00	14.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW28	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW1-MW29 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/19/94 *END DATE :* 12/19/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	60.410
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32590

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude North: 40 degrees 17' 44.7"
Longitude West: 74 degrees 05' 17.4"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

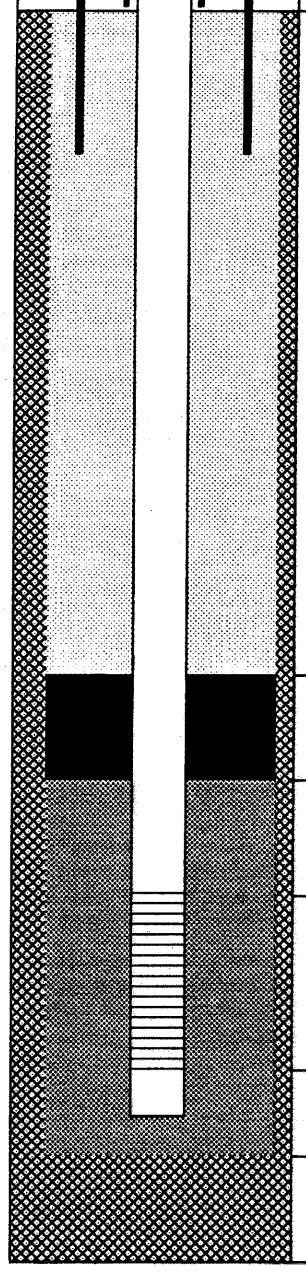
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	CW1-MW29
START DATE	12/19/94
COMPLETION DATE	12/19/94

WATER LEVELS



DEPTH		***ELEV.***
2.03	***TC***	62.44
0.00	***GS***	60.41
0.50	***BN***	59.91
3.00	***SP***	57.41
5.00	***SC***	55.41
14.54	***BS***	45.87
15.00	***TD***	45.41

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.03 ***ft.*** ***Protective Casing:*** 2.32 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 3.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 5.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/20/95
Method Surge blocking/overpump
Yield 2 gpm ***Purged Volume*** 158 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	CW1-MW29	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/19/94
ELEVATION :	60.410 surveyed	DATE COMPLETED :	12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Sandy silt, ML	BROWN	SFT	MST	12 12 15	HNU 0.0	Fill and topsoil.
				Poorly graded sand, SP	OLIVE BROWN	LSE	MST	7	HNU 0.0	Fill.
59	1									
58	2		90	Poorly graded sand, SP	ORANGE/OLIVE BR	LSE	MST	12 10 5 6	HNU 0.0	
57	3									
				No Sample Recovered						
56	4		100	Poorly graded sand, SP	ORANGE/OLIVE BR	LSE	WET	6 4 5 3	HNU 0.0	Fill.
55	5									
54	6		100	Poorly graded sand, SP	ORANGE/OLIVE BR	LSE	SAT	3 1 1 4	HNU 2.0	Saturated conditions observed at ~6.4' bgs.
53	7									
				Poorly graded sand with silt, SP-SM	GRAY	LSE	SAT		HNU 0.0	Fe stained lamine at bottom of interval; sharp color change.
52	8		100	Poorly graded sand with silt, SP-SM	GRAY	LSE	SAT	3 6 6 9	HNU 0.1	Fill.
				Poorly graded sand, SP	BROWN	LSE	SAT		HNU 1.0	Fill.
51	9									
50	10		100	Poorly graded sand, SP	OLIVE BROWN	LSE	SAT	2 2 6 10	HNU 0.0	Fill.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	CW1-MW29	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/19/94
ELEVATION :	60.410 surveyed	DATE COMPLETED :	12/19/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
49	11			Poorly graded sand, SP	OLIVE BROWN	LSE	SAT		HNU 0.0	Fill.
48	12		100	Poorly graded sand, SP	OLIVE BROWN	LSE	SAT	3 4 3 4	HNU 0.0	Fill.
47	13									
46	14		75	Poorly graded sand, SP	OLIVE BROWN	LSE	SAT	10 14 16 10	HNU 0.5	Fill.
45	15			Silty sand, SM	OLIVE BROWN	LSE	SAT		HNU 0.5	Fill, Fe stained lamina. TD of borehole 16' bgs.
				No Sample Recovered						
44	16									
43	17									
42	18									
41	19									
40	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW1-MW29	1	1	0.00	0.40	SPS		0	MF	45	35	0	20		NA	POR	SFT	MST	
CW1-MW29	1	2	0.40	2.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	MST	
CW1-MW29	2	1	2.00	3.80	SPS		0	MF	95	5	0	0		NA	WEL	LSE	MST	
CW1-MW29	2	2	3.80	4.00	SPS		0		0	0	0	0						
CW1-MW29	3	1	4.00	6.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	WET	
CW1-MW29	4	1	6.00	7.60	SPS		0	MF	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW29	4	2	7.60	8.00	SPS		0	MF	90	10	0	0		NA	WEL	LSE	SAT	
CW1-MW29	5	1	8.00	8.40	SPS		0	MF	90	10	0	0		NON	WEL	LSE	SAT	
CW1-MW29	5	2	8.40	10.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	SAT	
CW1-MW29	6	1	10.00	12.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	SAT	
CW1-MW29	7	1	12.00	14.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW29	8	1	14.00	15.00	SPS		0	MF	95	5	0	0		NON	WEL	LSE	SAT	
CW1-MW29	8	2	15.00	15.50	SPS		0	F	85	13	2	0		NON	WEL	LSE	SAT	
CW1-MW29	8	3	15.50	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : CW2-MW30 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/16/94 *END DATE :* 12/16/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) :

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2: 3.00
INTERVAL: 12.00 ft. to 14.00 ft. BGS
METHOD : SPS *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	49.470
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32594

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

1st location moved after collecting one spoon with no rec.
Latitude-North: 40 deg 17' 43.3"
Longitude-West: 74 deg 05' 10.4"

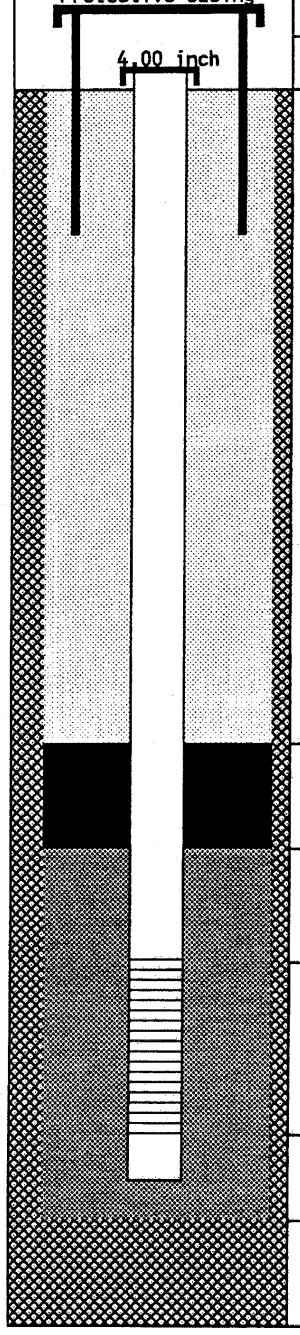
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	CW2-MW30
START DATE	12/16/94
COMPLETION DATE	12/16/94

WATER LEVELS



DEPTH		*ELEV.*
2.24	*TC*	51.71
0.00	*GS*	49.47
2.00	*BN*	47.47
4.00	*SP*	45.47
6.00	*SC*	43.47
15.54	*BS*	33.93
16.00	*TD*	33.47

DRILLING SUMMARY

Driller	WELLS REEVE
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 6.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.24 ***ft.*** ***Protective Casing:*** 2.68 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 2.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 2.00 to 4.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 4.00 to 16.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 6.00 to 15.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 15.54 to 16.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/08/95		
Method	Bailing/surge blocking		
Yield	1 gpm	***Purged Volume***	68 gal

COMMENTS

TC = Top of Casing	SP = Top Sand Pack	= Grout
GS = Ground Surface	SC = Top Screen	= Seal
BN = Top Seal	BS = Bottom Screen	= Sand Pack
	TD = Total Depth	= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW2-MW30		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/16/94	
ELEVATION : 49.470 surveyed		DATE COMPLETED : 12/16/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			65	Silty sand, SM	BROWN	LSE	MST	10 11 10 12	HNU 2.0	Top 3" bgs = topsoil. Some organics-roots. 1st hole abandoned with HNu=10.0.
48	1			Poorly graded sand with silt, SP-SM	LT BROWN	LSE	MST		HNU 0.0	Lt brown sand (little silt, mottles noted.)
				No Sample Recovered						
47	2		65	Silty sand, SM	DK GRAY TO BRN	LSE	WET	8 9 13 11	HNU 20.0	Noted mottling with iron (Fe) staining.
				Silty sand, SM	DK GRAY	SFT	WET		HNU 20.0	Fine silt (some) finer sands. SPS is wet.
46	3			No Sample Recovered						
45	4		75	Silty sand, SM	GRAY BROWN	SFT	WET	15 17 11 7	HNU 7.0	Gray mottles noted.
				Sandy elastic silt, MH	GREENISH GRAY	SFT	WET		HNU 0.0	6" piece of wood noted at bottom of spoon/
44	5			No Sample Recovered						
43	6		20	Sandy elastic silt, MH	GRAYISH GREEN	SFT	WET	5 6 5 4	HNU 3.0	Same as above interval. Wood pieces.
				No Sample Recovered						
42	7									
41	8		50	Sandy silt, ML	GREENISH GRAY	SFT	WET	5 4 4 3	HNU 150.0	3" SPS used. Same lith. as noted in previous interval. Sampled W2-SB30
40	9			No Sample Recovered						
39	10		80	Silty sand, SM	GREENISH GRAY	LSE	WET		HNU 0.0	3" SPS used. Fine sands little silt.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW2-MW30		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/16/94	
ELEVATION : 49.470 surveyed		DATE COMPLETED : 12/16/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GREENISH GRAY	LSE	WET		HNU 0.0	3" SPS used. Fine sands little silt.
38	11									
				No Sample Recovered						
37	12		100	Silty sand, SM	GREENISH GRAY	SFT	WET	4 8 4 3	HNU 0.0	Mostly quartz sand.
36	13									
35	14		50	Well-graded sand, SW	GREENISH GRAY	LSE	MST	3 3	HNU 0.0	Some white quartz stones.
				Elastic silt, MH	DK GRAY BLACK	FRM	MST	2 3	HNU 0.0	Set well at 16' bgs. TD of borehole 16' bgs.
34	15			No Sample Recovered						
33	16									
32	17									
31	18									
30	19									
29	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW2-MW30	1	1	0.00	0.80	SPS		1		60	35	0	4		NON	MOD	LSE	MST	
CW2-MW30	1	2	0.80	1.30	SPS		0		90	10	0	0		NON	MOD	LSE	MST	
CW2-MW30	1	3	1.30	2.00	SPS		0		0	0	0	0						
CW2-MW30	2	1	2.00	2.80	SPS		1		55	39	5	0		LOW	MOD	LSE	WET	
CW2-MW30	2	2	2.80	3.30	SPS		0		70	30	0	0		LOW	WEL	SFT	WET	
CW2-MW30	2	3	3.30	4.00	SPS		0		0	0	0	0						
CW2-MW30	3	1	4.00	4.50	SPS		0		65	35	0	0		LOW	POR	SFT	WET	
CW2-MW30	3	2	4.50	5.50	SPS		0		35	60	5	0		MOD	MOD	SFT	WET	
CW2-MW30	3	3	5.50	6.00	SPS		0		0	0	0	0						
CW2-MW30	4	1	6.00	6.40	SPS		0		40	60	0	0		MOD	WEL	SFT	WET	
CW2-MW30	4	2	6.40	8.00	SPS		0		0	0	0	0						
CW2-MW30	5	1	8.00	9.00	SPS		0		40	60	0	0		LOW	MOD	SFT	WET	
CW2-MW30	5	2	9.00	10.00	SPS		0		0	0	0	0						
CW2-MW30	6	1	10.00	11.60	SPS		0	F	85	15	0	0		LOW	WEL	LSE	WET	
CW2-MW30	6	2	11.60	12.00	SPS		0		0	0	0	0						
CW2-MW30	7	1	12.00	14.00	SPS		5		80	15	0	0		NON	MOD	SFT	WET	
CW2-MW30	8	1	14.00	14.30	SPS		10		80	5	0	0		NON	POR	LSE	MST	
CW2-MW30	8	2	14.30	15.00	SPS		0		0	90	10	0		MOD	WEL	FRM	MST	
CW2-MW30	8	3	15.00	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW2-MW31 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/16/94 *END DATE :* 12/16/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	49.670
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32595

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
SPS/augered to 8' bgs. Severed wire (subsurface) @approx. 2' bgs. Abandoned location. Moved location 1'. Latitude-North: 40 deg 17' 43.6"/Longitude-West: 74 deg 05' 10.5"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

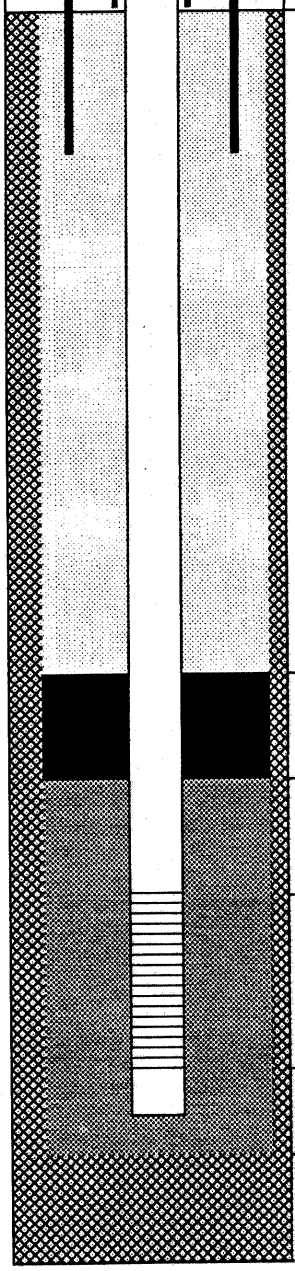
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	CW2-MW31
START DATE	12/16/94
COMPLETION DATE	12/16/94

WATER LEVELS



DEPTH		*ELEV.*
1.91	*TC*	51.58
0.00	*GS*	49.67
1.00	*BN*	48.67
3.00	*SP*	46.67
5.00	*SC*	44.67
14.54	*BS*	35.13
15.00	*TD*	34.67

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.91 ***ft.*** ***Protective Casing:*** 2.51 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 16.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.45 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/05/95
Method Bailing
Yield <1 gpm ***Purged Volume*** 25 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW2-MW31		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/16/94	
ELEVATION : 49.670 surveyed		DATE COMPLETED : 12/16/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
48	1		100	Silty sand, SM	BROWN	LSE	MST	5 9 6 7	HNU 3.0	Fill. Top 3" organics/ topsoil. Brown little silt, mostly sand.
47	2		75	Silty sand, SM	BROWN	SFT	MST	10 10 10 11	HNU 1.0	Fill. Same lithology as previous interval. Some orange iron (Fe) staining noted throughout spoon.
46	3			Silty sand, SM	GRAY	FRM	MST	5 9 6 7	HNU 1.0	Fill. More silt than above interval. Firm but able to crush between fingers.
				No Sample Recovered						
45	4		50	Sandy elastic silt, MH	DK GRAY	FRM	MST	7 7 9 5	HNU 0.0	Fill. Same as previous interval. More silt/clay texture. Water present at 5' bgs.
44	5			No Sample Recovered						
43	6		75	Sandy elastic silt, MH	DK GRAY	SFT	WET	4 4 7 9	HNU 2.0	Same lithology as previous interval.
42	7			Silty sand, SM	GRAYISH GREEN	SFT	WET		HNU 2.0	Uncertain. Mostly fine sands. Sample CW2-SB31 collected. Wine at depth noted by auger cuttings.
				No Sample Recovered						
41	8		60	Silty sand, SM	GRAYISH GREEN	SFT	SAT	2 2 2 6	HNU 0.0	Same lithology previous interval. Sample CW2-SB31 collected.
40	9			No Sample Recovered						
39	10		75	Silty sand, SM	GRAY GREEN	SFT	SAT	2 2 4 3	HNU 0.0	Uncertain.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 16.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : CW2-MW31		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/16/94	
ELEVATION : 49.670 surveyed		DATE COMPLETED : 12/16/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
38	11			Silty sand, SM	GRAY GREEN	SFT	SAT		HNU 0.0	Uncertain.
				No Sample Recovered						
37	12		75	Poorly graded sand with silt, SP-SM	DK GREEN GRAY	LSE	SAT	2 3 2 6	HNU 0.0	Mostly sand with little silt.
36	13			Elastic silt, MH	DK GRAY	FRM	MST		HNU 0.0	
				No Sample Recovered						
35	14		50	Elastic silt, MH	DK GRAY	FRM	MST	5 5 10 7	HNU 0.0	Same lithology as previous interval.
34	15			No Sample Recovered						
33	16									
32	17									
31	18									
30	19									
29	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW2-MW31	1	1	0.00	2.00	SPS		0		80	20	0	0		LOW	MOD	LSE	MST	
CW2-MW31	2	1	2.00	3.00	SPS		0		85	15	0	0		LOW	MOD	SFT	MST	
CW2-MW31	2	2	3.00	3.50	SPS		0		60	40	0	0		LOW	WEL	FRM	MST	
CW2-MW31	2	3	3.50	4.00	SPS		0		0	0	0	0						
CW2-MW31	3	1	4.00	5.00	SPS		0	F	40	55	5	0		MOD	WEL	FRM	MST	
CW2-MW31	3	2	5.00	6.00	SPS		0		0	0	0	0						
CW2-MW31	4	1	6.00	7.00	SPS		0		40	55	5	0		MOD	MOD	SFT	WET	
CW2-MW31	4	2	7.00	7.50	SPS		0	F	80	20	0	0		LOW	WEL	SFT	WET	
CW2-MW31	4	3	7.50	8.00	SPS		0		0	0	0	0						
CW2-MW31	5	1	8.00	9.20	SPS		0		80	20	0	0		LOW	WEL	SFT	SAT	
CW2-MW31	5	2	9.20	10.00	SPS		0		0	0	0	0						
CW2-MW31	6	1	10.00	11.50	SPS		0		80	20	0	0		LOW	WEL	SFT	SAT	
CW2-MW31	6	2	11.50	12.00	SPS		0		0	0	0	0						
CW2-MW31	7	1	12.00	13.00	SPS		0		90	10	0	0		NON	WEL	LSE	SAT	
CW2-MW31	7	2	13.00	13.50	SPS		0		0	80	20	0		MOD	WEL	FRM	MST	
CW2-MW31	7	3	13.50	14.00	SPS		0		0	0	0	0						
CW2-MW31	8	1	14.00	15.00	SPS		0		0	80	20	0		MOD	WEL	FRM	MST	
CW2-MW31	8	2	15.00	16.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data

Roy F. WESTON, Inc.

BOREHOLE ID : CW2-MW32 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/16/94 *END DATE :* 12/16/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	49.470
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32596

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude North: 40 deg 17' 43.6"
Longitude West: 74 deg 05' 10.3"

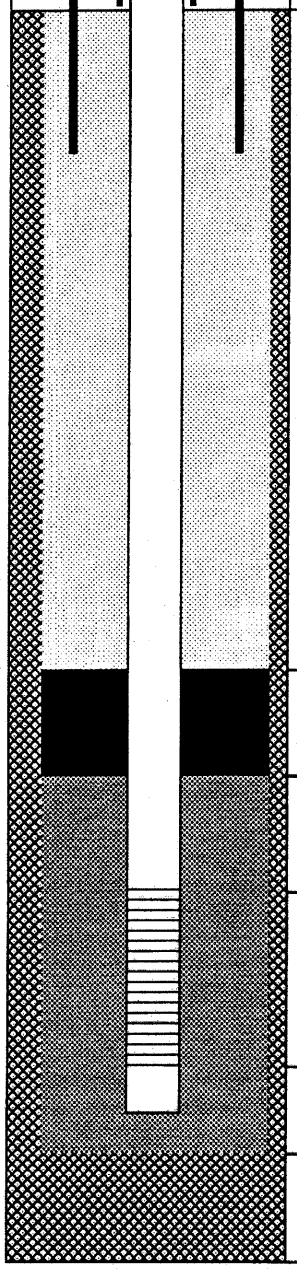
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	P. THOMAS

WELL ID	CW2-MW32
START DATE	12/16/94
COMPLETION DATE	12/16/94

WATER LEVELS



DEPTH		***ELEV.***
1.91	*TC*	51.38
0.00	*GS*	49.47
0.80	*BN*	48.67
3.00	*SP*	46.47
5.00	*SC*	44.47
14.54	*BS*	34.93
15.00	*TD*	34.47

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	NONE
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.91 ***ft.*** ***Protective Casing:*** 2.61 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.80 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.80 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 5.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/05/95		
Method	Bailing/surge blocking		
Yield	1 gpm	***Purged Volume***	46 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths measured below ground surface.

NOTE: Well Diagram not to Scale ***Elevations are feet above mean sea level***

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	CW2-MW32	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/16/94
ELEVATION :	49.470 surveyed	DATE COMPLETED :	12/16/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			40	Silty sand, SM	BROWN	SFT	SAT	5 5 10 12	HNU 0.0	0-0.4 topsoil.
48	1			No Sample Recovered						
47	2		20	Silty sand with gravel, SM	BROWN	LSE	SAT	13 20 10 10	HNU 0.0	Note: Top 4-4.1 - gravel (concrete?)
				No Sample Recovered						
46	3									
45	4		20	Silty sand, SM	GRAY	SFT	SAT	5 5 4 5	HNU 0.0	
				No Sample Recovered						
44	5									
43	6		60	Silty sand, SM	BROWN/GRAY	LSE	SAT	3 5 7 14	HNU 0.0	
42	7			No Sample Recovered						
41	8		65	Silty sand, SM	OLIVE/GRAY	LSE	SAT	4 7 9 7	HNU 0.0	
40	9			Silty sand with gravel, SM	BROWN	LSE	SAT		HNU 0.0	
				No Sample Recovered						
39	10		75	Sandy silt, ML	GRAY	SFT	WET	5 4 5 5	HNU 0.0	v. micaceous

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 15.00
SITE NAME : CHARLES WOOD AREA		LOGGER	: P. THOMAS
BORING ID : CW2-MW32		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B-57
EASTING : 0.0000 estimated		DATE STARTED	: 12/16/94
ELEVATION : 49.470 surveyed		DATE COMPLETED	: 12/16/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
38	11			Sandy silt, ML	GRAY	SFT	WET		HNU 0.0	v. micaceous
				No Sample Recovered						
37	12		60	Sandy silt, ML	GRAY	SFT	WET	3 3 6 12	HNU 0.0	
36	13			No Sample Recovered						
35	14			Interval Not Sampled						Set well at 15' bgs.
34	15									
33	16									
32	17									
31	18									
30	19									
29	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW2-MW32	1	1	0.00	0.80	SPS	C	10	MF	45	25	5	15		NON	POR	SFT	SAT	
CW2-MW32	1	2	0.80	2.00	SPS		0		0	0	0	0						
CW2-MW32	2	1	2.00	2.40	SPS	MF	15	MF	55	25	5	0		NON	POR	LSE	SAT	
CW2-MW32	2	2	2.40	4.00	SPS		0		0	0	0	0						
CW2-MW32	3	1	4.00	4.40	SPS		0	MF	60	30	10	0		LOW	MOD	SFT	SAT	
CW2-MW32	3	2	4.40	6.00	SPS		0		0	0	0	0						
CW2-MW32	4	1	6.00	7.20	SPS		0	MFC	75	20	5	0		NON	MOD	LSE	SAT	
CW2-MW32	4	2	7.20	8.00	SPS		0		0	0	0	0						
CW2-MW32	5	1	8.00	9.00	SPS		0	MF	75	20	5	0		NON	MOD	LSE	SAT	
CW2-MW32	5	2	9.00	9.30	SPS	MCF	35	MF	50	15	0	0		NA	POR	LSE	SAT	
CW2-MW32	5	3	9.30	10.00	SPS		0		0	0	0	0						
CW2-MW32	6	1	10.00	11.50	SPS		0	F	40	55	5	0		NON	MOD	SFT	WET	
CW2-MW32	6	2	11.50	12.00	SPS		0		0	0	0	0						
CW2-MW32	7	1	12.00	13.20	SPS		0	F	40	55	5	0		NON	WEL	SFT	WET	
CW2-MW32	7	2	13.20	14.00	SPS		0		0	0	0	0						
CW2-MW32	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW2-MW33 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/15/94 *END DATE :* 12/15/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	49.180
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32597

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 43.3"
Longitude-West: 74 deg 05' 10.2"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

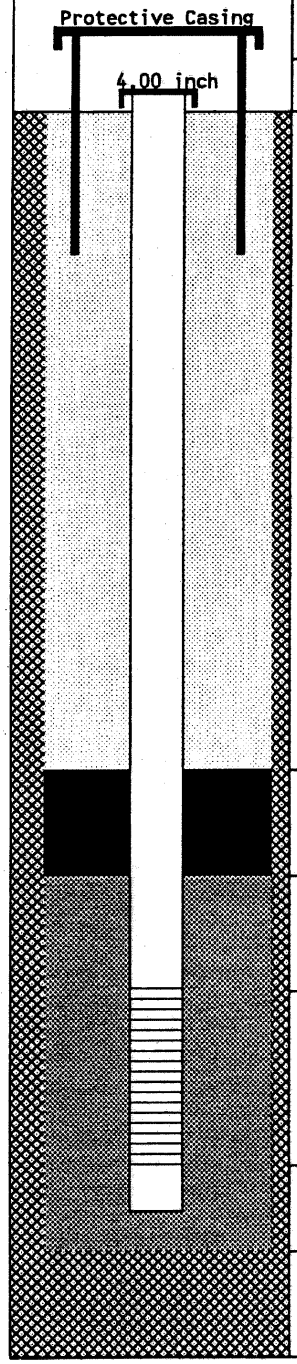
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	P. THOMAS

WELL ID	CW2-MW33
START DATE	12/15/94
COMPLETION DATE	12/15/94

WATER LEVELS



DEPTH		***ELEV.***
1.91	*TC*	51.09
0.00	*GS*	49.18
0.50	*BN*	48.68
3.00	*SP*	46.18
5.00	*SC*	44.18
14.54	*BS*	34.64
15.00	*TD*	34.18

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.91 ***ft.*** ***Protective Casing:*** 1.99 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 3 MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/24/95
Method Surge Blocking/Bailing
Yield 1 gpm ***Purged Volume*** 60 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 15.00
SITE NAME : CHARLES WOOD AREA		LOGGER	: P. THOMAS
BORING ID : CW2-MW33		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B-57
EASTING : 0.0000 estimated		DATE STARTED	: 12/15/94
ELEVATION : 49.180 surveyed		DATE COMPLETED	: 12/15/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			70	Silt with sand, ML	BROWN	SFT	MST	6 9 11 12	HNU 0.0	Topsoil: plant/grass fragments.
				Silty sand, SM	BROWN	SFT	MST		HNU 0.0	
48	1			No Sample Recovered						
47	2		60	Silty sand, SM	BROWN	SFT	MST	11 10 9 9	HNU 0.0	
46	3			No Sample Recovered						
45	4		80	Silty sand, SM	GRAY	SFT	SAT	3 3 3 4	HNU 0.1	
44	5			No Sample Recovered						
43	6		75	Silty sand, SM	GRAY	SFT	SAT	3 4 5 5	HNU 0.0	Note at 7.3 to 7.5' bgs occurrance of green sand layer (75% sand/25% silt)
42	7			Silty sand, SM	GREEN	LSE	SAT		HNU 0.0	
				No Sample Recovered						
41	8		60	Silty sand, SM	GREEN	LSE	SAT	6 5 5 6	HNU 0.0	
40	9			No Sample Recovered						
39	10		45	Silty sand, SM	GREEN	LSE	SAT	5 10 9 8	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	CW2-MW33	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/15/94
ELEVATION :	49.180 surveyed	DATE COMPLETED :	12/15/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GREEN	LSE	SAT		HNU 0.0	
38	11			No Sample Recovered						
37	12			No Sample Recovered				8 5 5 4 3		
36	13									
35	14			Interval Not Sampled						Augered interval.
34	15									
33	16									
32	17									
31	18									
30	19									
29	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW2-MW33	1	1	0.00	0.60	SPS		0	FM	15	30	15	40		NON	POR	SFT	MST	
CW2-MW33	1	2	0.60	1.40	SPS	FM	10	MFC	60	20	5	5		NON	MOD	SFT	MST	
CW2-MW33	1	3	1.40	2.00	SPS		0		0	0	0	0						
CW2-MW33	2	1	2.00	3.20	SPS		0	MFC	60	35	5	0		NON	MOD	SFT	MST	
CW2-MW33	2	2	3.20	4.00	SPS		0		0	0	0	0						
CW2-MW33	3	1	4.00	5.60	SPS		0	MFC	55	35	10	0		NON	MOD	SFT	SAT	
CW2-MW33	3	2	5.60	6.00	SPS		0		0	0	0	0						
CW2-MW33	4	1	6.00	7.30	SPS		0	MFC	55	35	10	0		NON	MOD	SFT	SAT	
CW2-MW33	4	2	7.30	7.50	SPS		0	MF	75	25	0	0		NA	MOD	LSE	SAT	
CW2-MW33	4	3	7.50	8.00	SPS		0		0	0	0	0						
CW2-MW33	5	1	8.00	9.20	SPS	F	10	MF	70	20	0	0		NA	MOD	LSE	SAT	
CW2-MW33	5	2	9.20	10.00	SPS		0		0	0	0	0						
CW2-MW33	6	1	10.00	10.90	SPS	F	10	MF	70	20	0	0		NON	MOD	LSE	SAT	
CW2-MW33	6	2	10.90	12.00	SPS		0		0	0	0	0						
CW2-MW33	7	1	12.00	14.00	SPS		0		0	0	0	0						
CW2-MW33	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : CW6-MW34 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/03/95 *END DATE :* 01/03/95

LOGGER/COMPANY : K VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

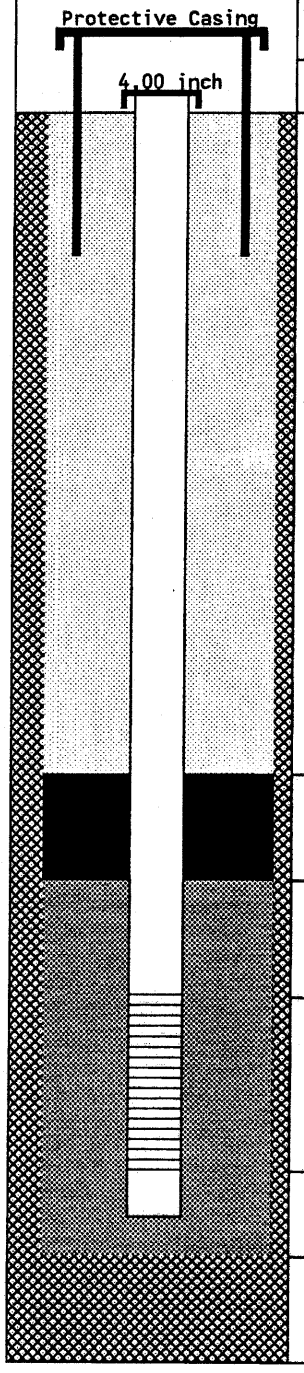
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA 6	***INSPECTOR***	K. VALENTI

WELL ID	CW6-MW34
START DATE	01/03/95
COMPLETION DATE	01/03/95

WATER LEVELS



DEPTH		***ELEV.***
1.79	***TC***	33.76
0.00	***GS***	31.97
1.00	***BN***	30.97
3.00	***SP***	28.97
4.50	***SC***	27.47
14.04	***BS***	17.93
14.50	***TD***	17.47

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 14.50 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.79 ***ft.*** ***Protective Casing:*** 2.20 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : MORIE #1 ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.04 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/06/95
Method Bailing/overpumping
Yield 3 gpm ***Purged Volume*** 150 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.50	
SITE NAME : CHARLES WOOD AREA 6		LOGGER : K VALENTI	
BORING ID : CW6-MW34		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/03/95	
ELEVATION : 0.000 estimated		DATE COMPLETED : 01/03/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			25	Silty sand with gravel, SM	BROWN	LSE	MST	10 10 13 11	HNU 0.0	Fill(?) Collected sample CW06-SB34-A01. 3" SPS used.
				No Sample Recovered						
-1	1									
-2	2		100	Poorly graded sand, SP	GRAYISH BROWN	LSE	WET	15 18 17 21	HNU 0.0	Fill(?). 3" SPS used. Collected samp. CW06-SB34 A02. Wet a2'bgs. Sands coarsens down. Fe stain.
-3	3									
-4	4		100	Poorly graded sand, SP	OLIVE GREEN-BRO	LSE	SAT	3 3 4 4	HNU 0.0	Colors: 4-5' olive green, 5-5.6' pale brown. 5.5-6' orange brown.
-5	5									
-6	6		100	Poorly graded sand, SP	BROWN	LSE	SAT	4 5 5 5		Colors: 6-6.5 brown, 6.9-7.6 orange, 7.5-8' greenish brown.
-7	7									
-8	8		100	Poorly graded sand, SP	BROWN	LSE	SAT	6 7 7 7	HNU 0.0	Color: 8-8.5' orange 8.5-10' greenish brown more olive/brown towards bottom of spoon.
-9	9									
-10	10		25	Poorly graded sand, SP	LT BROWN	LSE	SAT	10 10 13 15	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.50
SITE NAME :	CHARLES WOOD AREA 6	LOGGER :	K VALENTI
BORING ID :	CW6-MW34	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/03/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/03/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	LT BROWN	LSE	SAT		HNU 0.0	
				No Sample Recovered						
-11	11									
-12	12		100	Poorly graded sand, SP	LT BROWN	LSE	SAT	10 13 15 15	HNU 0.0	TD of borehole 14.5'. Lt orange banding from 13-13.8. 13-8-14 heavy Fe banding.
-13	13									
-14	14			Interval Not Sampled						Augered interval.
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW6-MW34	1	1	0.00	0.50	SPS		20		65	15	0	0		NON	POR	LSE	MST	
CW6-MW34	1	2	0.50	2.00	SPS		0		0	0	0	0						
CW6-MW34	2	1	2.00	4.00	SPS		0		100	0	0	0		NON	MOD	LSE	WET	
CW6-MW34	3	1	4.00	6.00	SPS		0		100	0	0	0		NON	MOD	LSE	SAT	
CW6-MW34	4	1	6.00	8.00	SPS		0	F	100	0	0	0		NON	MOD	LSE	SAT	
CW6-MW34	5	1	8.00	10.00	SPS		0		100	0	0	0		NON	MOD	LSE	SAT	
CW6-MW34	6	1	10.00	10.50	SPS		0	MF	100	0	0	0		NON	MOD	LSE	SAT	
CW6-MW34	6	2	10.50	12.00	SPS		0		0	0	0	0						
CW6-MW34	7	1	12.00	14.00	SPS		0		100	0	0	0		NON	MOD	LSE	SAT	
CW6-MW34	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW9-MW35 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/03/95 *END DATE :* 01/04/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLINGTON REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	29.270
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32600

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 48.9"
Longitude-West: 74 deg 04' 25.2"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

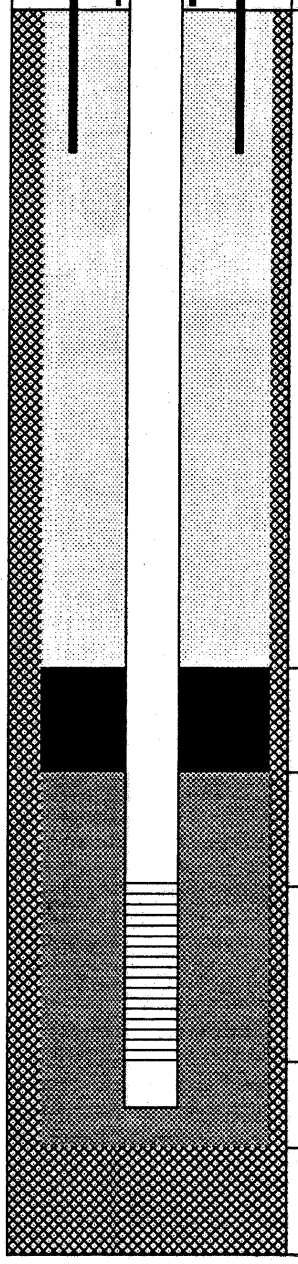
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA 9	***INSPECTOR***	P. THOMAS

WELL ID	CW9-MW35
START DATE	01/03/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		***ELEV.***
2.16	*TC*	31.43
0.00	*GS*	29.27
0.50	*BN*	28.77
3.00	*SP*	26.27
4.50	*SC*	24.77
14.01	*BS*	15.26
14.50	*TD*	14.77

DRILLING SUMMARY

Driller WELLINGTON REEVE
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.50 ***ft.***
Type :

Stick Up Inner Casing: 2.16 ***ft.*** ***Protective Casing:*** 2.46 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 SAND PACK ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.01 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.01 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/06/95
Method Surge blocking/bailing
Yield 5 gpm ***Purged Volume*** 225 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : CHARLES WOOD AREA 9		LOGGER : P. THOMAS	
BORING ID : CW9-MW35		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/03/95	
ELEVATION : 29.270 surveyed		DATE COMPLETED : 01/04/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			65	Silty sand, SM	DK BROWN	SFT	MST	6 8 9 11	HNU 0.0	Fill. Topsoil; plant/ grass fragments. M. qtz gravel ~0.9-1.0 bgs.
28	1			Poorly graded sand with silt, SP-SM	GRAY BROWN	LSE	WET		HNU 0.0	
				No Sample Recovered						
27	2		80	Silty sand, SM	OLV/GRAY/ORG/BR	LSE	WET	36 22 18 11	HNU 0.0	Color change from gray brown 2-2.45' to olive brown 2.45-2.7 bgs, and orange brown 2.7-3.6.
26	3									
				No Sample Recovered						
25	4		55	Poorly graded sand with silt and gravel,SP-SM	ORANGE BROWN	LSE	SAT	7 7 7 7	HNU 0.0	
				Silty sand, SM	OLIVE BROWN	LSE	SAT		HNU 0.0	
24	5			No Sample Recovered						
23	6		80	Silty sand, SM	OLIVE BROWN	SFT	SAT	8 6 7 6	HNU 0.0	Iron (Fe) stained laminae 6-7' bgs. 7-7.6' bgs. color change to gray brown, fining downward.
22	7									
				No Sample Recovered						
21	8		50	Silty sand, SM	OLIVE BROWN	SFT	SAT	6 6 6 7	HNU 0.0	Sand with silt laminae
20	9			No Sample Recovered						
19	10		30	Silty sand, SM	OLIVE BROWN	SFT	SAT	3 5 8 8	HNU 0.0	Strong presence of dark heavy minerals.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	0.00
SITE NAME :	CHARLES WOOD AREA 9	LOGGER :	P. THOMAS
BORING ID :	CW9-MW35	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/03/95
ELEVATION :	29.270 surveyed	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	OLIVE BROWN	SFT	SAT		HNU 0.0	Strong presence of dark heavy minerals.
				No Sample Recovered						
18	11									
17	12		50	Silty sand, SM	OLIVE BROWN	SFT	SAT	4 6 8 9	HNU 0.0	Strong presence of dark heavy minerals.
16	13			No Sample Recovered						
15	14			Interval Not Sampled						Interval not sampled, augered interval; set well at 14.5 bgs.
14	15									
13	16									
12	17									
11	18									
10	19									
9	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW9-MW35	1	1	0.00	1.00	SPS	M	10		45	30	5	10		NON	MOD	SFT	MST	
CW9-MW35	1	2	1.00	1.30	SPS		0	MFC	90	10	0	0		NA	MOD	LSE	WET	
CW9-MW35	1	3	1.30	2.00	SPS		0		0	0	0	0						
CW9-MW35	2	1	2.00	3.60	SPS		0	MCF	85	15	0	0		NA	MOD	LSE	WET	
CW9-MW35	2	2	3.60	4.00	SPS		0		0	0	0	0						
CW9-MW35	3	1	4.00	4.70	SPS	M	30	MCF	60	10	0	0		NA	MOD	LSE	SAT	
CW9-MW35	3	2	4.70	5.10	SPS		0	MCF	85	15	0	0		NA	MOD	LSE	SAT	
CW9-MW35	3	3	5.10	6.00	SPS		0		0	0	0	0						
CW9-MW35	4	1	6.00	7.60	SPS		0	MF	70	30	0	0		NA	MOD	SFT	SAT	
CW9-MW35	4	2	7.60	8.00	SPS		0		0	0	0	0						
CW9-MW35	5	1	8.00	9.00	SPS		0	FM	80	20	0	0		NON	MOD	SFT	SAT	
CW9-MW35	5	2	9.00	10.00	SPS		0		0	0	0	0						
CW9-MW35	6	1	10.00	10.60	SPS		0	FM	80	20	0	0		NA	MOD	SFT	SAT	
CW9-MW35	6	2	10.60	12.00	SPS		0		0	0	0	0						
CW9-MW35	7	1	12.00	13.00	SPS		0	MF	80	20	0	0		NA	MOD	SFT	SAT	
CW9-MW35	7	2	13.00	14.00	SPS		0		0	0	0	0						
CW9-MW35	8	1	14.00	14.50	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW9-MW36 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 01/04/94 END DATE : 01/04/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.00 ft. BGS
METHOD : FLUID :
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : ATV-SKID RIG

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	31.220
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Lat. N. 40 deg. 17'47"
Long. W. 74 deg. 4'28"

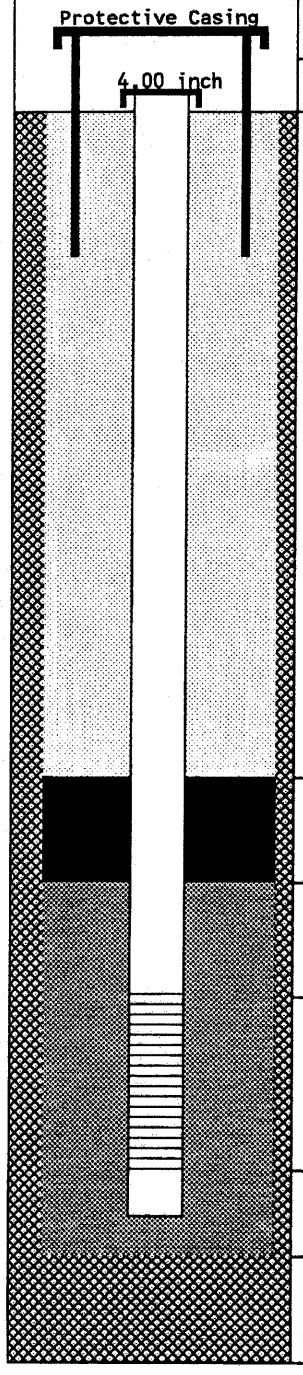
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME		***INSPECTOR***	P. THOMAS

WELL ID	CW9MW36
START DATE	01/03/95
COMPLETION DATE	01/04/95

WATER LEVELS



DEPTH		ELEV.
1.99	TC	33.21
0.00	GS	31.22
1.00	BN	30.22
3.00	SP	28.22
4.00	SC	27.22
13.54	BS	17.68
14.00	TD	17.22

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 14.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.99 ***ft.*** ***Protective Casing:*** 2.38 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 14.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.00 to 13.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 13.54 to 14.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/06/95
Method Bailed, surge blocking
Yield 4 gpm ***Purged Volume*** 175 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	CHARLES WOOD AREA 9	LOGGER :	P. THOMAS
BORING ID :	CW9-MW36	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV-SKID RIG
EASTING :	0.0000 estimated	DATE STARTED :	01/04/94
ELEVATION :	31.220 surveyed	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
31	0		100	Well graded sand with silt, SW-SM	BROWN TO BLACK	LSE	MST	4 3 3 4	HNU 0.0	Fill/topsoil.
30	1									
29	2		100	Well-graded sand, SW	LT BROWN	LSE	WET	5 6 3 6	HNU 0.0	Moderate lt. gray mottling. SPS wet @3' bgs
28	3									
27	4		100	Other	LT BROWN	LSE	SAT	5 8 8 7	HNU 0.0	Saturated at 5' bgs. Lt. iron (Fe) staining at bottom of SPS.
26	5									
25	6		50	Other	LT ORANGE-BROWN	LSE	SAT	7 10 11 12	HNU 4.0	
24	7			No Sample Recovered						
23	8		100	Poorly graded sand, SP	LT ORANGE-BROWN	LSE	SAT	3 2 3 4	HNU 5.0	Lt (orange/red) iron (Fe) staining in lower half of SPS.
22	9									
21	10		100	Poorly graded sand, SP	YELLOWISH BROWN	LSE	SAT	2 4 4 5	HNU 5.0	Some iron (Fe) staining.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	CHARLES WOOD AREA 9	LOGGER :	P. THOMAS
BORING ID :	CW9-MW36	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV-SKID RIG
EASTING :	0.0000 estimated	DATE STARTED :	01/04/94
ELEVATION :	31.220 surveyed	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
20	11			Poorly graded sand, SP	YELLOWISH BROWN	LSE	SAT		HNU 5.0	Some iron (Fe) staining.
19	12		100	Poorly graded sand, SP	LT BROWN	LSE	SAT	3 8 8	HNU 6.0	Fe staining throughout SPS. End SPS. To auger to 15. Set well TD 14.
18	13									
17	14									
16	15									
15	16									
14	17									
13	18									
12	19									
11	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW9-MW36	1	1	0.00	2.00	SPS	M	5	CM	55	10	0	0		NA	POR	LSE	MST	
CW9-MW36	2	1	2.00	4.00	SPS		0	CM	100	0	0	0		NA	POR	LSE	WET	
CW9-MW36	3	1	4.00	6.00	SPS		0	CM	100	0	0	0		NA	MOD	LSE	SAT	
CW9-MW36	4	1	6.00	7.00	SPS		0	CM	100	0	0	0		NA	POR	LSE	SAT	
CW9-MW36	4	2	7.00	8.00	SPS		0		0	0	0	0						
CW9-MW36	5	1	8.00	10.00	SPS		0	MF	100	0	0	0		NA	MOD	LSE	SAT	
CW9-MW36	6	1	10.00	12.00	SPS		0	MF	100	0	0	0		NA	MOD	LSE	SAT	
CW9-MW36	7	1	12.00	14.00	SPS		0	MF	100	0	0	0		NA	MOD	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B6-MW6B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/10/95 *END DATE :* 01/10/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	35.190
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32602

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 48.4"
Longitude-West: 74 deg 04' 43.8"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

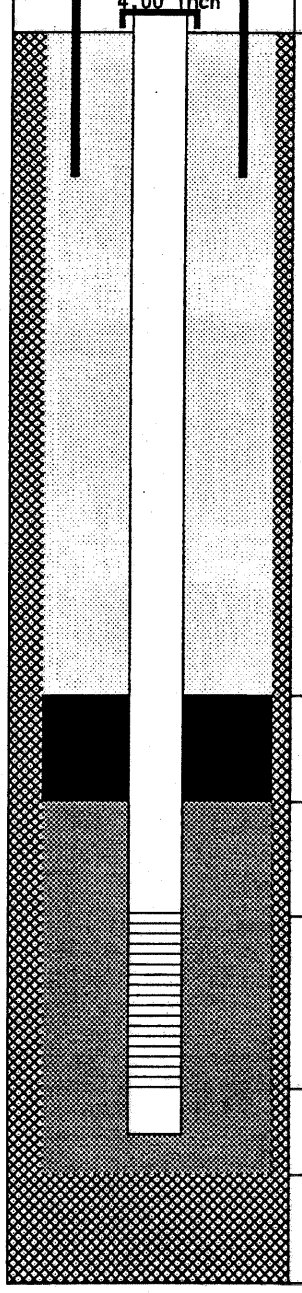
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	B6-MW6B
START DATE	01/10/95
COMPLETION DATE	01/10/95

WATER LEVELS



DEPTH		*ELEV.*
2.18	*TC*	37.37
0.00	*GS*	35.19
1.00	*BN*	34.19
3.00	*SP*	32.19
4.00	*SC*	31.19
13.54	*BS*	21.65
14.00	*TD*	21.19

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 14.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.18 ***ft.*** ***Protective Casing:*** 2.33 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 14.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.00 to 13.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 13.54 to 14.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/24/95
Method Surge Block/Overpumping
Yield ~.5 gpm ***Purged Volume*** 260 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : B6-MW6B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/10/95	
ELEVATION : 35.190 surveyed		DATE COMPLETED : 01/10/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
34	1			Poorly graded sand, SP	YELLOW LT BROWN	LSE	MST	14 11 9 11	HNU 2.0	Uncertain/fill? Used 3" spoon. Collected sample B6-SB01-A01. Top of spoon 3 inches was topsoil.
33	2		100	Poorly graded sand, SP	YELLOW LT BROWN	LSE	WET	6 7 7 10	HNU 2.5	Uncertain/fill? Drove 2" and 3" SPS. Some Fe (orange) staining. Sample B6-SB01-A02 collected.
32	3									
31	4		100	Poorly graded sand with silt, SP-SM	YLLWSH LT BROWN	LSE	SAT	3 3 4 5	HNU 0.0	Uncertain/fill? 2" sps here to TD. Sps wet. Mild orange staining. Soil brown towards bottom.
30	5									
29	6		100	Poorly graded sand with silt, SP-SM	BROWN	LSE	SAT	3 4 5 6	HNU 0.0	
28	7									
27	8		100	Elastic silt, MH	BLACK	FRM	DRY	3 4 4 9	HNU 0.0	Top 2" of SPS is same as above interval. Sharp interval change.
26	9									
25	10		100	Elastic silt, MH	BLACK	FRM	MST	4 4 5 6	HNU 0.0	Same as above. Top 4" of sps was wet.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	0.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	K. VALENTI
BORING ID :	B6-MW6B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/10/95
ELEVATION :	35.190 surveyed	DATE COMPLETED :	01/10/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Elastic silt, MH	BLACK	FRM	MST		HNU 0.0	Same as above. Top 4" of sps was wet.
24	11									
23	12		100	Elastic silt, MH	BLACK	FRM	WET		HNU 0.0	TD of borehole.
22	13									
21	14									
20	15									
19	16									
18	17									
17	18									
16	19									
15	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B6-MW6B	1	1	0.00	2.00	SPS		0	MF	100	0	0	0		NON	WEL	LSE	MST	
B6-MW6B	2	1	2.00	4.00	SPS		0		95	5	0	0		NON	WEL	LSE	WET	
B6-MW6B	3	1	4.00	6.00	SPS		0	MF	90	10	0	0		NON	WEL	LSE	SAT	
B6-MW6B	4	1	6.00	8.00	SPS		0	MF	90	10	0	0		NON	WEL	LSE	SAT	
B6-MW6B	5	1	8.00	10.00	SPS		0		5	65	30	0		MOD	MOD	FRM	DRY	
B6-MW6B	6	1	10.00	12.00	SPS		0		2	70	28	0		MOD	WEL	FRM	MST	
B6-MW6B	7	1	12.00	14.00	SPS		0		0	90	10	0		MOD	WEL	FRM	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : B7-MW7B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/10/95 *END DATE :* 01/10/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	64.270
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32604

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Sample B7-SB01-A01 collected at 1-2' bgs. Sample B7-SB01-A02 collected at 5-6' bgs. Top of water table ~6' bgs. Latitude-North: 40 deg 17' 32.5"/Longitude-West: 74 deg 05' 21.3"

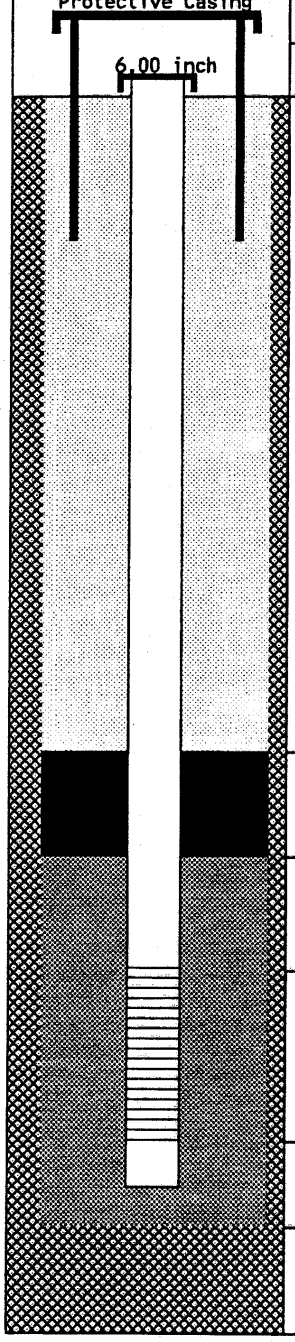
GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Well Completion Summary — *Roy F. WESTON, Inc.*

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	B7-MW7B
START DATE	01/10/95
COMPLETION DATE	01/10/95

WATER LEVELS



DEPTH		***ELEV.***
2.04	*TC*	66.31
0.00	*GS*	64.27
1.00	*BN*	63.27
3.00	*SP*	61.27
5.00	*SC*	59.27
14.54	*BS*	49.73
15.00	*TD*	49.27

DRILLING SUMMARY

Driller WELLS REEVE
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 6.00 ***inch*** ***Interval:*** 0.00 to 15.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.04 ***ft.*** ***Protective Casing:*** 2.47 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/24/95
Method Surge Block/Overpumping
Yield 2 gpm ***Purged Volume*** 122 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	15.00
SITE NAME :	CHARLES WOOD AREA	LOGGER :	K. VALENTI
BORING ID :	B7-MW7B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	01/10/95
ELEVATION :	64.270 surveyed	DATE COMPLETED :	01/10/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
63	1		100	Silt with sand, ML	BROWN	STF	DRY	3 3 4 6	HNU 2.0	Fill/uncertain, 3" SPS Sampled B7-SB01-A01 from tightly packed silt.
62	2		100	Silt with sand, ML	BROWN	STF	DRY	3 5 5 5	HNU 1.0	Fill/uncertain. 3" sps used.
				Poorly graded sand, SP	YELLOW BROWN	LSE	MST		HNU 1.0	Fill/uncertain. Brown sand 2.4-2.8' Grades into lt brown-yellowish sand w/few cobbles to 4' bgs.
61	3									
60	4		100	Poorly graded sand, SP	OLIVE	LSE	WET	5 5 6 7	HNU 5.0	Fill/uncertain, 3" SPS used. Sample B7-SB01-A02.
59	5									
58	6		100	Poorly graded sand, SP	OLIVE GRAY	LSE	SAT	2 2 4 5	HNU 0.0	SPS 2" used. Saturated at 6' bgs.
57	7									
56	8		50	Poorly graded sand, SP		LSE	SAT	5 5 8 9	HNU 0.0	SPS saturated.
55	9			No Sample Recovered						
54	10		100	Poorly graded sand, SP	LT BROWN	LSE	SAT	2 3 5 7	HNU 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : B7-MW7B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 01/10/95	
ELEVATION : 64.270 surveyed		DATE COMPLETED : 01/10/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
53	11			Poorly graded sand, SP	LT BROWN	LSE	SAT		HNU 0.0	
52	12		100	Poorly graded sand, SP	LT BROWN	LSE	SAT	6 5 6 9	HNU 0.0	Some lt orange banding. Auger to 15' bgs to set well.
51	13									
50	14			Interval Not Sampled						Augered interval TD at 15' bgs.
49	15									
48	16									
47	17									
46	18									
45	19									
44	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B7-MW7B	1	1	0.00	2.00	SPS		0		15	80	0	5		LOW	POR	STF	DRY	
B7-MW7B	2	1	2.00	2.40	SPS		0		15	85	0	0		LOW	NA	STF	DRY	
B7-MW7B	2	2	2.40	4.00	SPS		5	MF	95	0	0	0		NON	MOD	LSE	MST	
B7-MW7B	3	1	4.00	6.00	SPS		0	MF	100	0	0	0		NON	MOD	LSE	WET	
B7-MW7B	4	1	6.00	8.00	SPS		0	M	100	0	0	0		NON	MOD	LSE	SAT	
B7-MW7B	5	1	8.00	9.00	SPS		0		100	0	0	0		NA	MOD	LSE	SAT	
B7-MW7B	5	2	9.00	10.00	SPS		0		0	0	0	0						
B7-MW7B	6	1	10.00	12.00	SPS		0		100	0	0	0		NON	MOD	LSE	SAT	
B7-MW7B	7	1	12.00	14.00	SPS		0	MF	100	0	0	0		NA	WEL	LSE	SAT	
B7-MW7B	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B8-MW8B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/10/95 *END DATE :* 01/10/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 15.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	47.040
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32598

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 35.3"
Longitude-West: 74 deg 05' 01.4"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

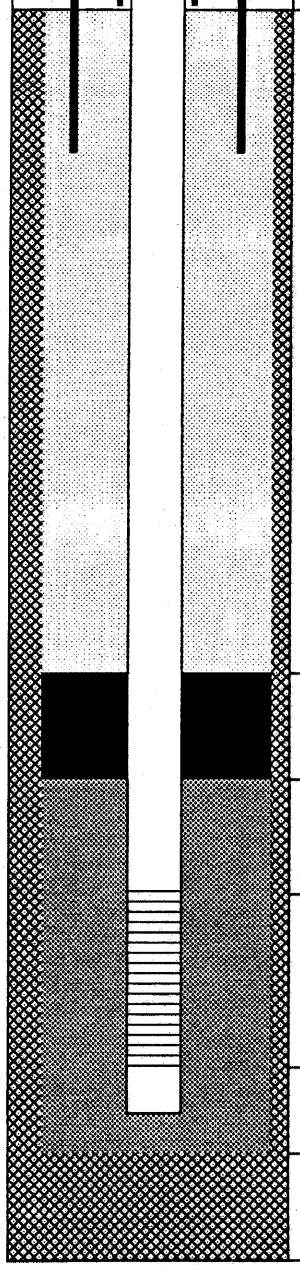
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	P. THOMAS

WELL ID	B8-MW8B
START DATE	01/10/95
COMPLETION DATE	01/10/95

WATER LEVELS



DEPTH		*ELEV.*
1.86	*TC*	48.90
0.00	*GS*	47.04
0.50	*BN*	46.54
3.00	*SP*	44.04
5.00	*SC*	42.04
14.54	*BS*	32.50
15.00	*TD*	47.04

DRILLING SUMMARY

Driller STEVE BURGER
Drilling Fluid WATER
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 5.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 1.86 ***ft.*** ***Protective Casing:*** 2.37 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 SAND MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date 01/24/95
Method Surge Blocking/Overpump
Yield 1-4 gpm ***Purged Volume*** 210 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/27/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 15.00
SITE NAME : CHARLES WOOD AREA		LOGGER	: P. THOMAS
BORING ID : B8-MW8B		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B-57
EASTING : 0.0000 estimated		DATE STARTED	: 01/10/95
ELEVATION : 47.040 surveyed		DATE COMPLETED	: 01/10/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Sandy silt, ML	BROWN	SFT	MST	14 15 12	OVM 0.0	Topsoil.
				Poorly graded sand, SP	YELLOW BROWN	LSE	MST	10	OVM 0.0	Sharp contact. Sampled 1-2' bgs B8-SB01-A01.
46	1									
				No Sample Recovered						
45	2		100	Poorly graded sand, SP	YELLOW BROWN	LSE	MST	15 10 15 10	OVM 0.0	Same unit as above.
44	3									
43	4		70	Poorly graded sand with silt, SP-SM	YELLOW BROWN	LSE	WET	11 16 17 14	OVM 0.0	Sat.~5' bgs; Iron (Fe) stained zones throughout. Sampled B8-SB01-A02
42	5									
				No Sample Recovered						
41	6		60	Silty sand, SM	YELLOW BROWN	LSE	SAT	16 10 15 14	OVM 0.0	
40	7									
				No Sample Recovered						
39	8		75	Silty sand, SM	YELLOW BROWN	LSE	SAT	15 10 15 16	OVM 0.0	
38	9									
				No Sample Recovered						
37	10			Interval Not Sampled					OVM 0.0	Augered interval to keep sands out of hole. Cutting same lithology as above.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 15.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : P. THOMAS	
BORING ID : B8-MW8B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 01/10/95	
ELEVATION : 47.040 surveyed		DATE COMPLETED : 01/10/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Interval Not Sampled					OVM 0.0	Augered interval to keep sands out of hole. Cutting same lithology as above.
36	11									
35	12		80	Silty sand, SM	YELLOW BROWN	LSE	SAT	6 4 5 9	OVM 0.0	Iron (Fe) stained zones throughout - dark heavy minerals throughout spoon
34	13									
				No Sample Recovered						
33	14			Interval Not Sampled					OVM 0.0	Augered interval. Set well at 15' bgs. TD=15' bgs.
32	15									
31	16									
30	17									
29	18									
28	19									
27	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B8-MW8B	1	1	0.00	0.40	SPS		0	MF	40	30	5	25		NON	POR	SFT	MST	
B8-MW8B	1	2	0.40	1.50	SPS		0	MF	95	5	0	0		NA	WEL	LSE	MST	
B8-MW8B	1	3	1.50	2.00	SPS		0		0	0	0	0						
B8-MW8B	2	1	2.00	4.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	MST	
B8-MW8B	3	1	4.00	5.40	SPS		0	MF	90	10	0	0		NA	MOD	LSE	WET	
B8-MW8B	3	2	5.40	6.00	SPS		0		0	0	0	0						
B8-MW8B	4	1	6.00	7.20	SPS		0	MF	85	15	0	0		NA	MOD	LSE	SAT	
B8-MW8B	4	2	7.20	8.00	SPS		0		0	0	0	0						
B8-MW8B	5	1	8.00	9.50	SPS		0	MF	85	15	0	0		NA	MOD	LSE	SAT	
B8-MW8B	5	2	9.50	10.00	SPS		0		0	0	0	0						
B8-MW8B	6	1	10.00	12.00	NS		0		0	0	0	0						
B8-MW8B	7	1	12.00	13.60	SPS		0	MF	85	15	0	0		NA	MOD	LSE	SAT	
B8-MW8B	7	2	13.60	14.00	SPS		0		0	0	0	0						
B8-MW8B	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B9-MW9B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/23/95 *END DATE :* 01/23/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 0.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 15.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : ATV

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	43.130
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32603

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Water @5'-4" Sampled at 6"-12" B9-SB01/B9-SB01-A01 MS/MSD and 4' to 5'4" B9-SB01-A02/B9-SB01-002 Dup. Latitude-North: 40 deg 17' 55.3"/Longitude-West: 74 deg 04' 54.5".

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

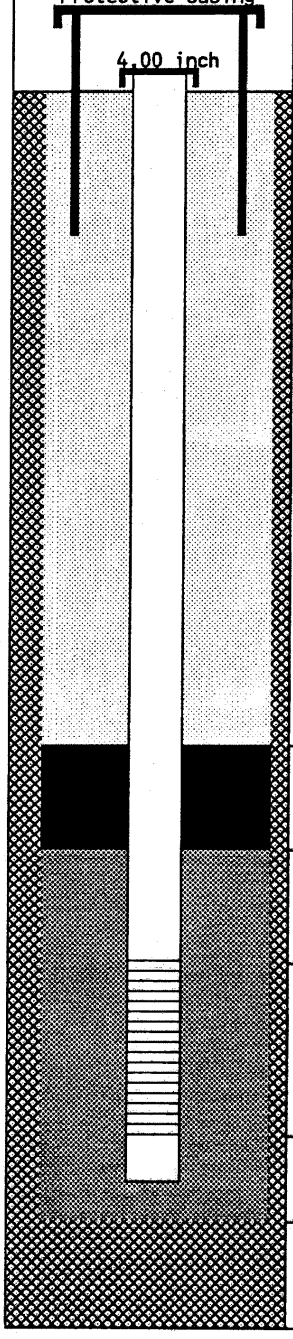
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	K. VALENTI

WELL ID	B9-MW9B
START DATE	01/23/95
COMPLETION DATE	01/23/95

WATER LEVELS



DEPTH		***ELEV.***
2.18	*TC*	45.31
0.00	*GS*	43.13
1.00	*BN*	42.13
3.00	*SP*	40.13
5.00	*SC*	38.13
14.54	*BS*	28.59
15.00	*TD*	28.13

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 15.00 ***ft.***
Type : PVC SCH 40

Stick Up Inner Casing: 2.18 ***ft.*** ***Protective Casing:*** 2.52 ***ft.***

Casing Grout: PORTLAND CEMENT ***Interval:*** 0.00 to 1.00 ***ft.***

Seal Type: BENTONITE ***Interval:*** 1.00 to 3.00 ***ft.***

Sand Pack Type : #1 MORIE ***Interval:*** 3.00 to 15.00 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 5.00 to 14.54 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.54 to 15.00 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/25/95		
Method	Surge Blocking/Bailing		
Yield	<1 gpm	***Purged Volume***	290 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : B9-MW9B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : ATV	
EASTING : 0.0000 estimated		DATE STARTED : 01/23/95	
ELEVATION : 43.130 surveyed		DATE COMPLETED : 01/23/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
42	1		100	Silty sand with gravel, SM	BROWN	SFT	MST	11 12 12 14	OVM 0.0	Fill 3" SPS used. Top 3"= topsoil. Sampled B-9SB01-A01/B-9SB01-E02.
41	2		100	Poorly graded sand with silt, SP-SM	OLIVE BROWN	SFT	WET	7 9 11 12	OVM 0.0	Fill. 3" sps used. Heavy iron staining throughout SPS.
40	3									
39	4		100	Poorly graded sand, SP	FOREST GRN-BRN	SFT	WET	5 9 11 14	OVM 0.0	Fill. Heavy iron staining throughout SPS (3" sps). Sampled B9-SB01-A02/ B9-SB01-C02 Dup.
38	5									
37	6		100	Silty sand, SM	GREENISH BROWN	SFT	WET	4 3 4 5	OVM 0.0	Fill. 2" SPS to TD of well. SPS saturated. Less sand w/depth, org iron (Fe) banding throughout.
36	7									
35	8		100	Silty sand, SM	GREEN BROWN	SFT	SAT	5 6 5 8	OVM 0.0	Fill w/heavy iron (Fe) staining bottom 6" of SPS. Sand size black minerals with silt.
34	9									
				Elastic silt, MH	DK BROWN-BLACK	FRM	WET		OVM 0.0	6" of sand size dk to black minerals w/silt moist to wet throughout spoon.
33	10		100	Elastic silt, MH	DK GRAY-BLACK	SFT	WET	1 2 1 1	OVM 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 0.00	
SITE NAME : CHARLES WOOD AREA		LOGGER : K. VALENTI	
BORING ID : B9-MW9B		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : ATV	
EASTING : 0.0000 estimated		DATE STARTED : 01/23/95	
ELEVATION : 43.130 surveyed		DATE COMPLETED : 01/23/95	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Elastic silt, MH	DK GRAY-BLACK	SFT	WET		OVM 0.0	
32	11									
31	12		100	Elastic silt, MH	DK GRAY TO BLK	FRM	WET	3 5 7 7	OVM 0.0	End B.H. Auger to 15. Wet well at 15'.
30	13									
29	14			Interval Not Sampled						Augered interval. Set well at 15', TD of borehole 15' bgs.
28	15									
27	16									
26	17									
25	18									
24	19									
23	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B9-MW9B	1	1	0.00	2.00	SPS		15		60	25	0	0		NON	POR	SFT	MST	
B9-MW9B	2	1	2.00	4.00	SPS		0	MF	90	10	0	0		NON	MOD	SFT	WET	
B9-MW9B	3	1	4.00	6.00	SPS		0	F	95	5	0	0		NON	WEL	SFT	WET	
B9-MW9B	4	1	6.00	8.00	SPS		0		65	30	5	0		LOW	MOD	SFT	WET	
B9-MW9B	5	1	8.00	9.50	SPS		0	F	75	25	0	0		LOW	MOD	SFT	SAT	
B9-MW9B	5	2	9.50	10.00	SPS		0		5	90	5	0		MOD	WEL	FRM	WET	
B9-MW9B	6	1	10.00	12.00	SPS		0		10	80	10	0		MOD	WEL	SFT	WET	
B9-MW9B	7	1	12.00	14.00	SPS		0		10	80	10	0		MOD	WEL	FRM	WET	
B9-MW9B	8	1	14.00	15.00	NS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : B10MW10B *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/10/95 *END DATE :* 01/10/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.50 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.25
INTERVAL: 0.00 ft. to 14.50 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	51.360
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32605

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Latitude-North: 40 deg 17' 52.0"
Longitude-West: 74 deg 05' 16.0"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

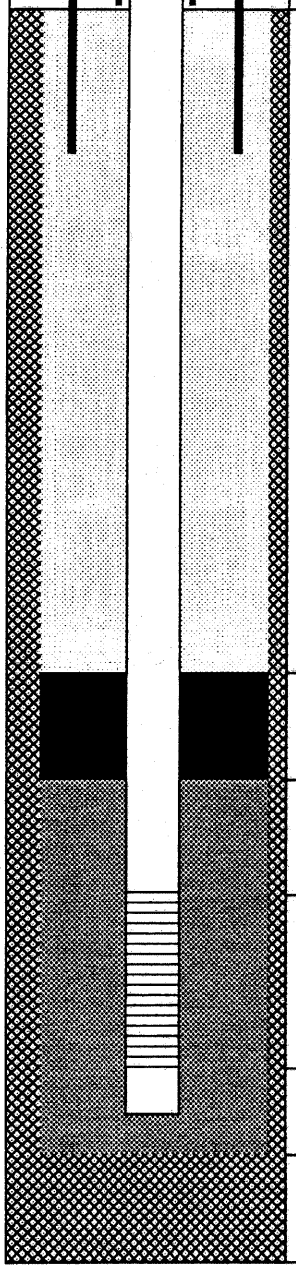
Well Completion Summary

Roy F. WESTON, Inc.

CLIENT	FT. MONMOUTH	***DRILLING FIRM***	J.C. ANDERSON
SITE NAME	CHARLES WOOD AREA	***INSPECTOR***	P. THOMAS

WELL ID	B10MW10B
START DATE	01/10/95
COMPLETION DATE	01/10/95

WATER LEVELS
4.36 FT (TOC) ON 01/24/95



DEPTH		*ELEV.*
1.78	*TC*	53.14
0.00	*GS*	51.36
0.50	*BN*	50.86
3.00	*SP*	48.36
4.50	*SC*	46.86
14.04	*BS*	37.32
14.50	*TD*	36.86

DRILLING SUMMARY

Driller	STEVE BURGER
Drilling Fluid	WATER
Well Type	SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 ***inch*** ***Interval:*** 0.00 to 4.50 ***ft.***
Type :

Stick Up Inner Casing: 1.78 ***ft.*** ***Protective Casing:*** 2.07 ***ft.***

Casing Grout: CEMT/BENT ***Interval:*** 0.00 to 0.50 ***ft.***

Seal Type: BENTONITE SLURRY ***Interval:*** 0.50 to 3.00 ***ft.***

Sand Pack Type : NO. 1 MORIE ***Interval:*** 3.00 to 14.50 ***ft.***
Grain Size : UNIFORM ***Median Diameter:***
Screen Diameter: 4.00 ***Interval:*** 4.50 to 14.04 ***ft.***
Type : PVC ***Slots:*** 0.010 ***inches***

Silt Trap Interval: 14.04 to 14.50 ***ft.***
Backfill Type : ***Interval:*** 0.00 to 0.00 ***ft.***

WELL DEVELOPMENT

Date	01/24/95		
Method	Surge/Overpumping		
Yield	0.5 gpm	***Purged Volume***	469 gal

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
Depths are measured below ground surface. Well developed for approximately 2 hours.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

06/20/95

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 14.50
SITE NAME : CHARLES WOOD AREA		LOGGER	: P. THOMAS
BORING ID : B10MW10B		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B-57
EASTING : 0.0000 estimated		DATE STARTED	: 01/10/95
ELEVATION : 51.360 surveyed		DATE COMPLETED	: 01/10/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Sandy silt, ML	BROWN	SFT	MST	3 10 14	OVM 0.0	Topsoil; collected sample
				Silty sand, SM	OLIVE BROWN	SFT	MST	15	OVM 0.0	Collected sample 1-2' bgs TCL+3/TAL/CN B10-SB01-A01
50	1									
				No Sample Recovered						
49	2		100	Silty sand, SM	FE BRN/OLV BRN	LSE	WET	14 19 22 14	OVM 0.0	Fill? Collected TCL+30/TAL/CN
48	3									
47	4		100	Silty sand, SM	FE BRN/YLW BRN	SFT	SAT	10 6 6 6	OVM 0.0	Fill? Sat ~4.5' bgs.
46	5			Silty sand, SM	FE BRN/YLW BRN	SFT	SAT		OVM 0.0	Fill? Fines downward. Sharp contact due to sand texture, m-f.
45	6		50	Silty sand, SM	GRAY	SFT	SAT	2 3 3 5	OVM 0.0	V. micaeous
44	7			No Sample Recovered						
43	8		75	Silty sand, SM	GRAY	SFT	SAT	5 6 5 5	OVM 0.0	V. micaceous.
42	9									
				No Sample Recovered						
41	10		70	Silty sand, SM	GRAY	SFT	SAT	5 4 5 5	OVM 0.0	Slightly coarser than previous interval.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.50
SITE NAME :	CHARLES WOOD AREA	LOGGER :	P. THOMAS
BORING ID :	B10MW10B	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	01/10/95
ELEVATION :	51.360 surveyed	DATE COMPLETED :	01/10/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	GRAY	SFT	SAT		OVM 0.0	Slightly coarser than previous interval.
40	11									
				No Sample Recovered						
39	12		45	Silty sand, SM	GRAY	SFT	SAT	5 9 8 6	OVM 0.0	
38	13			No Sample Recovered						
37	14			No Sample Recovered					OVM 0.0	Augered interval. Set well at 14.5' bgs.
36	15									
35	16									
34	17									
33	18									
32	19									
31	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
B10MW10B	1	1	0.00	0.40	SPS		5	MF	40	30	5	20		NON	MOD	SFT	MST	
B10MW10B	1	2	0.40	1.50	SPS		0	MF	60	30	5	5		NON	MOD	SFT	MST	
B10MW10B	1	3	1.50	2.00	SPS		0		0	0	0	0						
B10MW10B	2	1	2.00	4.00	SPS		0	MF	65	30	5	0		NON	MOD	LSE	WET	
B10MW10B	3	1	4.00	5.00	SPS		0	MF	65	30	5	0		NON	MOD	SFT	SAT	
B10MW10B	3	2	5.00	6.00	SPS		0	F	60	35	5	0		NON	MOD	SFT	SAT	
B10MW10B	4	1	6.00	7.00	SPS		0	FM	55	35	10	0		NON	MOD	SFT	SAT	
B10MW10B	4	2	7.00	8.00	SPS		0		0	0	0	0						
B10MW10B	5	1	8.00	9.50	SPS		0	FM	55	35	10	0		NON	MOD	SFT	SAT	
B10MW10B	5	2	9.50	10.00	SPS		0		0	0	0	0						
B10MW10B	6	1	10.00	11.40	SPS		0	F	60	35	5	0		NON	MOD	SFT	SAT	
B10MW10B	6	2	11.40	12.00	SPS		0		0	0	0	0						
B10MW10B	7	1	12.00	12.90	SPS		0	F	55	35	10	0		NON	MOD	SFT	SAT	
B10MW10B	7	2	12.90	14.00	SPS		0		0	0	0	0						
B10MW10B	8	1	14.00	14.50	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

CHARLES WOOD
SOIL BORING LOGS

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : CW4-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 8.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 8.00 ft. BGS
METHOD : HSA *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion borehole was abandoned by grouting from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 8.00	
SITE NAME : CHARLES WOOD AREA 4		LOGGER : K. VALENTI	
BORING ID : CW4-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	Silty sand, SM	BROWN	SFT	MST	8 13 15 11	HNU 3.0	Fill(?)
-1	1			Poorly graded sand, SP	LT BROWN	LSE	MST		HNU 0.0	Fill(?) Mild iron (Fe) staining in lower portion of SPS.
				No Sample Recovered						
-2	2		50	Poorly graded sand, SP	FOREST GREEN	LSE	MST	9 7 7 5	HNU 1.0	Fill(?).
				Silty sand, SM	DK BRN - BLACK	SFT	MST		HNU 1.0	Fill(?) Bottom 2" of SPS Soils in spoon are wet.
-3	3			No Sample Recovered						
-4	4		50	Poorly graded sand, SP	GREEN	SFT	MST	8 9 16 13	HNU 1.0	
-5	5			No Sample Recovered						
-6	6		50	Poorly graded sand, SP	GREEN	LSE	WET	9 11 8 5	HNU 0.0	Water occurred at 6.1'bgs Collected soil sample CW04-SB01-A02.
-7	7			No Sample Recovered						
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW4-SB1	1	1	0.00	1.00	SPS		10		40	50	0	0		NON	POR	SFT	MST	
CW4-SB1	1	2	1.00	1.50	SPS		0		95	5	0	0		NON	MOD	LSE	MST	
CW4-SB1	1	3	1.50	2.00	SPS		0		0	0	0	0						
CW4-SB1	2	1	2.00	2.60	SPS		0		95	5	0	0		NON	WEL	LSE	MST	
CW4-SB1	2	2	2.60	3.00	SPS		0		60	40	0	0		LOW	WEL	SFT	MST	
CW4-SB1	2	3	3.00	4.00	SPS		0		0	0	0	0						
CW4-SB1	3	1	4.00	5.00	SPS		0		95	5	0	0		LOW	MOD	SFT	MST	
CW4-SB1	3	2	5.00	6.00	SPS		0		0	0	0	0						
CW4-SB1	4	1	6.00	7.00	SPS		0		95	5	0	0		LOW	MOD	LSE	WET	
CW4-SB1	4	2	7.00	8.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW5-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/20/94 *END DATE :* 12/20/94

LOGGER/COMPANY : K. VALENTE

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 8.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 8.00 ft. BGS
METHOD : HSA *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion borehole was abandoned by grouting from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 8.00	
SITE NAME : CHARLES WOOD AREA 5		LOGGER : K. VALENTE	
BORING ID : CW5-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/20/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/20/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silty sand, SM	BROWN	LSE	MST	12 10 8 8	HNU 0.0	Fill. Top 3" is topsoil. Some gravels(med.-coarse) Color changing at bottom of SPS to grey-brown.
-1	1			No Sample Recovered						
-2	2		75	Silty sand with gravel, SM	GRAY BROWN	LSE	MST	12 11 10 11	HNU 0.0	Fill. Gray brown silty sand, some medium gravels
-3	3			Well-graded sand with gravel, SW	YELLOW-BROWN	LSE	MST		HNU 0.0	Fill. Sand, medium to coarse gravels. Some fragments of quartzite.
				No Sample Recovered						
-4	4		100	Well-graded sand with gravel, SW	YELLOWISH BROWN	LSE	MST	12 7 6 7	HNU 0.0	Same lithology as previous interval.
-5	5									
-6	6		100	Silty sand with gravel, SM	DK BROWN	FRM	MST	9 12 6 8	HNU 0.0	3" SPS used. Mottles noted. 1" of silty sand with organics at 6.6-6.7' bgs. Collected soil samp
-7	7			Poorly graded sand, SP	GREENISH GRAY	LSE	SAT		HNU 0.0	3" SPS used. Collected soil sample CW05-SB01-A02
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW5-SB1	1	1	0.00	1.00	SPS		10		50	40	0	0		NON	POR	LSE	MST	
CW5-SB1	1	2	1.00	2.00	SPS		0		0	0	0	0						
CW5-SB1	2	1	2.00	3.00	SPS		15		60	25	0	0		NON	MOD	LSE	MST	
CW5-SB1	2	2	3.00	3.50	SPS		30		65	5	0	0		NON	POR	LSE	MST	
CW5-SB1	2	3	3.50	4.00	SPS		0		0	0	0	0						
CW5-SB1	3	1	4.00	6.00	SPS		25		70	5	0	0		NON	POR	LSE	MST	
CW5-SB1	4	1	6.00	6.80	SPS		20		40	35	5	0		LOW	POR	FRM	MST	
CW5-SB1	4	2	6.80	8.00	SPS		5		95	0	0	0		NON	MOD	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW5-SB2 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 12/20/94 END DATE : 12/20/94

LOGGER/COMPANY : K. VALENTE

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 6.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA FLUID : AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion the borehole was abandoned by grouting from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log — *Roy F. WESTON, Inc.*

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	6.00
SITE NAME :	CHARLES WOOD AREA 5	LOGGER :	K. VALENTE
BORING ID :	CW5-SB2	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/20/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/20/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Sandy silt, ML	ORANGE-DK BROWN	FRM	MST	7 5 6 6	HNU 0.0	Fill. Top 4" consists of topsoil. Minor clay content.
-1	1			Silty sand, SM No Sample Recovered	GRAY BROWN	SFT	MST		HNU 0.0	Fill(?)
-2	2		75	Silty sand, SM	DK GRAY - BROWN	SFT	MST	10 9 7 8	HNU 0.0	Some sub-rounded to fragmented quartz sands.
-3	3									
				No Sample Recovered						
-4	4		100	Silty sand, SM	DK BROWN	SFT	MST	4 5 11 12	HNU 0.0	Fill. Sandy silt. 3 or 4 pieces of broken bricks (red-orange in color).
-5	5			Elastic silt, MH	DK BROWN BLACK	SFT	MST		HNU 0.0	Fill. Silt w/some clay.
				Silty sand, SM	GREENISH GRAY	LSE	SAT		HNU 0.0	Collected sample CW05-SB02-A02. Water at 5.2' bgs. TD of borehole 6'bgs
-6	6									
-7	7									
-8	8									
-9	9									
-10	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW5-SB2	1	1	0.00	0.90	SPS		5		25	60	10	0		LOW	POR	FRM	MST	
CW5-SB2	1	2	0.90	1.00	SPS		0		85	15	0	0		NON	MOD	SFT	MST	
CW5-SB2	1	3	1.00	2.00	SPS		0		0	0	0	0						
CW5-SB2	2	1	2.00	3.50	SPS		5		75	20	0	0		LOW	MOD	SFT	MST	
CW5-SB2	2	2	3.50	4.00	SPS		0		0	0	0	0						
CW5-SB2	3	1	4.00	5.00	SPS		5		45	50	0	0		NON	MOD	SFT	MST	
CW5-SB2	3	2	5.00	5.20	SPS		0		0	65	35	0		MOD	WEL	SFT	MST	
CW5-SB2	3	3	5.20	6.00	SPS		0		85	15	0	0		NON	WEL	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.25
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2: 3.00
INTERVAL: 12.00 ft. to 14.00 ft. BGS
METHOD : SPLIT SPOON SAMPLER *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B-57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion borehole was grouted with portland cement and bentonite from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.00	
SITE NAME : CHARLES WOOD AREA 7		LOGGER : P. THOMAS	
BORING ID : CW7-SB1		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : MOBILE B-57	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			90	Sandy silt, ML	BROWN	SFT	MST	4 5 6	HNU 25.9	Topsoil; HNU/OVM readings may be from decon solut. no cutting readings for entire boring.
				Silty sand, SM	BROWN ORANGE	SFT	MST	5	HNU 29.0	
-1	1									
				No Sample Recovered						
-2	2		75	Silty sand, SM	BROWN	SFT	MST	10 10 12 10	HNU 25.2	
-3	3									
				No Sample Recovered						
-4	4		75	Silty sand, SM	BROWN	SFT	WET	18 22 28 30	HNU 5.2	
-5	5									
				No Sample Recovered				18 22 25 30		
-6	6		100	Poorly graded sand, SP	OLIVE BROWN	LSE	MST	6 7 10 10	HNU 0.8	
-7	7									
-8	8		100	Poorly graded sand, SP	OLIVE BROWN	LSE	MST	10 15 10 10	HNU 0.0	Fe stained laminae.
-9	9									
-10	10		100	Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	MST	12 12 10 5	HNU 0.1	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	CHARLES WOOD AREA 7	LOGGER :	P. THOMAS
BORING ID :	CW7-SB1	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B-57
EASTING :	0.0000 estimated	DATE STARTED :	12/21/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	MST		HNU 0.1	
-11	11									
-12	12		100	Poorly graded sand, SP	OLIVE	LSE	WET	10 12 14 10	HNU 0.0	Fe stained laminae, sat from ~12.5-13' bgs.
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB1	1	1	0.00	0.40	SPS		0	MF	40	30	0	30		NON	POR	SFT	MST	
CW7-SB1	1	2	0.40	1.80	SPS	F	5	MF	60	35	0	0		NA	MOD	SFT	MST	
CW7-SB1	1	3	1.80	2.00	SPS		0		0	0	0	0						
CW7-SB1	2	1	2.00	3.50	SPS		0	MF	50	35	15	0		LOW	WEL	SFT	MST	
CW7-SB1	2	2	3.50	4.00	SPS		0		0	0	0	0						
CW7-SB1	3	1	4.00	5.50	SPS		0	MF	75	20	5	0		NON	WEL	SFT	WET	
CW7-SB1	3	2	5.50	6.00	SPS		0		0	0	0	0						
CW7-SB1	4	1	6.00	8.00	SPS		0	MFC	95	5	0	0		NA	MOD	LSE	MST	
CW7-SB1	5	1	8.00	10.00	SPS		0	MF	95	5	0	0		NA	MOD	LSE	MST	
CW7-SB1	6	1	10.00	12.00	SPS		0	MF	90	10	0	0		NA	MOD	LSE	MST	
CW7-SB1	7	1	12.00	14.00	SPS		0	MF	95	5	0	0		NA	MOD	LSE	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB2 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.25
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2: 3.00
INTERVAL: 12.00 ft. to 14.00 ft. BGS
METHOD : SPLIT SPOON *FLUID :* NONE
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : MOBILE B57

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion borehole was abandoned by grouting from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 14.00
SITE NAME : CHARLES WOOD AREA 7		LOGGER	: P. THOMAS
BORING ID : CW7-SB2		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: MOBILE B57
EASTING : 0.0000 estimated		DATE STARTED	: 12/21/94
ELEVATION : 0.000 estimated		DATE COMPLETED	: 12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			60	Silty sand, SM	BROWN	SFT	WET	2 10 5	OVM 0.5	Topsoil
				Silty sand, SM	RED YELLOW BRN	LSE	WET	7	OVM 0.5	
-1	1			No Sample Recovered						
-2	2		85	Silty sand, SM	BROWN	SFT	WET	6 10	OVM 0.5	
				Silty sand, SM	BROWN	SFT	MST	15 21	OVM 0.0	
-3	3			Silty sand, SM	BROWN	LSE	WET		OVM 0.0	
				No Sample Recovered						
-4	4		90	Silty sand, SM	BROWN	LSE	MST	14 15 15 18	OVM 0.0	
-5	5									
				No Sample Recovered						
-6	6		80	Poorly graded sand, SP	OLIVE/FE BROWN	LSE	MST	9 9 8 9	OVM 0.0	Iron (Fe) colored with olive to brown sand laminae.
-7	7									
				No Sample Recovered						
-8	8		100	Poorly graded sand, SP	OLIVE BROWN	LSE	MST	7 7 10 12	OVM 0.0	
-9	9									
-10	10		100	Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	MST	11 17 13 15	OVM 0.0	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	14.00
SITE NAME :	CHARLES WOOD AREA 7	LOGGER :	P. THOMAS
BORING ID :	CW7-SB2	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	MOBILE B57
EASTING :	0.0000 estimated	DATE STARTED :	12/21/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	MST		OVM 0.0	
-11	11									
-12	12		100	Poorly graded sand, SP	OLIVE BROWN	LSE	SAT	6 10 10 6	OVM 0.0	Collected soil sample. TD of borehole 14' bgs.
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB2	1	1	0.00	0.40	SPS		10	MF	40	20	0	30		NA	POR	SFT	WET	
CW7-SB2	1	2	0.40	1.20	SPS		0	MF	80	18	2	0		NON	MOD	LSE	WET	
CW7-SB2	1	3	1.20	2.00	SPS		0		0	0	0	0						
CW7-SB2	2	1	2.00	2.30	SPS		0	MF	80	18	2	0		NON	MOD	SFT	WET	
CW7-SB2	2	2	2.30	2.95	SPS		0	MF	55	30	15	0		LOW	MOD	SFT	MST	
CW7-SB2	2	3	2.95	3.70	SPS		10		60	28	2	0		NON	MOD	LSE	WET	
CW7-SB2	2	4	3.70	4.00	SPS		0		0	0	0	0						
CW7-SB2	3	1	4.00	5.80	SPS		0	MF	75	25	0	0		NA	MOD	LSE	MST	
CW7-SB2	3	2	5.80	6.00	SPS		0		0	0	0	0						
CW7-SB2	4	1	6.00	7.60	SPS		0	MFC	95	5	0	0		NA	MOD	LSE	MST	
CW7-SB2	4	2	7.60	8.00	SPS		0		0	0	0	0						
CW7-SB2	5	1	8.00	10.00	SPS		0	MF	95	5	0	0		NA	WEL	LSE	MST	
CW7-SB2	6	1	10.00	12.00	SPS		0	MF	90	10	0	0		NON	MOD	LSE	MST	
CW7-SB2	7	1	12.00	14.00	SPS		0	MF	95	5	0	0		NA	MOD	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB3 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : K. VALENTZ

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 12.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA *FLUID :* NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Borehole location grouted to surface level.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 12.00	
SITE NAME : CHARLES WOOD AREA 7		LOGGER : K. VALENTZ	
BORING ID : CW7-SB3		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silty sand, SM	ORANGE BROWN	LSE	DRY	6 5 8 9	OVM 116.0	Fill. Some semi-rounded stones, little gravel silty sands.
-1	1			No Sample Recovered						
-2	2		100	Silty sand, SM	ORANGE-BROWN	LSE	MST	4 5 4 5	OVM 98.4	Same lithology as noted above with less gravel.
-3	3									
-4	4		50	Silty sand, SM	OLIVE BROWN	SFT	MST	6 7 4 4	OVM 84.3	
-5	5			No Sample Recovered						
-6	6		100	Poorly graded sand, SP	OLIVE	LSE	MST	8 11 13 9	OVM 12.3	Top of spoon (4") silt with sand, all sand in rest of spoon. 3" sps used.
-7	7									
-8	8		100	Poorly graded sand, SP		LSE	MST	6 7 9 7	OVM 2.4	3" sps used. Light orange mottles. Sample CWA7-SB03 A02 collected.
-9	9									
-10	10		100	Not Classified - Incomplete Data				5 6 6 7	HNU 0.0	Water noted at 10'-6" bgs Wet sands. Heavier mottling at 11'-2" to 12'

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH	: 12.00
SITE NAME : CHARLES WOOD AREA 7		LOGGER	: K. VALENTZ
BORING ID : CW7-SB3		DRILLING COMPANY	: J.C. ANDERSON
NORTHING : 0.0000 estimated		DRILLING RIG	: CME-55
EASTING : 0.0000 estimated		DATE STARTED	: 12/21/94
ELEVATION : 0.000 estimated		DATE COMPLETED	: 12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Not Classified - Incomplete Data					HNU 0.0	Water noted at 10'-6" bgs Wet sands. Heavier mottling at 11'-2" to 12'
-11	11									
-12	12									
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

 GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB3	1	1	0.00	1.00	SPS		10		50	40	0	0		NON	POR	LSE	DRY	
CW7-SB3	1	2	1.00	2.00	SPS		0		0	0	0	0						
CW7-SB3	2	1	2.00	4.00	SPS		0		70	30	0	0		NON	MOD	LSE	MST	
CW7-SB3	3	1	4.00	5.00	SPS		0	F	85	15	0	0		NON	WEL	SFT	MST	
CW7-SB3	3	2	5.00	6.00	SPS		0		0	0	0	0						
CW7-SB3	4	1	6.00	8.00	SPS		0		100	0	0	0		NON	MOD	LSE	MST	
CW7-SB3	5	1	8.00	10.00	SPS		0		100	0	0	0		NON	MOD	LSE	MST	
CW7-SB3	6	1	10.00	12.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB4 PROJECT NAME: FT. MONMOUTH
BEGIN DATE : 12/21/94 END DATE : 12/21/94

LOGGER/COMPANY : K. VALELNTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 12.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA FLUID : AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion borehole was abandoned by grouting from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	12.00
SITE NAME :	CHARLES WOOD AREA 7	LOGGER :	K. VALELNTI
BORING ID :	CW7-SB4	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/21/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Well-graded sand with gravel, SW	YELLOW BROWN	LSE	DRY	6 4 5 5	HNU 0.0	Fill(?). Top 2" consist of topsoil.
				Silty sand, SM	BROWN	LSE	MST		HNU 0.0	
-1	1			No Sample Recovered						
-2	2		100	Silty sand, SM	OLIVE BROWN	SFT	MST	6 6 7 5	HNU 0.0	Fill(?) Sandier with depth.
-3	3									
-4	4		100	Silty sand, SM	OLIVE BROWN	SFT	MST	4 5 7 7	HNU 0.0	
-5	5									
-6	6		100	Poorly graded sand, SP	OLIVE	LSE	MST		HNU 0.5	
-7	7									
-8	8		100	Poorly graded sand, SP	OLIVE LT BROWN	LSE	MST	7 8 10 11	HNU 0.0	3" sps used. Color becomes olive sand color towards bottom of SPS. Iron (Fe) staining.
-9	9									
-10	10		100	Poorly graded sand, SP	OLIVE - LT BRN	LSE	WET	6 7 5 5	HNU 0.0	3" sps used. 1st Water wet sands at 10.2' bgs. TD of borehole

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	12.00
SITE NAME :	CHARLES WOOD AREA 7	LOGGER :	K. VALELNTI
BORING ID :	CW7-SB4	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/21/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	OLIVE - LT BRN	LSE	WET		HNU 0.0	3" sps used. 1st Water wet sands at 10.2' bgs. TD of borehole
-11	11									
-12	12									
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB4	1	1	0.00	0.40	SPS		30		70	0	0	0		NON	POR	LSE	DRY	
CW7-SB4	1	2	0.40	1.00	SPS		0		80	20	0	0		NON	MOD	LSE	MST	
CW7-SB4	1	3	1.00	2.00	SPS		0		0	0	0	0						
CW7-SB4	2	1	2.00	4.00	SPS		0	F	85	15	0	0		NON	WEL	SFT	MST	
CW7-SB4	3	1	4.00	6.00	SPS		0		85	15	0	0		NON	WEL	SFT	MST	
CW7-SB4	4	1	6.00	8.00	SPS		0		100	0	0	0		NON	WEL	LSE	MST	
CW7-SB4	5	1	8.00	10.00	SPS		0		100	0	0	0		NON	WEL	LSE	MST	
CW7-SB4	6	1	10.00	12.00	SPS		0		100	0	0	0		NON	WEL	LSE	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB5 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 12.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 12.00 ft. BGS
METHOD : HSA *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion the borehole was grouted to surface level.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 12.00	
SITE NAME : CHARLES WOOD AREA 7		LOGGER : K. VALENTI	
BORING ID : CW7-SB5		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Silty sand, SM	LT ORANGE BROWN	LSE	DRY	4 7 9 9	OVM 18.1	Top 2" sps was topsoil/ organics. Some small cobbles noted throughout interval.
-1	1									
-2	2		100	Sandy silt, ML	BROWN	FRM	MST	5 7 9 4	OVM 12.9	Some sand with little clay texture.
-3	3									
-4	4		100	Silty sand, SM	OLIVE BROWN	FRM	MST	8 7 9 13	OVM 2.5	Mottling noted in bottom 4" of SPS. Increase in sand % towards bottom of SPS.
-5	5									
-6	6		100	Poorly graded sand with silt, SP-SM	OLIVE	LSE	MST	5 7 7 9	OVM 3.7	Top of sps olive brown color, bottom sps olive color.
-7	7									
-8	8		100	Poorly graded sand, SP	LT BROWN	LSE	MST	15 19 16 14	OVM 1.9	3" SPS used. Heavy mottling towards bottom of SPS. Collected sample CWA7-SB05-A02.
-9	9									
-10	10		100	Poorly graded sand, SP	LT BROWN OLIVE	LSE	WET	7 6 4 4	OVM 0.0	3" SPS used. Water at 11'-7" bgs. Fe lamina staining. Collected sample CWA7-SB05-A02.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log *Roy F. WESTON, Inc.*

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	12.00
SITE NAME :	CHARLES WOOD AREA 7	LOGGER :	K. VALENTI
BORING ID :	CW7-SB5	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	CME-55
EASTING :	0.0000 estimated	DATE STARTED :	12/21/94
ELEVATION :	0.000 estimated	DATE COMPLETED :	12/21/94

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
-11	11			Poorly graded sand, SP	LT BROWN OLIVE	LSE	WET		OVM 0.0	3" SPS used. Water at 11'-7" bgs. Fe lamina staining. Collected sample CWA7-SB05-A02.
-12	12									
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB5	1	1	0.00	2.00	SPS		5		70	25	0	0		NON	MOD	LSE	DRY	
CW7-SB5	2	1	2.00	4.00	SPS		0		35	60	5	0		LOW	MOD	FRM	MST	
CW7-SB5	3	1	4.00	6.00	SPS		0		60	40	0	0		NON	MOD	FRM	MST	
CW7-SB5	4	1	6.00	8.00	SPS		0		90	10	0	0		NON	MOD	LSE	MST	
CW7-SB5	5	1	8.00	10.00	SPS		0		100	0	0	0		NON	MOD	LSE	MST	
CW7-SB5	6	1	10.00	12.00	SPS		0		100	0	0	0		NON	MOD	LSE	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW7-SB6 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 12/21/94 *END DATE :* 12/21/94

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 8.00
INTERVAL: 0.00 ft. to 14.00 ft. BGS
METHOD : HSA *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE : CME-55

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
The borehole was abandoned then grouted to surface level.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.00	
SITE NAME : CHARLES WOOD AREA 7		LOGGER : K. VALENTI	
BORING ID : CW7-SB6		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Poorly graded sand with silt, SP-SM	ORANGE-BROWN	LSE	DRY	4 5 6 5	OVM 1.5	Fill(?)
-1	1									
-2	2		100	Silty sand, SM	ORANGE-BROWN	FRM	MST	5 5 6 5	OVM 0.0	
-3	3									
-4	4		50	Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	MST	11 13 15 17	OVM 0.0	Fill(?)
-5	5			No Sample Recovered						
-6	6		100	Silty sand, SM	ORANGE-BROWN	FRM	MST	12 12 14 17	OVM 0.0	Fill(?)
-7	7									
-8	8		100	Well graded sand with silt, SW-SM	OLIVE ORANGE/BR	LSE	MST	18 18 15 14	OVM 0.0	3" sps used, Iron (Fe) laminae staining. Mostly sands towards bottom of sps. More sand with depth
-9	9									
-10	10		100	Poorly graded sand, SP	ORANGE LT BROWN	LSE	MST	11 12 12 9	OVM 0.0	3" sps used. Olive in color at top of sps 10-5" color change to orange-lt brown.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

PROJECT : FT. MONMOUTH		TOTAL DEPTH : 14.00	
SITE NAME : CHARLES WOOD AREA 7		LOGGER : K. VALENTI	
BORING ID : CW7-SB6		DRILLING COMPANY : J.C. ANDERSON	
NORTHING : 0.0000 estimated		DRILLING RIG : CME-55	
EASTING : 0.0000 estimated		DATE STARTED : 12/21/94	
ELEVATION : 0.000 estimated		DATE COMPLETED : 12/21/94	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand, SP	ORANGE LT BROWN	LSE	MST		OVM 0.0	3" sps used. Olive in color at top of sps 10-5" color change to orange-lt brown.
-11	11									
-12	12		100	Poorly graded sand, SP	OLIVE BROWN	LSE	WET	8 11 13 12	OVM 0.0	3" SPS used. Sample CWA7-SB06-A03 collected. TD of borehole 14' bgs.
-13	13									
-14	14									
-15	15									
-16	16									
-17	17									
-18	18									
-19	19									
-20	20									

 GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW7-SB6	1	1	0.00	2.00	SPS		0		90	10	0	0		NON	MOD	LSE	DRY	
CW7-SB6	2	1	2.00	4.00	SPS		0		60	40	0	0		NON	MOD	FRM	MST	
CW7-SB6	3	1	4.00	5.00	SPS		0		90	10	0	0		NON	MOD	LSE	MST	
CW7-SB6	3	2	5.00	6.00	SPS		0		0	0	0	0						
CW7-SB6	4	1	6.00	8.00	SPS		0		70	30	0	0		LOW	MOD	FRM	MST	
CW7-SB6	5	1	8.00	10.00	SPS		0		90	10	0	0		NON	POR	LSE	MST	
CW7-SB6	6	1	10.00	12.00	SPS		0		100	0	0	0		NON	MOD	LSE	MST	
CW7-SB6	7	1	12.00	14.00	SPS		0		100	0	0	0		NON	MOD	LSE	WET	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE ID : CW9-SB1 *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/04/95 *END DATE :* 01/04/95

LOGGER/COMPANY : K. VALENTI

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 4.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 2.00
INTERVAL: 0.00 ft. to 4.00 ft. BGS
METHOD : *FLUID :* AIR
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : WELLS REEVE
DRILL RIG TYPE :

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :*

HOLE ABANDONED...(Y)es (N)o: Y
WELL INSTALLED...(Y)es (N)o: N
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :
Upon completion the borehole was grouted from TD to ground surface.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	4.00
SITE NAME :	CHARLES WOOD AREA 9	LOGGER :	K. VALENTI
BORING ID :	CW9-SB1	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	
EASTING :	0.0000 estimated	DATE STARTED :	01/04/95
ELEVATION :	0.000 estimated	DATE COMPLETED :	01/04/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	Poorly graded sand, SP	BROWN	LSE	MST		HNU 0.0	2" sps driven by sledge hammer, No access for rig olive in color towards bottom tip of sps.
-2	2		100	Well-graded sand, SW	OLIVE BROWN	LSE	SAT		HNU 0.0	Water occurred at 2.1' bgs. Collected sample, CW09-SB01-A02.

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW9-SB1	1	1	0.00	2.00	SPS		0	MF	100	0	0	0		NA	MOD	LSE	MST	
CW9-SB1	2	1	2.00	4.00	SPS		0	CF	100	0	0	0		NA	POR	LSE	SAT	

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Location Data — *Roy F. WESTON, Inc.*

BOREHOLE ID : CW9MW36A *PROJECT NAME:* FT. MONMOUTH
BEGIN DATE : 01/03/95 *END DATE :* 01/03/95

LOGGER/COMPANY : P. THOMAS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) :

TOTAL DEPTH : 6.00 *DEPTH TO BEDROCK :* 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 6.00 ft. BGS
METHOD : HSA *FLUID :* WATER
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : *FLUID :*
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : *FLUID :*

DRILLING COMPANY : J.C. ANDERSON
DRILLER : STEVE BURGER
DRILL RIG TYPE : ATV-SKID RIG

	ESTIMATED	*SURVEYED*
SURFACE ELEVATION :	0.000	31.220
N. COORDINATE :	0.0000	
E. COORDINATE :	0.0000	

WELL PERMIT.....(Y)es (N)o: N *PERMIT # :* NJ 29 32601

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N *No. OF WELLS :* 0
WELL NEST.....(Y)es (N)o: N *No. OF WELLS :* 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	*DEPTH*
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: N
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

Upon finishing with CW09-MW36A (1-3-95) a test borehole, the borehole was abandoned by grouting from TD to ground surface Hole CW09-MW36. Lat.N: 40 deg 17' 47" Long.W: 74 deg 4' 28"

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

Borehole Log

Roy F. WESTON, Inc.

PROJECT :	FT. MONMOUTH	TOTAL DEPTH :	6.00
SITE NAME :	CHARLES WOOD AREA 9	LOGGER :	P. THOMAS
BORING ID :	CW9MW36A	DRILLING COMPANY :	J.C. ANDERSON
NORTHING :	0.0000 estimated	DRILLING RIG :	ATV-SKID RIG
EASTING :	0.0000 estimated	DATE STARTED :	01/03/95
ELEVATION :	31.220 surveyed	DATE COMPLETED :	01/03/95

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	Silty sand, SM	BROWN	SFT	MST	2 4 4 4	HNU 0.0	Fill and topsoil.
30	1			No Sample Recovered						
29	2		55	Silty sand, SM	BROWN	LSE	WET	7 10	HNU 0.0	Fill/topsoil
				Poorly graded sand with silt, SP-SM	OLIVE BROWN	LSE	WET	12 13	HNU 3.0	Sat -2.8' bgs.
28	3			No Sample Recovered						
27	4		75	Silty sand, SM	OLV/GRN/BRN	LSE	SAT	7 12 16 18	HNU 3.0	Note: strong color change to lt Fe brown at 5.2'-5.5' bgs-trace round gravel qtz fragments.
26	5									
				No Sample Recovered						
25	6									
24	7									
23	8									
22	9									
21	10									

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
CW9MW36A	1	1	0.00	1.00	SPS	CM	5	FM	45	30	10	10		NA	POR	SFT	MST	
CW9MW36A	1	2	1.00	2.00	SPS		0		0	0	0	0						
CW9MW36A	2	1	2.00	2.30	SPS	M	5	MFC	70	20	0	5		NA	MOD	LSE	WET	
CW9MW36A	2	2	2.30	3.10	SPS		0	MCF	90	10	0	0			MOD	LSE	WET	
CW9MW36A	2	3	3.10	4.00	SPS		0		0	0	0	0						
CW9MW36A	3	1	4.00	5.50	SPS		0	MCF	85	15	0	0		NA	MOD	LSE	SAT	
CW9MW36A	3	2	5.50	6.00	SPS		0		0	0	0	0						

GEOLIS Copyright (c) 1990, Roy F. WESTON, Inc.

APPENDIX B

SURVEY DATA

Monitoring Well and Tidal Gauge Table
Fort Monmouth, New Jersey
(Continued)

Monitoring Well Designation	Outer Casing Elevation	PVC Elevation	Ground Elevation	Point Number
MP2-MW2	15.72	15.50	13.36	129
MP2-MW3	13.10	12.63	10.98	130
MP2-MW1	21.42	21.04	19.44	131
B2-MW02B	20.45	20.23	18.07	132
B1-MW01B	25.16	24.59	22.48	133
B5-MW05B	15.54	15.40	13.40	135
MP16-MW22	7.54	7.25	5.50	136
B9-MW09B	45.65	45.31	43.13	137
CW2-MW31	52.18	51.58	49.67	138
CW2-MW32	52.08	51.38	49.47	139
CW2-MW33	51.17	51.09	49.18	140
CW2-MW30	52.15	51.71	49.47	141
B10-MW10B	53.43	33.14	51.36	142
B8-MW08B	49.41	48.09	47.04	143
CW9-MW35	31.73	31.43	29.27	144
CW9-MW36	33.60	33.21	31.22	145
CW6-MW34	34.17	33.76	31.97	146
B6-MW06B	37.52	37.37	35.19	147
	Stream Bed Eelvation	**Distance to Top of Gauge**	**Top Elevation**	
Stilling Well-2	1.28	+9.00	10.28	148
Stilling Well-1	1.37	+9.26	10.63	150
Stilling Well-7	-1.02	+8.85	7.83	151
Stilling Well-9	-1.63	+8.80	7.17	152
Stilling Well-8	-1.71	+8.20	6.49	153

Monitoring Well and Tidal Gauge Table
Fort Monmouth, New Jersey

Monitoring Well Designation	Outer Casing Elevation	PVC Elevation	Ground Elevation	Point Number
MP4-MW7	17.16	16.75	14.83	100
MP4-MW8	11.05	10.68	9.02	101
MP4-MW9	9.91	9.69	7.77	102
MP5-MW11	12.21	11.70	9.77	103
MP3-MW4	19.70	19.02	17.34	104
MP3-MW5	13.42	13.30	11.28	106
MP3-MW6	12.61	12.42	10.25	107
MP3-MW12	15.88	15.20	13.47	108
MP5-MW10	7.53	6.91	5.13	109
MP8-MW14	8.62	8.22	6.19	110
MP8-MW13	8.23	7.80	6.02	111
MP8-MW15	7.35	7.01	5.01	112
MP18-MW24	9.04	8.16	6.78	113
MP18-MW25	8.64	8.28	6.35	115
B4-MW04B	12.44	12.08	9.78	116
B7-MW07B	66.74	66.31	64.27	117
CW1-MW-29	62.73	62.44	60.41	118
CW1-MW-26	62.62	62.46	60.54	119
CW1-MW-27	62.76	62.56	60.81	120
CW1-MW-28	63.17	62.89	60.73	121
MP14-MW19	10.47	9.68	7.98	122
MP14-MW20	9.77	9.29	7.43	123
MP14-MW21	9.78	9.57	7.50	124
MP12-MW18	7.04	6.62	4.78	125
MP12-MW16	8.74	8.35	6.33	126
MP12-MW17	8.24	7.87	5.90	127
B3-MW03B	21.53	21.09	19.20	128

APPENDIX C

WELL DEVELOPMENT LOGS

T.D. − W.L. = A; A × .65 = B (4" well) → 1-well volume

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: M-2

WELL NO.: MP2-MW-01
DATE: 12/22/94
LOGGER: P. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: 24.5' ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, ~~4-inch = 0.65~~, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATC MPH	MT/CM MSC	OC MTP	MV MEH	MCL	MPD		TURBIDITY	COMMENTS
1100	DSB	9.88											
1105	DSE												
1110	DBE/DOB		~4										V. silty gray
1115	DOE/DSB		~4		4.91	345	15.0 ~~.223~~	.223	TURBID				1.5 ppm U
1130	DSE	22.5	N/A		N/A								
1145		20.0	N/A		N/A								
1150	DOB	19.0	~1		5.22	333	15.3	.231	TURBID				1 ppm U
1200	DOE	DRY	N/A										
1218		19.90	N/A										
1230		20.00	N/A										
	FINAL												

* Well yield too low to pump - will redevelop with bailer/surge block ~~in order to increase yield FMT~~

Next Page

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03586-076-038
SITE: MP2
WELL NO.: MW01
DATE: 1-17-95
LOGGER: K. Williams
SIGNATURE: K. Williams

ONE WELL VOLUME: ~10.4 gallons WELL TD: 24.25' ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS pH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
STA	1405	8.25											
1405	DSB	8.25											
1425	DSE/DBB												
1430	DBB	14.60	BAILER	5.0	6.08	11.9	.271	106	1.0			H	DK. GRAY SILTY WATER!
1435	DBB/DSB	23.41	DRY	12.0	6.17	12.7	.277	097	0.0			H	" " "
1515	DSE	16.20											RECHARGING SLOWLY
1520	DBB	15.20	BAILER	15.0	5.07	12.7	.262	204	0.0			H	
1525	DBB	21.00	BAILER	18.0	5.08	12.7	.263	196	0.0			H	
1530	DBC/DSB		DRY	20.0								H	
1545	DSE	21.24											RECHARGING SLOW
	FINAL												

FINAL WELL YIELD: ~.05 (GPM) PUMP RATE - (ESTIMATED) CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBS - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: C3886-016-038
SITE: MPR MWC2

WELL NO.: MWC2
DATE: 12-22-94
LOGGER: K. Valentine
SIGNATURE: K. V[illegible]

ONE WELL VOLUME: ~5.7 gallons WELL TD: 19.26 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATC MPH	MSC	DO MTP	MV MEH	MCL	MPD		TURBIDITY	COMMENTS
0805	DSB STATIC	10.52	—	—	—	—	—	—	—	—	—	—	—
0815	DSE												
0820	DBB												
0830	DBE												
0833													Problems with generator won't start
0835	FMT	12.12											
0855	DOB								DK Green				
0955	FMT		2½ gpm	1	6.57	.427	13.30	064	Cloudy	.01			Clear/Little Cloudy
1005	FMT		2½	2	6.45	.416	13.50	046	DK Green	.01			
1015	FMT		2½	3	1.0	.417	13.80	105	Clear	2.0			
1020	FMT		2½		1	.419	14.00	103	Clear	2.0			
1025	FMT		2½		1	.415	13.80	106	Clear	2.0			
1030	FMT		2½		1	.412	13.90	105	Clear	2.0			No real odor
	FINAL												

Headspace HNU = 3.1

FINAL WELL YIELD: 2.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES		FIELD MEASUREMENT CODES	TURBIDITY
DBB - Begin Bailing	DBE - End Bailing	MTP - Temperature	Enter Turbidity Meter Reading (Final should be < 5 NTU)
DOB - Begin Overpumping	DOE - End Overpumping	MSC - Specific Conductance	OR
DRB - Begin Rawhiding	DRE - End Rawhiding	MPD - Photoionizer (e.g., HNu)	Enter Qualitative Observations
DCB - Begin Recirculation	DCE - End Recirculation	MFD - Flame Ionizer (e.g., OVA)	H - High: Opaque/Muddy/Silty
DHB - Begin Hydraulic Jetting	DHE - End Hydraulic Jetting	MDO - Dissolved Oxygen	M - Medium: Translucent/Cloudy
DAB - Begin Air Surging	DAE - End Air Surging	MPH - pH	L - Low: Transparent/Some Silt
DSB - Begin Surge Blocking	DSE - End Surge Blocking	MEH - Eh	N - None: Clear/No Visible Silt
DXB - Begin Other	DXE - End Other	MMC - Imhoff Cone	
Specify other method:		MO1 - Other:	
FMT - Field Measurements (select from codes at right)		MO2 - Other:	

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886 076-038-0020-00
SITE: MP2

WELL NO.: MW03
DATE: 12-22-94
LOGGER: K. VALENTI / J. LEEKS
SIGNATURE: K. Valenti

ONE WELL VOLUME: ~8.5 gallons WELL TD: 16.87 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS ATC MPH	MSC	°C MTP	MV MEH	MCL	MPD		TURBIDITY	COMMENTS
1100	STA	8.30											
1100	DSB												
1105	DSE												
1105	DBB												
1115	DBE	12.35	2gal										
1115	DOB		2gal						Silty Green				
1130	DOB		2gal		6.70	.429	16.2	098	S.G.	4.3			
1145	DOB	11.10	2.5gal		6.90	.412	16.6	095	S.G	4.0			
1215	DOB		3gal	1	6.91	.457	16.8	112	Clear	4.0			Ken surging pump
1225	DOB		3gal	2	6.75	.488	16.50	101	S.G	4.0			
1235	DOB		3gal	3	6.76	.470	17.0	119	Cloudy	4.0			
1240	DOB		3gal	4	6.88	.432	17.10	100	S.G	4.0			Ken surged pump
1250	DOB		3gal	5	6.91	.479	16.60	.098	Clear	4.0			
1250	DOE												
	FINAL												

FINAL WELL YIELD: 2.3 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 4 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method:
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USAEC
PROJECT: 03886-026-038
SITE: MP 3
WELL NO.: MW04
DATE: 1-0-95
LOGGER: K. VALENTE
SIGNATURE: K. V

ONE WELL VOLUME: ~8.1 gallons WELL TD: 25.10 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1245	STATIC	12.70	–	–	–	–	–	–	–				
1245	DSE	12.70											
1255	DBB	12.70	–	13.0								H	GREENISH - GRAY WATER
1320	DOB	14.00	~0.5	14.0	7.38	12.1	.396	013	2.0			H	GRAYISH - GREEN SILTY
1330	DOB	15.83	~1.0	19.0	~~6.55~~	11.8	.406	074	1.0			H	INCREASE FLOW
1340	DOB	17.05	1.0	29.0	5.82	14.6	.380	146	2.0			H	CLEARING BUT STILL SILTY
1350	DOB	17.30	1.0	39.0	5.56	15.0	.374	167	2.0			H	SAME
1400	DOB	17.48	1.0	49.0	5.78	14.9	.363	160	1.0			M	CLEARING - INCREASE FLOW TO 1.5
1410	DOB	18.16	2.0	~~69.0~~	5.76	14.7	.386	159	1.5			M	INCREASED FLOW TO 2.0 GPM
1420	DOB	18.90	2.5	69.0	5.81	14.6	.378	159	1.0			M	INCREASED FLOW TO 2.5 GPM.
1425	DOB	21.80	2.0	74.0		~~14.9~~						M	FLOW BACK TO 2.0 GPM
1430	DOB	24.23	2.0	94.0	5.76	14.6	.361	169	2.0			M	
1440	DOB	20.10	2.0	114.0	5.71	14.5	.342	148	1.0			M	
1450	DOB	20.12	2.0	134.0	5.68	14.5	.356	179	–			M	
1500	DBE	20.10	2.0	154.0	5.72	14.5	.353	181	–			L	CLEARING A LITTLE MORE, STILL CLOUDY
1505		16.10											RECHARGE
	FINAL												

FINAL WELL YIELD: 1-2 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 8 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rewhilding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
DME - End Bailing
DOE - End Overpumping
DRE - End Rewhilding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: PFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: MR3

WELL NO.: MW05
DATE: 1-12-95
LOGGER: K. Valenti
SIGNATURE: K. V[illegible]

ONE WELL VOLUME: 6.40 gallons WELL TD: 18.15 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
													Top of Pump is at 15.3
0850	STATIC	8.30	[illegible]	—	—	—	—	—	—				Began Surge Blocking. 0905
0915	DBB	8.30											Began Bailing.
0925	DBE	17.40		20									Bailed Dry.
0930	—	15.00											Recharge ~60' per 2 minutes
0945	DOB	9.20	0.5	20	6.58	12.2	1.054	-039	5.0			H	Dk. Gray Silty Water. Mild Odor.
0955	DOB	13.40	0.5	25	6.65	15.2	1.057	-063	6.5			H	" " "
1005	DOB	13.76	~0.5	~30	6.60	17.2	1.06	-079	7.0			H	" " "
1010	DOB	13.70	~0.5	~32	6.66	17.8	1.076	-090	8.0			M	Clearing But Still Dk. Gray
1015	DOB	13.79	~0.5	~35	6.68	18.8	1.057	-093	8.0			M	" " "
1025	DBE	Dry	1.0	~37									Increased Flow Rate Well Went Dry.
1035	DOB	10.20	~0.5	~38	6.60	16.7	1.084	-087	9.0			L	Clearing - Heavy Cloudy. (and) Odor
1040	DOB	12.05	~0.3	~40	6.60	15.6	1.081	-080	8.5			M	Increased Flow to ~0.5
1050	DOB	14.57	~0.5	~45	6.65	17.0	1.055	-087	8.0			L	
1100	DOB	14.51	~0.5	~50	6.62	17.7	1.084	-088	8.0			L	Clearing
1110	DOB	14.51	~0.5	~55	6.62	17.0	1.090	-088	8.0			L	Same as Above
1120	DOB	14.59	~0.5	~60	6.60	17.1	1.060	-086	8.0			L	Clearing
1130	DOB	—	~0.5	~65	6.63	16.8	1.091	-083	8.0			L	W.L. Hard to Determine
1140	DBE	—	~0.5	~70	6.58	16.8	1.078	-080	8.0			L	
	FINAL												

FINAL WELL YIELD: ~0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 0 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: MP3-MW06
WELL NO.: MW06
DATE: 1-18-95
LOGGER: K. VALENTI
SIGNATURE: K. V.

ONE WELL VOLUME: ~5.8 gallons WELL TD: 17.15 ft TOC
Well Volume (gallons/foot) 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.81

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
0830	STATIC	8.25	-	-									
0845	MSB												
0900	DSE												
0910	~~RFW~~ MSB	7.71											
1110	DBB	8.50	BAILED	5.0	5.79	15.1	1.340	190	0.5			H	GREENISH GRAY SILTY WATER
1115	DBE	DRY	BAILED	7.0	5.43	14.8	1.261	179	0.0			H	" " "
1117	—	15.80											
1145	DBB	10.20	BAILED	~~11.0~~ 8.0	6.06	13.6	1.120	040	1.0			H	TRASH ODOR
1153	DBE/DBB	DRY		13.0	6.17	13.7	1.124	053	1.0			H	
1206	DSE												
1210	DBB	11.00	BAILED	14.0	6.01	12.8	1.013	050	0.0			H	
1215	DBE	16.87		20.0	6.03	13.0	1.024	049	0.0			H	
1330	D.3	8.53	~~RFW~~	28.0	6.36	14.0	1.097	019	0.0			H	
1335	DBE	DRY		28.0								H	
1400	DOB	10.60	~~RFW~~	30.0	6.51	13.2	.947	002	0.0			H	CLEARING BUT STILL GREENISH SILTY WATER
1405	DBE	—		34.0								H	W.L. BELOW LEVEL IF PUMP = 14.95
1430	DOB	11.00	~~RFW~~	35.0	6.54	11.2	1.037	-005	0.0			M	WATER CLEARING BUT STILL SILTY/MURKY
1455	DOB	13.25	<0.5	41.0	6.48	16.6	.958	-005	0.0			M	CLEARING
1510	DOB	14.00	<0.5	45.0	6.61	16.4	1.001	-016	0.0			L	CLEARED UP
	FINAL								CONTINUED ON NEXT PAGE →				

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method:
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: INW3
WELL NO.: MW06
DATE: 1-18-95
LOGGER: V. VALENTI
SIGNATURE:

ONE WELL VOLUME: ~ 5.18 gallons WELL TD: 17.15 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNU				
CONTINUED FROM PREVIOUS PAGE													
1510	DOB	14.00	<0.5	45.0	6.61	16.4	1.001	-096	0.0			L	clear
1530	DOB	14.85	<0.5	49.0	6.49	17.9	.776	-013	0.0			L	
1540	DOB	—	<0.5	52.0	6.36	17.1	.763	-004	0.0			L	W.L. AT CLOSE pumping.
1550	DOB	—	<0.5	55.0	6.35	16.1	.772	006	0.0			L	clear.
1600	DOB	—	<0.5	58.0	6.35	16.1	.769	004	0.0			L	clear
1600	DOE												
	FINAL												

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FM1 - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: M-4

WELL NO.: MP4-MW-07
DATE: 12/22/94
LOGGER: D. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: _____ ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATC MPH	MV MEH	MV/CM MSC	OC MTP	MCL	MPD		TURBIDITY	COMMENTS
0820	DSB	8.39											
0835	DBB												
0845	DOB	8.39											V. Silty Brown
0855		13.90	~4		5.20	194	.306	14.4	V. Silty Brown	BKG			
0905		14.10	~4		5.53	185	.229	15.9	Cloudy	BKG			Cloudy
0915		14.21	~4		5.67	203	.228	15.9	Cloudy	BKG			
0930		14.32	~4		5.31	215	.218	16.9	CLOUDY	BKG			SLIGHTLY CLOUDY
0945		14.37	~4		5.65	221	.225	16.5	CLEAR	BKG			CLEAR
1000		14.37	~4		5.62	198	.221	16.5	CLEAR	BKG			SLIGHTLY CLOUDY
1005		14.37	~4		5.65	204	.225	16.7	CLEAR	BKG			SLIGHTLY CLOUDY
1010		14.37	~4		5.77	204	.220	16.3	CLOUDY	BKG			CLOUDY
1015		14.37	~4		5.64	195	.220	17.0	CLEAR	BKG			SLIGHTLY CLOUDY
1025		14.37	~4		5.61	213	.219	17.0	CLEAR	BKG			CLEAR
1035	DOE	14.40	~4		5.64	215	.223	16.3	CLEAR	BKG			SLIGHTLY CLOUDY
	FINAL												

FINAL WELL YIELD: ~4 GPM PUMP RATE ESTIMATED CORRESPONDING DRAWDOWN: 6 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

MW08

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Mon
SITE: M-5

WELL NO.: ~~MP5-MW-12~~
DATE: 12/20/94
LOGGER: F. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: _____ ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATC MPH	mV/cm MSC	oC MTP	mV MEH	MCl	MPD		TURBIDITY	COMMENTS
~~1400~~	1355												
~~1415~~	DSB	6.92											
1410	DBB												
1415	DSB												
1420	DOE									BKG			Dry x 1
1427	DSB	11.29	1.0										Y. Cloudy
1435		13.5	1.0		6.79	.371	15.6	.042	V. cl. gren	BKG			
1[illegible]5					6.87	.325	15.9	-.033	V. cl. gren	BKG			
1500					6.68	.375	16.1	-.054	lt. gen br	BKG			
1505		14.70	1.0		6.80	.374	15.8	-.038	cl. cloudy	BKG			
1525					6.82	.372	16.1	-.064	Clear	BKG			
1545	DOE	14.05	1.0		6.81	.386	16.2	-.062	Clear	BKG			
	* Well Purged clear after approx 1½ hours of Pumping *												
	FINAL												

FINAL WELL YIELD: ~~4.0~~ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: - Dry - FT

DEVELOPMENT ACTIVITY CODES		FIELD MEASUREMENT CODES	TURBIDITY
DBB - Begin Bailing	DBE - End Bailing	MTP - Temperature	Enter Turbidity Meter Reading (Final should be < 5 NTU)
DOB - Begin Overpumping	DOE - End Overpumping	MSC - Specific Conductance	OR
DRB - Begin Rawhiding	DRE - End Rawhiding	MPD - Photoionizer (e.g., HNu)	Enter Qualitative Observations
DCB - Begin Recirculation	DCE - End Recirculation	MFD - Flame Ionizer (e.g., OVA)	H - High: Opaque/Muddy/Silty
DHB - Begin Hydraulic Jetting	DHE - End Hydraulic Jetting	MDO - Dissolved Oxygen	M - Medium: Translucent/Cloudy
DAB - Begin Air Surging	DAE - End Air Surging	MPH - pH	L - Low: Transparent/Some Silt
DSB - Begin Surge Blocking	DSE - End Surge Blocking	MEH - Eh	N - None: Clear/No Visible Silt
DXB - Begin Other	DXE - End Other	MMC - Imhoff Cone	
Specify other method:		MO1 - Other:	
FMT - Field Measurements (select from codes at right)		MO2 - Other:	

* COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: K. Monmouth
SITE: M-5

WELL NO.: MP5-MW-09
DATE: 12/20/94
LOGGER: P. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: 24.35 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS ATC MPH	MEH	DC MTP	mS/cm MSC	MCL	MPD		TURBIDITY	COMMENTS
1130	DSB	5.5											
1200	DSE												green/gray -
1215	DBS			-									lower Pump
1225	DOB		5.7										green/gray v silt
1235					6.23	242	14.9	.436	V. silty	BKG			
1245		5	19.72		6.61	023	14.6	.445	V. silty	BKG			
1300		5	19.72		6.70	-042	15.0	.435	Cloudy	BKG			lt. green/n.
1305		5			6.79	-056	15.0	.446	Cl-clear	BKG			
1310		5	19.72		6.82	-055	14.8	.418	Clear	BKG			clear
1320		5	9.72		6.81	-065	14.8	.440	Clear	BKG			
	FINAL												

* Well Pumped clear after approx 1½ hours of Purging *

FINAL WELL YIELD: ~5 GPM PUMP RATE ESTIMATED CORRESPONDING DRAWDOWN: 14 FT

DEVELOPMENT ACTIVITY CODES		FIELD MEASUREMENT CODES	TURBIDITY
DBB - Begin Bailing	DBE - End Bailing	MTP - Temperature	Enter Turbidity Meter Reading (Final should be < 5 NTU)
DOB - Begin Overpumping	DOE - End Overpumping	MSC - Specific Conductance	OR
DRB - Begin Rawhiding	DRE - End Rawhiding	MPD - Photoionizer (e.g., HNu)	Enter Qualitative Observations
DCB - Begin Recirculation	DCE - End Recirculation	MFD - Flame Ionizer (e.g., OVA)	H - High: Opaque/Muddy/Silty
DHB - Begin Hydraulic Jetting	DHE - End Hydraulic Jetting	MDO - Dissolved Oxygen	M - Medium: Translucent/Cloudy
DAB - Begin Air Surging	DAE - End Air Surging	MPH - pH	L - Low: Transparent/Some Silt
DSB - Begin Surge Blocking	DSE - End Surge Blocking	MEH - Eh	N - None: Clear/No Visible Silt
DXB - Begin Other	DXE - End Other	MMC - Imhoff Cone	
Specify other method:		MO1 - Other:	
FMT - Field Measurements (select from codes at right)		MO2 - Other:	

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: M5

WELL NO.: IMP5-MW-10
DATE: 12/1/94
LOGGER: P. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: ~17 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS ATC MPH	mv/cm MSC	MV MEH	oc MTP	MCL	MPD		TURBIDITY	COMMENTS
1340	DSB	4.05											
1410	DBB												
1415	DOB		~5		6.12	.391	260	15.1	V silty	BKG			V. dark grey/sa
1440					6.58	.433	034	15.6	V silty	BKG			
1455					6.93	.433	030	15.7	cloudy	BKG			
1505		6.95	~5		6.72	.438	008	15.3	cloudy	BKG			
1510		7.01	~5		6.96	.445	045	15.4	cloudy	BKG			
1525			~5		6.81	.440	026	15.7	cloudy	BKG			
1600								13.6					
	FINAL												

FINAL WELL YIELD: ~5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G081291T

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: M-5

WELL NO.: MP5-MW-10
DATE: 12/21/04
LOGGER: P. Marks
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: _____ ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					ATC MPH	oC MTP	mS/cm MSC	mV MEH	mg/L MDO				
1345	DSB	7.10											After surging
1410	DSB												
1415	DSB												V. dark seen
1435			1.5		6.07	14.2	.249	109	After seen	BKG			
1455			~1.5		6.50	13.7	25	048	cloudy	BKG			
1505		10.30			6.55	14.1	.253	020	cloudy	BKG			
1510					6.58	14.4	.253	016	cloudy	BKG			
1525					6.52	14.1	.249	007	cloudy	BKG			
1545					6.5	13.1	.246	002	clear	BKG			
1600					6.17	13.6	248	H1	clear	BKG			
	FINAL												

FINAL WELL YIELD: 2.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

7.60
.65
3500
4560

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886 026-038
SITE: MP-8B
WELL NO.: MW-12
DATE: 01-05-95
LOGGER: K. VALENTE
SIGNATURE: K. Valente

ONE WELL VOLUME: ~5.0 gallons WELL TD: 17.30' ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS pH	°C Temp	Cond	MV	MPD			TURBIDITY	COMMENTS
0915	STATIC	9.70	—	—	—	—	—	—	—	—	—	—	—
0920	DSB	—	—	1.0	5.16	14.4	.183	256					Hand Bail - SLTY
0930	DBE												
0930	DOB		5gpm	4.0									Pump AT 1' OFF BOTTOM
0945	DXE												Pump silted up
0950	DOB		5gpm	6.0									
0955	DOB	12.65	2gpm	31.0									
1000	DOB	10.95	2gpm	41.0	6.2	11.7	.171	271	.01				
1015	DOB	11.2	3gpm	51.0	5.68	14.1	.170	264	.01				Pump lowered to 0.5' From Bottom
1035	DOB	11.38	3.5gpm	111.0	5.78	13.9	.171	262	.01				WATER CLEARING
1100	DOB	11.20	3.5		6.00	10.7	.165	228	.01				WATER CLEAR
1125	DOB	11.50	3.5		5.80	14.5	.164	229	.01				WATER CLEAR
1128	~~DOB~~	10.60	3.5	—	—	—	—	—	—	—	—	—	W.L. RAISING SLOWLY
REFERENCE LOG BOOK NOTES FOR THIS DAY.													
	FINAL												

FINAL WELL YIELD: 2-35 GPM PUMP RATE - (ESTIMATED) CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 038H6
SITE: M-B
WELL NO.: MW-13
DATE: 1/25/95
LOGGER: J. SACCOMANDI
SIGNATURE: [signature]

ONE WELL VOLUME: _____ gallons WELL TD: 16.86 ft TOC
Well Volume (gallons/foot) 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 6-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1145	DSB	6.01	—	—									
1150	DBB	—	—										
1155	DOB	*13.90		10	5.38	11.0	5.28	130	BKG			H	DK GRAY VERY SILTY
1200	DOB	8.45	6	40	6.07	11.7	5.24	013	BKG			H	DK GRAY CLEARING
1205	DOB	9.01	6	70	6.41	11.3	5.33	-047	BKG			M	"
1210	DOB	7.09	4	90	6.57	11.7	5.28	-069	BKG			L	HAZY
1215	DOB	7.49	4	110	6.68	11.7	5.17	-081	BKG			N	CLEAR
1220	DOB	7.50	4	130	6.72	11.7	5.17	-084	BKG			N	"
1225	DOB	7.51	4	150	6.75	11.5	5.17	-087	BKG			N	"
1230	DOB	7.52	4	170	6.75	11.6	5.13	-086	BKG			N	"
1235	DOB	7.53	4	190	6.73	11.8	5.10	-087	BKG			N	"
1240	DOB	7.54	4	210	6.72	11.8	5.09	-088	BKG			N	"
1245	DOB	7.55	4	230	6.74	11.8	5.02	-088	BKG			N	"
1250	DOE	7.56	4	250	6.76	11.8	5.01	-088	BKG	12		N	"
			SLIGHT	ODOR	AND	SLIGHTLY	SUDSY						
			DURING	DEVELOPMENT									
	FINAL												

FINAL WELL YIELD: 4 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 1.8 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G051291T

* 13.90 IS THE TOP OF PUMP

1 MI TIDE

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: M-8
WELL NO.: MW-14
DATE: 1/25/95
LOGGER: J. SACCOMANDI
SIGNATURE: John W. SC

ONE WELL VOLUME: _____ gallons WELL TD: 16.82 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MSC	MTP	MEH	MPO				
0920	DSB	7.80	—	—									
0925	DBB	—	—	6	BAILED		DRY					H	GREEN BROWN SILTY
0930	DBE	—	—	—								H	"
0945	DOB	11.56	~0.5	6	6.40	4.68	10.9	001	BKG			H	"
0955	DOB	9.95	~0.5	11	6.61	4.63	14.2	-077	BKG			H	"
1005	DOB	13.62	~1	21	6.47	4.72	19.4	-083	BKG			H	"
1010	DOE	*											
1025	DOB	8.92	~0.5	21	6.89	4.57	14.6	-106	BKG			H	"
1030	DOB	11.85	~0.5	23.5	6.92	4.65	13.2	-102	BKG			H	"
1035	DOB	11.57	~0.5	25	6.76	4.67	15.2	-101	BKG			H	" CLEARING
1040	DOB	11.28	~0.5	27.5	6.75	4.59	16.5	-102	BKG			H	" "
1045	DOB	11.62	~0.5	29	6.70	4.64	19.3	-104	BKG			H	" "
1050	DOB	11.86	~0.5	31.5	6.69	4.70	19.9	-104	BKG			H	" "
1055	DOB	12.11	~0.5	33	6.71	4.62	17.2	-105	BKG			M	" "
1100	DOB	12.43	~0.5	35.5	6.82	4.51	18.2	-108	BKG			L	LT GREEN BROWN VERY CLOUDY
1105	DOB	12.65	~0.5	37	6.72	4.46	18.7	-105	BKG			L	CLOUDY
1110	DOB	12.85	~0.5	39.5	6.69	4.53	18.9	-106	BKG			L	CLOUDY
1115	DOE	13.05	~0.5	41	6.74	4.42	19.6	-103	BKG			L	HAZY
	* WATER LEVEL DROPPED TO TOP OF PUMP / PUMP IS ABOVE BOW												
	FINAL												

FINAL WELL YIELD: ~0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 0 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

LOW TIDE

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW-15
CLIENT: USACE | DATE: 1/25/95
PROJECT: 03886-076-038 | LOGGER: J. SACCOMANDI
SITE: M-8 | SIGNATURE:

ONE WELL VOLUME: _____ gallons WELL TD: 16.65 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1345	DSB	5.00	—	—									
1350	DBB	—	—	10									
1358	DBE	—	—	10								H	DK GREEN GRAY SILTY
1405	DOB	8.61	2	10	5.69	9.7	3.77	133	BKG			H	"
1410	DOB	8.36	2	20	6.37	11.4	3.74	-032	BKG			H	" CLEARING
1415	DOB	8.24	2	30	6.63	11.6	3.79	-083	BKG			M	GRAY VERY CLOUDY
1420	DOB	8.95	2	40	6.68	11.7	3.80	-092	BKG			M	"
1425	DOB	8.93	2	50	6.75	10.9	3.77	-091	BKG			M	" CLEARING
1430	DOB	8.97	2	60	6.73	11.9	3.81	-089	BKG			M	" "
1435	DOB	9.01	2	70	6.75	12.2	3.81	-095	BKG			M	" "
1440	DOB	9.03	2	80	6.75	12.2	3.82	-096	BKG			M	" "
1445	DOB	9.05	2	90	6.76	12.4	3.77	-095	BKG			L	CLOUDY
1450	DOB	9.04	2	100	6.77	12.4	3.80	-098	BKG			N	CLEAR
1455	DOB	9.04	2	110	6.78	12.3	3.79	-099	BKG			N	CLEAR
1500	DOE	9.03	2	120	6.82	12.2	3.74	-098	BKG			N	CLEAR
			SEWAGE ODOR AND SUDSY WATER										
			THROUGHOUT DEVELOPMENT										
	FINAL												

FINAL WELL YIELD: ~2 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 4 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Phototonizer (e.g., Hnu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

ALMOST HIGH TIDE

GEOLIS Well Development Form

COMPANY: REW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: MP12

WELL NO.: MW-16
DATE: 1-16-95
LOGGER: K. Valentz
SIGNATURE: K. Valentz

ONE WELL VOLUME: ~8.6 gallons WELL TD: 16.76 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1320	STATIC	3.45	–	–	–	–	–	–	–				
1325	DBB	3.45	Bailed										3" PVC BAILER USED.
1340	DBE	9.47											
1345	DOB	8.70	0.5	1.0	7.15	21.7	.283	-052	0.0			L	CLEAR-HAZY - DETERGENT ODOR
1350	DOB	9.40	0.5	3.5	7.12	20.1	.289	-046	0.0			H	OLIVE-GREEN SILTY
1400	DOB	11.11	0.5	9.0	6.11	16.2	.262	-018	0.0			H	" " "
1410	DOB	12.25	0.5	14.0	5.86	16.2	.289	008	0.0			H	DRAW DOWN
1420	DOB	14.25	0.5	19.0	5.94	16.4	.287	012	0.0			H	SLOWED FLOW
1430	DOB	12.90	0.5	24.0	5.87	17.8	.278	022	–			H	WATER CLEARING. FLOW UP AGAIN)
1440	DOB	12.60	0.5	29.0	5.94	17.1	.262	020	–			M	CLEARING-BUT SILTY
1450	DOB	12.33	0.5	34.0	5.84	17.4	.283	026	–			L	CLEAR-HAZY
1500	DOB	12.25	0.5	39.0	5.90	17.7	.288	023	–			L	HAZE
1505	DOB	12.28	0.5	44.0	5.87	17.6	.288	018	–			L	CLEARING
1510	DOB	12.22	0.5	49.0	5.95	17.9	.288	028	–			N	CLEARED
1515	DOB	12.22	0.5	54.0	5.94	17.9	.288	029	–			N	
1520	DBE	12.22	0.5	59.0	5.91	17.6	.288	030	–			N	
	FINAL												

FINAL WELL YIELD: 0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 9 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USAFE
PROJECT: 02856-026-038
SITE: MP12
WELL NO.: MW-16
DATE: 1-12-95
LOGGER: V. VALENTI
SIGNATURE: V. Valenti

ONE WELL VOLUME: ~8.3 gallons WELL TD: 16.85 ft TOC

Well Volume (gallons/foot) 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1100	STATIC	4.15	-	-	-	-	-	-	1.0				
1115	DBB	4.15	BAILER										MILD ADS ODOR ON WATER.
1125	DBE	10.10	BAILED	15.0									DEPTH TO PROD. PUMP = 14.25'
1130	DOB	6.10	0.5	16.0	5.82	12.0	.276	142	3.0			H	DK. GRAY SILTY WATER
1140	DOB	6.02	0.5	20.0	5.82	11.9	.275	140	3.0			H	
1150	DOB	5.70	0.5	25.0	6.58	19.1	.265	054	2.0			H	
1200	DOB	6.15	0.5	30.0	6.54	16.6	.380	-054	1.0			M	CLEARING BUT STILL A LITTLE SILTY - GPM TO 1.0 GPM.
1210	DOB	6.80	1.0	40.0	6.61	17.9	.362	-068	1.0			M	CLEARING - HAZY
1215	DOB	7.36	1.0	45.0	6.59	17.1	.409	-076	2.0			M	" " "
1220	DOB	7.38	1.0	50.0	6.56	17.4	.359	-079	1.0			M	
1230	DOB	7.87	1.0	60.0	6.56	16.5	.408	-085	2.0			M	
1235	DOB	8.00	1.0	65.0	6.59	16.1	.411	-083	2.0			M	CLEAR BUT LT. HAZE
1240	DOB	8.13	1.0	70.0	6.57	16.1	.413	-083	4.0			L	SEPTIC ODOR NOW
1245	DOB	8.24	1.5	75.0	6.57	14.9	.422	-077	3.0			L	INCREASED FLOW TO 1.5 GPM
1250	DOB	9.51	1.5	88.5	6.54	15.9	.411	-092	2.0			L	CLEAR BUT HAZY
1255	DOB	9.88	1.5	90.0	6.59	16.0	.382	-098	-			L	
1300	DBE	9.96	1.5	98.0	6.55	16.0	.391	-096	-			L	CLEAR & HAZY
	FINAL												

FINAL WELL YIELD: ~1 GPM PUMP RATE (ESTIMATED) CORRESPONDING DRAWDOWN: 5 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FM1 - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be <5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: FT MONMOUTH
SITE: MP-12
WELL NO.: MP-12 - MP-18
DATE: 1/17/95
LOGGER: SACCOMANDI/VALENTE
SIGNATURE:

ONE WELL VOLUME: ≈ 9.0 gallons WELL TD: 17.20 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
0840	START	3.45											
0845	DSB												
0855	DSE												
0855	DBB											H	WATER CLAY-GRAY SILTY
0900	DBE	DRY	—	RECHARGE RATE APPROX. 0.5' A MINUTE								—	WELL DRY AFTER BAILING 13 GAL.
0915	DOB	9.10	0.5	0					0.0			H	DK. GRAY SILTY WATER
0917	DOB	9.80	0.5	1.0	4.44	11.1	.229	247	0.0			H	" " "
0930	DOB	10.03	0.5	7.0	4.41	17.6	.241	245	0.0			H	"
0940	DOB	10.08	0.5	12.0	4.39	19.8	.243	245	1.0			H	CLEARING BUT STILL SILTY
0950	DOB	10.30	0.5	17.0	4.54	17.7	.251	254	2.0			M	CLEARED UP A LITTLE
1000	DOB	10.32	0.5	22.0	4.97	17.1	.230	211	2.0			H	SOME YELLOW-BROWN SILTY WATER AGAIN
1010	DOB	10.35	0.5	27.0	5.00	16.9	.231	216	2.0			M	CLEARED MORE
1020	DOB	10.20	0.5	32.0	4.44	18.8	.229	258	2.0			M	CLEARING BUT HEAVY HAZE
1025	DOB	10.09	0.5	34.5	4.71	18.9	.205	254	3.0			L	CLEARING - HAZY
1030	DOB	10.07	0.5	37.0	4.69	18.6	.225	254	3.0			L	
1035	DOB	10.03	0.5	39.5	4.68	18.3	.231	252	2.0			L	CLEARED WITH HAZE
1040	DOB	9.97	0.5	42.0	4.69	18.1	.233	252	0.0			L	" " "
1045	DBE	9.95	0.5	45.0	4.72	18.2	.229	243	1.0			L	" " "
	FINAL												

FINAL WELL YIELD: 0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 0 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612917

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: MP14

WELL NO.: MW-19
DATE: 1-16-95
LOGGER: K. VALENTI
SIGNATURE: K. Valenti

ONE WELL VOLUME: ~7.0 gallons WELL TD: 17.60 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1020	STATIC	6.95	–	–	–	–	–	–	–				
1020	DBB	6.95	BAILED	1.0					0.0				3" PVC Bailer - MILD SEPTIC OC AND SHEEN ON WATER
1035	DBE	7.15		15.0									Pump set 6" off Bottom.
1040	DOB	7.15	0.5	16.0	5.94	13.0	.366	060	2.5			H	DK. Gray Silty water
1050	DOB	7.30	0.5	20.0	5.43	13.4	.369	057	2.0			H	Pump at 3' off Bottom of well.
1100	DOB	7.30	0.5	25.0	5.63	16.2	.457	-009	1.0			H	Flow rate to 1.0 GPM
1110	DOB	7.47	1.0	35.0	5.80	16.8	.500	-030	2.0			H	Beginning to clear but still silty.
1120	DOB	7.41	1.0	45.0	5.86	15.3	.518	-036	2.0			M	Clearing - Increased GPM to 1.5 GPM
1130	DOB	7.45	1.5	60.0	5.95	14.8	.534	-043	1.0			H	Increase flow to 2 GPM.
1140	DOB	7.52	2.0	80.0	5.90	14.5	.540	-047	4.0			M	Pump 1' off Bottom of well. Cleared a little.
1150	DOB	7.65	2.5	105.0	5.93	14.0	.555	-049	2.0			L	Increase flow to 2.5 GPM - Cleared but hazy
1200	DOB	8.10	4.0	145.0	5.96	13.5	.569	-033	2.0			L	Flow to 4.0 GPM
1205	DOB	9.15	6.0	205.0	5.94	13.2	.580	-030	1.0			L	Flow to 6.0 GPM
1210	DOB	9.70	7.0	275.0	5.97	13.3	.591	-033	1.0			L	Flow to 7.0 GPM
1215	DBE	9.72	7.0	345.0	5.98	13.3	.590	-027	1.0			L	Good recharge rate
	FINAL												

FINAL WELL YIELD: 6-7 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method:
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886.096-038
SITE: MP14
WELL NO.: MW20
DATE: 1-13-95
LOGGER: K.V...
SIGNATURE: K.V...

ONE WELL VOLUME: ~6.5 gallons WELL TD: 16.87 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNU				
1250	STATIC	6.85	-	-	-	-	-	-	-	-			
1255	DSB												
1300	DSE/DBB												
1305	DBE	12.00		10.0									
1310	DOB	7.45	0.5	16.0	7.18	17.3	.246	-005	0.0			H	DK. GRAY SILTY WATER BAILED SOME WELL MUD.
1320	DOB	8.47	0.5	16.0	6.99	17.3	.242	-010	0.0			H	W.L. WITH PUMP IN WELL.
1330	DOB	9.40	0.5	21.0	6.50	15.5	.386	-009	2.0			H	" " "
1340	DOB	10.45	0.5	26.0	6.50	15.7	.378	-018	2.0			H	CLEARING, SLIGHTLY DK. GRAY SLT. LAND FILL ODOR ON WATER.
1350	DOB	11.17	0.5	31.0	6.56	15.6	.363	-015	-			M	
1355	DOB	12.00	0.5	33.5	6.50	15.7	.356	-015	-			M	MILD SEPTIC ODOR
1400	DOB	12.13	0.5	36.0	6.47	15.8	.354	-014	-			M	
1405	DOB	12.38	0.5	38.5	6.53	16.6	.352	-020	-			M	
1410	DOB	12.39	0.5	41.0	6.51	16.5	.344	-008	-			H	SILTY AGAIN
1415	DOB	12.21	0.5	43.5	6.48	15.8	.364	-014	-			H	MILD SEPTIC ODOR
1420	DOB	12.19	0.5	46.0	6.45	15.8	.364	-013	-			M	CLEARING A LITTLE
1425	DOB	11.91	0.5	48.5	6.46	16.1	.360	-016	-			M	
1430	DOB	11.58	0.5	51.0	6.45	16.1	.360	-016	-			L	CLEAR BUT HAZY
1440	DOB	10.87	0.5	56.0	6.48	16.0	.358	-016	-			L	
1450	DOE	10.10	0.5	61.0	6.44	15.9	.356	-015	-			L	
	FINAL											L	CLEAR BUT HAZY. MILD SEPTIC ODOR.

FINAL WELL YIELD: 0.5 GPM . PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 4 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photovisual (e.g., Hnu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 038861076-038 (89)
SITE: MP-12
WELL NO.: MW21
DATE: 1-13 95
LOGGER: K. VALENTE
SIGNATURE: K. V

ONE WELL VOLUME: ~7.8 gallons WELL TD: 19.28 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
													Top of Pump at 16'-6".
0900	START	7.26	-	-	-	-	-	-	-				
0910	DSB	7.26											MILO LANDFILL ODOR
0920	DBB	7.26	Bailed										3" PVC Bailer used
0930	DSE	13.24	Bailed	7.0									W.L. Rising, Pump at 1' off Bottom
0950	DOB	7.26	0.5	8.0	6.60	14.7	.375	170	0.0			H	DK. GRAY SILTY WATER
1000	DOB	13.20	0.5	13.0	6.82	16.5	.409	111	0.0			H	" " "
1010	DOB	13.30	0.5	18.0	6.73	19.1	.359	041	0.0			H	" " "
1020	DOB	13.35	0.5	23.0	6.67	19.5	.348	-002	-			H	Beginning to clean but still DK. Gray Silty
1030	DOB	13.38	0.5	28.0	6.66	19.5	.350	-037	-			M	Clearing More
1040	DOB	16.40	M.O	38.0	6.60	18.1	.464	-013	-			H	SILTY AGAIN
1050	DOB	-	M.O	48.0	6.64	18.1	.320	-005	-			H	" " "
1100	DOB	-	0.5	53.0	6.61	19.6	.302	-026	-			H	WATER CLEARED UP A LITTLE AGAIN - W.L. BEGIN R-UP AGAIN.
1110	DOB	-	0.5	58.0	6.65	18.4	.341	-047	-			H	" " "
1120	DOB	-	0.5	63.0	6.55	17.6	.324	-052	-			M	MILO LANDFILL ODOR ON WATER STILL
1130	DOB	-	0.5	68.0	6.54	17.6	.336	-054	-			L	CLEARED UP - CLOUDY
1140	DOB	-	0.5	73.0	6.53	17.7	.346	-053	-			N	CLEAR
1150	DOB	-	0.5	78.0	6.50	17.7	.355	-055	-			N	" " "
	DOE												
	FINAL												

FINAL WELL YIELD: 0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 10 (FT)

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G081291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: MP16
WELL NO.: MW-22
DATE: 1-19-95
LOGGER: K. VALENTE
SIGNATURE: [illegible] K. Valente

ONE WELL VOLUME: ~8.64 gallons WELL TD: 16.72 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNU				
1400	2.46	STATIC											
1410	DOB	1.95	1.0	1.0	5.54	16.9	1.454	067	0.0			H	BROWN SILTY WATER.
1415	DOB	—	5.0	1.0	6.07	11.7	1.294	001	0.0			H	W.L. PROBE MALFUNCTION
1420	DOB	—	10.0	1.0	6.14	11.7	1.247	016	0.0			H	CLEARING BUT STILL HEAVY SILT
1425	DOB	—	15.0	1.0	6.06	12.4	1.328	003	0.0			H	
1430	DOB	—	20.0	1.0	6.13	12.2	1.297	012	0.0			H	
1435	DOB	—	25.0	1.0	6.07	12.4	1.315	006	0.0			H	
1440	DOB	—	30.0	1.0	6.06	12.4	1.319	008	0.0			M	BEGINNING TO CLEAR / CLOUDY
1445	DOB	—	35.0	1.0	6.09	12.6	1.301	007	0.0			M	
1450	DOB	—	40.0	1.0	6.08	12.6	1.297	006	0.0			M	
1455	DOB	—	45.0	1.0	6.09	12.7	1.298	008	0.0			M	
1500	DOE	—	50.0	1.0	6.09	12.6	1.298	008	0.0			M/L	STILL CLOUDY ALMOST CLEAR.
	FINAL												

FINAL WELL YIELD: 1 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: — FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612917

16.72
3.43
13.29
.65
6645

6645
7974
86385

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USAKE
PROJECT: 03586-076-078
SITE: MP16

WELL NO.: MW22
DATE: 01-05-95
LOGGER: [illegible] / [illegible]
SIGNATURE: [illegible]

ONE WELL VOLUME: ~8.64 gallons WELL TD: 16.72 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS (MPH) PH	(MTP) Temp	(MSC) Cond.	MV				TURBIDITY	COMMENTS
0840	STATIC	3.43											
					~~5.16~~	~~14.4~~	~~.183~~	~~.256~~	KBV				
0855	DBE	16.15	—	3.0	6.31	10.6	.547	035					Silty - Slow Producer. Dry.
1500	STATIC	3.45											
1505	DSB												
1518	DBB			10.0									
1515	DBE	15.2											
1522	DSB												
1525	DSE	6.75											
1525	DBB			17.0									WATER IS MUDDY BROWN
1530	DBE												LET RECHARGE
1535	DBB												
1537	DBE	14.40											
1620	DOB		2.0	17.0									
1627	DOB		1.0	31.0									
1645	DOE	14.00	1										Pump cut off
1650	DOB	9.80											Pump Dry
1700	DOE												
	Recommend Further Development - Getting Dark - No Daylight												
	FINAL												

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: M-18
WELL NO.: MW-24
DATE: 2/18/95
LOGGER: P. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: _____ ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS ATC MPH	mS/cm MSC	°C MTP	mV MEH	MPD	MCL		TURBIDITY	COMMENTS
0835	DSB ~~BHG~~	3.16											Begin Surge Blocking
0855	DBB			Bailed	Dry			x 1		V.silty gray			Begin Bailing
0920	DOE	*											Generator Not working
0935	DBB	10.12			5.94	72	10.5	030	BKG			7200	Begin Bailing
0939		17.16		Bailed	Dry		x 1			V.silty gray			Move to 25 Allow Recovery
1040		8.91											
1110	DBE	17.16		Bailed	Dry								~20-25 gallons TOTAL
1147	DBB	12.40											
1159	DBE	15.75		6	6.58	72	11.8	-015	BKG	V.silty gray		7200	Bailed ~6 gallons
1335		8.92											
1413	DOE												
1424		10.35	0.25	0.5	6.50	72	13.3	-00[illegible]	BKG	same		7200	lowhole?
1433		12.08	0.25	0.5								7200	
1440		13.47	0.25	0.5	7.27	72	16.6	-085	BKG	eter same		7200	Turned Flow up-ranchy at pump intake valve
1441	DOB												
1527		10.04	[illegible]		[illegible]	72	8.7	-06[illegible]	BKG	[illegible]		7200	
1540		11.51	0.25	5	7.20	72	14.2	-100	BKG	eter same		7200	
1547		13.35	0.25	5	7.28	72	18.5	-100	BKG	same		7200	
	FINAL												

1335 8.92

1433 12.40

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY ft

DEVELOPMENT ACTIVITY CODES		FIELD MEASUREMENT CODES	TURBIDITY
DBB - Begin Bailing	DBE - End Bailing	MTP - Temperature	Enter Turbidity Meter Reading (Final should be < 5 NTU)
DOB - Begin Overpumping	DOE - End Overpumping	MSC - Specific Conductance	OR
DRB - Begin Rawhiding	DRE - End Rawhiding	MPD - Photoionizer (e.g., HNu)	Enter Qualitative Observations
DCB - Begin Recirculation	DCE - End Recirculation	MFD - Flame Ionizer (e.g., OVA)	H - High: Opaque/Muddy/Silty
DHB - Begin Hydraulic Jetting	DHE - End Hydraulic Jetting	MDO - Dissolved Oxygen	M - Medium: Translucent/Cloudy
DAB - Begin Air Surging	DAE - End Air Surging	MPH - pH	L - Low: Transparent/Some Silt
DSB - Begin Surge Blocking	DSE - End Surge Blocking	MEH - Eh	N - None: Clear/No Visible Silt
DXB - Begin Other	DXE - End Other	MMC - Imhoff Cone	
Specify other method:		MO1 - Other:	
FMT - Field Measurements (select from codes at right)		MO2 - Other:	

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

Recovery ≈ 1.5' every 10 minutes

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USGS
PROJECT: [illegible]
SITE: [illegible]

WELL NO.: MW-25
DATE: 11/19/95
LOGGER: P. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: 17.00 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATL MPH	MV MEH	mV/cm MSC	°C MTP	MPO	MCL		TURBIDITY	COMMENTS
0948	DSB	4.21	Bailed										
1005	DBB		Bailed										Begin Bailing
1025	DBE		Bailed		6.59	0.02	72	11.6	BKG	V silty gray		DRY	Bailed ~2 volumes 10-1
1133	DBB	11.99	Bailed										
1141	DBE	15.90	Bailed	5	6.50	186	72	11.5	BKG	V silty gray			
1204	DBB	14.75											
1345	DBB	10.87											
1357	DBE	16.45	Bailed	8	6.08	182	72	11.9	BK	same		DRY	Begin Bailing Bailed Dry [illegible]
1445		14.62											
1533	DBB	[illegible]											
1537		16.15	Bailed	5	7.57	204	72	BKG	[illegible]	same		DRY	[illegible]
	FINAL												

14:20
15:16

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 12 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

Recovery ≅ 0.4' every 10 minutes

G061291T

#26

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03286-076-037
SITE: CV01

WELL NO.: MW26
DATE: 1/20/95
LOGGER: S. SACCOMANDI
SIGNATURE: Stan W. SC

ONE WELL VOLUME: _____ gallons WELL TD: 16.85 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: MPH	MEH	MSC	MTP	MFH	MFD	MDO	TURBIDITY	COMMENTS
0915													
~~1130~~	~~DSB~~	9.25											
~~1140~~	~~DBB~~	NR		BAILED	DRY								~~10 GALS~~
~~1145~~	~~DOB~~	10.35	1.5		4.46	377	12.5	258	BKG			2?	~~HIGH BROWN SILTY~~
1250	DSB			gas									
1300	DBB	NR		~10	BAILED DRY (7) BAILERS							H	YELLOW CLOUDY
1315	DOB	11.90	≈1	≈10	4.92	280	12.1	.610	BKG			H	"
1320	DOB	12.25	≈1	15	4.75	298	13.8	.637	BKG			H	"
1325	DOB	12.73	≈1	20	4.72	321	15.0	.642	BKG			H	"
1330	DOB	13.70	≈1	25	4.82	332	14.6	.677	BKG			H	" CLEARING
1335	DOB	13.35	≈1	30	4.86	332	14.5	.758	BKG			H	" STILL CLEARING
1340	DOB	14.15	≈1	35	4.83	336	14.0	.655	BKG			H	" "
1345	DOB	<14.40	≈1	40	4.86	338	14.3	.757	BKG			H	" "
1350	DOB	<14.40	.5-1	42.5	4.92	343	14.7	.741	BKG			M	VERY CLOUDY
1351	DOE	<14.40	WATER LEVEL AT PUMP WAIT FOR RECHARGE										
1400	DOB	10.10	≈1	42.5	4.93	341	13.7	.738	BKG			L	HAZY
1405	DOB	14.20	≈1	47.5	4.90	345	14.1	.646	BKG			M	VERY CLOUDY
1410	DOE	<14.40	≈1	52.5	4.94	346	14.3	.755	BKG			L	HAZY
1414	DOB	12.60	≈1	52.5	4.97	350	14.5	.768	BKG			L	CLOUDY
OVER		14.40	TOP OF PUMP										
	FINAL												

FINAL WELL YIELD: ~1 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

#26 CONTINUED

GEOLIS Well Development Form

COMPANY:	RFW	WELL NO.:	MW 26
CLIENT:	USACE	DATE:	1/20/95
PROJECT:	02836-076-037	LOGGER:	J SACCOMANDI
SITE:	CWO1	SIGNATURE:	John W. Sc

ONE WELL VOLUME: _____ gallons WELL TD: 16.85 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MEH	MTP	MSC	MPD				
1420	DOB	14.2	~1	58.5	4.94	353	14.8	.659	BKG			L	VERY HAZY
1425	DOE	<14.40	~1	63.5	4.94	356	14.2	.751	BKG			L	HAZY
1428	DOB	12.80	~1	63.5	4.98	352	14.2	.770	BKG			L	HAZY
1430	DOB	13.50	~1	65.5	4.96	356	15.0	.712	BKG			L	SLIGHT HAZE
1435	DOB	<14.40	~1	70.5	4.93	358	14.6	.672	BKG			L	SLIGHT HAZE
1440	DOB	<14.40	~1	75.5	5.00	360	15.1	.773	BKG			L	SLIGHT HAZE
1445	DOB	<14.40	~1	80.5	4.97	347	15.2	.733	BKG			N	CLEAR
1450	DOE	<14.40	~1	85.5	4.95	353	15.1	.731	BKG			N	CLEAR
	FINAL												

FINAL WELL YIELD: ~1.0 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 5 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612911

#27

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: C1986-076-037
SITE: CW01
WELL NO.: MW 27
DATE: 1/20/95
LOGGER: T SACCOMANDI
SIGNATURE: T. W. SC

ONE WELL VOLUME: _____ gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MEH MSC	MTP	MSC MEH	MPD				
0915		9.31											
1310	DBB	9.39											
1315	DBB	NR		≈10		BAILED DRY (7) BAILERS						H	YELLOW/BROWN SLTY
1325	DOB	10.41	≈1	≈10	4.9	311	11.0	.361	BKG			M	"
1330	DOB	10.46	≈1	15	4.86	325	13.8	.725	BKG			H	"
1335	DOB	10.46	≈1	20	4.80	333	15.7	.777	BKG			H	"
1340	DOB	10.56	≈1	25	4.82	339	16.4	.830	BKG			H	" CLEARING
1345	DOB	11.25	≈1.25	32.5	4.81	342	16.8	.815	BKG			H	" STILL CLEARING
1350	DOB	11.35	≈1.25	39.5	4.85	343	15.9	.774	BKG			H	" "
1355	DOB	11.40	≈1.25	47	4.87	341	16.2	.815	BKG			M	VERY CLOUDY
1400	DOB	11.44	≈1.25	54.5	4.77	349	16.8	[illegible]	BKG			L	HAZY
1405	DOB	11.45	≈1.25	62.0	4.79	351	16.8	.836	BKG			N	CLEAR
1410	DOB	11.45	≈1.25	69.5	4.82	353	16.8	.837	BKG			N	CLEAR
1415	DOB	11.47	≈1.25	75.5	4.83	355	16.9	.838	BKG			N	CLEAR
1420	DOB	11.47	≈1.25	83	4.82	357	17.0	.834	BKG			N	CLEAR
1425	DOB	11.47	≈1.25	90.5	4.84	359	16.9	.836	BKG			N	CLEAR
1430	DOB	11.50	≈1.25	98	4.82	358	17.3	.833	BKG			N	CLEAR
1435	DOB	11.50	≈1.25	105.5	4.81	361	17.3	.840	BKG			N	CLEAR
1440	DOB	11.50	≈1.25	113	4.83	364	16.9	.837	BKG			N	CLEAR
OVER	FINAL												

FINAL WELL YIELD: ~1.25 (GPM) PUMP RATE - (ESTIMATED) CORRESPONDING DRAWDOWN: 3 (FT)

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G081291T

GEOLIS Well Development Form

#27 CONTINUED

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CWO1

WELL NO.: MW27
DATE: 1/20/95
LOGGER: J. SACCOMANDI
SIGNATURE: L. SC

ONE WELL VOLUME: _____ gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 | 4-inch = 0.65 | 6-inch = 1.47 | 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MEH	MTP	MSC	MPD				
1445	DOB	11.50	1.25	120.5	4.81	366	17.3	.842	BKG			N	CLEAR
1450	DOE	11.50	1.25	128	4.82	356	17.6	.828	BKG			N	CLEAR
	FINAL												

FINAL WELL YIELD: 0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., Hnu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

#28

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CW01

WELL NO.: MW 28
DATE: 1/20/95
LOGGER: J. SALLOMANDI
SIGNATURE: [signature]

ONE WELL VOLUME: _____ gallons WELL TD: 16.86 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MFH	MPD			TURBIDITY	COMMENTS
0915	DSB	9.48	STOP		DUE TO		HEAVY		DOWNPOUR				
1130	DBB	NR	BAILED	10	DRY								10 GALS
1145	DOB	9.81	1.5	17.5	5.60	8.9	1.272	097	BKG		H	~~28~~	~~MEDIUM~~/BROWN SILTY/CLEARING
1200	DOB	10.50	1.5	~~27.5~~ 32	4.60	15.6	.348	168	BKG		H		HIGH/SILTY
1205	DOB	10.45	1.5	46.5	4.72	15.0	.349	237	BKG		H		CLEARING/VERY CLOUDY
1215	DOB	11.00	≈2.0	66.5	4.81	15.5	.342	279	BKG			M	VERY CLOUDY
1225	DOB	11.07	2.0	86.5	4.81	14.8	.345	290	BKG			N	CLEAR
1235	DOB	11.05	2.0	106.5	4.73	15.5	.342	301	BKG			N-L	CLEAR TO HAZY
1240	DOB	11.05	2.0	116.5	4.77	15.4	.336	299	BKG			L	VERY HAZY
1245	DOB	11.05	2.0	126.5	4.84	15.2	.343	307	BKG			L	VERY HAZY
1250	DOB	10.95	2.0	136.5	4.92	15.6	.335	296	BKG			L	VERY HAZY
1255	DOE	11.05	2.0	GENERATOR			QUIT	TEMPORARILLY					
1300	DOE	11.10	2.0	146.5	4.82	15.3	.337	302	BKG			L	VERY HAZY
		WATER LEVEL WAS NOT DRAWN DOWN ANY											
		FURTHER DUE TO THE PUMP LEVEL											
	FINAL												

FINAL WELL YIELD: 1.5-2 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 2 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

#29

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CW01
WELL NO.: MW29
DATE: 1/20/15
LOGGER: T. SACCOMANDI
SIGNATURE:

ONE WELL VOLUME: _____ gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1130	DSB	9.52											
1140	DBB	NR		10	RAILED DRY							/	
1145	DOB	10.35	1.5	17.5	5.60				BKG			L	10 GALS
1155	DOB	10.60	1.5	32.5	5.72	12.3	.400	070	BKG			H	29 HIGH BROWN SILTY
1205	DOB	11.05	1.5	47.5	5.08	13.7	.392	202	BKG			H	CLEARING/HIGH SILTY
1215	DOB	11.51	≈2.0	67.5	5.07	12.8	.395	264	BKG			M	CLEARING/MEDIUM/VERY CLOUDY
1225	DOB	11.29	2.0	87.5	5.24	13.9	.395	255	BKG			M	VERY CLOUDY
1235	DOB	11.30	2.0	107.5	5.21	14.4	.399	276	BKG			N	CLEAR
1240	DOB	11.30	2.0	117.5	5.23	13.8	.402	275	BKG			N	CLEAR
1245	DOB	11.30	2.0	127.5	5.09	13.9	.404	288	BKG			N	CLEAR
1250	DOB	11.30	2.0	137.5	5.18	14.2	.401	275	BKG			N	CLEAR
1255	DOB	11.32	2.0	147.5	5.26	14.3	.403	277	BKG			N	CLEAR
1300	DOE	11.31	2.0	157.5	5.29	14.3	.399	272	BKG			N	CLEAR
		WATER LEVEL WAS NOT DRAWN DOWN ANY FURTHER											
		DUE TO THE PUMP LEVEL											
	FINAL												

FINAL WELL YIELD: 1.5-2 GPM PUMP RATE - (ESTIMATED) CORRESPONDING DRAWDOWN: 2 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612917

=30

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03686-076-037
SITE: Q11.02
WELL NO.: MW30
DATE: 01-09-95
LOGGER: K. Valentine
SIGNATURE: K. Valentine

ONE WELL VOLUME: ~6.9 gallons WELL TD: 17.92 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MFV	HNV				
1330	STATIC	7.34	-	-	-	-	-	-	00			-	MODERATE ROTTEN ODOR IN WELL
1400	DBB	7.34	-									H	
1410	DBE		-										
1420	DBS		-	25.0									
1430	DBB												
1440	DBD				6.0	16.8	.635	015	0.0			H	WATER STILL SILTY.
1445	DBE			30.0									
1510	DBB			32.0	6.12	15.0	.623	005	0.0			H	WATER CLEARING BUT STILL SILTY
1530	DBB			35.5	6.06	15.0	.632	0087	0.0			H	
1550	DBB			38.0	5.98	15.6	.641	012	00			H	
1600	DBE	DRY		40.0	6.03	15.1	.630	-004				L	WATER CLEARED JUST SLIGHTLY SILTY
1625	DBE												
1/24/95 0910	DBB	6.90	—										
0945	DBB	DRY	<	12.0									
1000	DBB	15.6	—	16.0	5.63	13.0	1.010	040	BKG			H	GRAY BROWN SILTY
1010	DBS	14.89	—	20	6.02	14.0	.917	-026	BKG			H	"
1015	DBB	15.02	—	22	6.15	14.1	.895	-32	BKG			H	"
	OFER												
	Performance Log Book Data												
	FINAL												

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CWO2

WELL NO.: MW 30
DATE: 1/24/95
LOGGER: J. SACCOMANDI
SIGNATURE: John L. Sc

ONE WELL VOLUME: ~ 6.9 gallons WELL TD: 17.92 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	MPD				
1020	DBB	15.85	—	24	6.05	14.2	.873	-021	BKG			H	GRAY BROWN SILTY
1025	DBB	15.69	—	25	6.09	14.7	.861	-023	BKG			H	"
1030	DBB	15.65	—	26	6.14	15.0	.846	-021	BKG			H	"
1040	DBB	16.70	—	27	6.12	15.1	.837	-019	BKG			H	"
1045	DBE	15.68	—	28	6.12	15.1	.841	-018	BKG			M	"
	FINAL		0.5										

FINAL WELL YIELD: Bailed GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Phototonizer (e.g., Hnu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW-31
CLIENT: USACE | DATE: 01-05-95
PROJECT: 03886-016-037 | LOGGER: K. VALENTI
SITE: CWO2 | SIGNATURE: K. Valenti

ONE WELL VOLUME: ~6.4 gallons | WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 | 6-inch = 1.47 | 4-inch = 0.65 | 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNU				
1150	STATIC	7.00	—	—	—	—	—	—	0.0			—	BEGAN HAND BAILING - 3"-DIA. BAILER
1200	DBB	16.00	BAILED	6	6.32	12.2	.412	-017	0.0			H	
	DBE	16.00											RECHARGE = 2/10 of A FOOT EVERY MINUTE.
1300	DSB	8.70'											
1305	DBB	8.70'										H	BEGINNING TO CLEAR BUT STILL SILTY
1340	DBB	16.35	-	31	5.90	16.2	.395	040	0.0			H	BEGAN SURGING.
1350	DBB												
1355	DBB			32.5	6.04	15.9	.395	013	0.0			N	
1400	DBE	14.30											
1420		11.30	BAILED DRY										POOR RECOVERY
1055	DBB	8.75	—	14	6.08	13.7	.533	-013	BKG			H	GRAY BROWN SILTY
1100	DBB	12.02	—	18	6.16	14.2	.533	-21	BKG			H	"
1105	DBB	14.30	—	19	6.21	14.4	.531	-020	BKG			H	"
1110	DBB	14.12	—	20	6.21	13.9	.518	-018	BKG			H	"
1115	DBB	13.40	—	22	6.21	13.7	.517	-014	BKG			M	"
1120	DBB	13.24	—	24	6.18	13.6	.525	-010	BKG			M	"
1125	DBB	13.16	—	25	6.21	13.8	.507	-008	BKG			M	"
REFERENCE LOG BOOK ON THIS DATE FOR DETAILED NOTES.													
	FINAL												

FINAL WELL YIELD: <0.5 GPM | PUMP RATE - ESTIMATED | CORRESPONDING DRAWDOWN: * FT

DEVELOPMENT ACTIVITY CODES

- DBB - Begin Bailing
- DOB - Begin Overpumping
- DRB - Begin Rawhiding
- DCB - Begin Recirculation
- DHB - Begin Hydraulic Jetting
- DAB - Begin Air Surging
- DSB - Begin Surge Blocking
- DXB - Begin Other
- DBE - End Bailing
- DOE - End Overpumping
- DRE - End Rawhiding
- DCE - End Recirculation
- DHE - End Hydraulic Jetting
- DAE - End Air Surging
- DSE - End Surge Blocking
- DXE - End Other

Specify other method: _____

FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

- MTP - Temperature
- MSC - Specific Conductance
- MPD - Photolonizer (e.g., HNu)
- MFD - Flame Ionizer (e.g., OVA)
- MDO - Dissolved Oxygen
- MPH - pH
- MEH - Eh
- MMC - Imhoff Cone
- MO1 - Other: _____
- MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)

OR

Enter Qualitative Observations

- H - High: Opaque/Muddy/Silty
- M - Medium: Translucent/Cloudy
- L - Low: Transparent/Some Silt
- N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612917

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CW02

WELL NO.: MW31
DATE: 1/24/95
LOGGER: J. SACCOMANDI
SIGNATURE: [signature]

ONE WELL VOLUME: 26.4 gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 6-inch = 1.
4-inch = 0.65 8-inch = 2.

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	MPD				
1130	DBB	13.20	—	26	6.11	13.2	.505	000	BKG			M	BROWN GRAY SILTY
1135	DBB	13.79	—	27	6.13	13.4	.513	-001	BKG			L	LT GRAY BROWN CLOUDY
1140	DBE	13.60	—	28	6.15	13.8	.511	-003	BKG			L	"
	FINAL												

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ F

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observation

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Clou
L - Low: Transparent/Some Sit
N - None: Clear/No Visible Sit

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G08121

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-031
SITE: Cuuz

WELL NO.: MW 32
DATE: 04-05-95
LOGGER: K. Valente
SIGNATURE: K. Valente

ONE WELL VOLUME: ~~7.45~~ ~5.5 gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1155	STATIC	7.45	–	–	–	–	–	–	–				3" DIA BAILER USED TO BAIL
1200	DBB	7.45	–	2.0	6.31	15.1	.521	002	0.0			H	DK. GRAY SILTY WATER
1205	DBE		RECHARGE		~	2/10	of A	foot	PER	MINUTE			
1300	DSB	8.00											
1310	DBB	8.00											
1345	DBE	16.45	–	27.0	5.91	15.2	.499	038	0.0			H	WATER CLEARING BUT STILL HEAVY SILT
1350	DSB												
1355	DBB												
1400	DBE	16.30		28.0	5.92	16.6	.492	020	0.0			H	WATER STILL SILTY
1425	DBE	13.25											POOR RECOVERY
	THIS WELL SHOULD BE FURTHER BAILED / DEVELOPED												
1220	DBB	7.15	–	BAILED DRY									
1225	DBB	14.12	–	10	5.09	13.8	.647	160	BKG			H	GRAY BROWN SILTY
1230	DBB	13.83	–	11	5.56	14.3	.667	051	BKG			H	"
1235	DBB	13.76	–	13	6.03	14.6	.645	014	BKG			H	"
1240	DBB	14.39	–	14	6.13	14.7	.657	-003	BKG			H	"
1245	DBB	14.67	–	15	6.17	14.8	.652	-009	BKG			H	"
1250	DBB	14.25	–	16	6.20	15.2	.651	-012	BKG			H	"
				OVER									
	FINAL												

FINAL WELL YIELD: <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: X DG/FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-037
SITE: CV02

WELL NO.: MW32
DATE: 1/24/95
LOGGER: J. SACCOMANDI
SIGNATURE:

ONE WELL VOLUME: 25.5 gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1, 8-inch = 2

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	MPD				
1255	DBB	14.30	—	17	6.22	14.0	.659	-008	BKG			H	GRAY BROWN SILTY
1300	DBE	14.24	—	19	6.17	14.3	.647	-005	BKG			H	GRAY BROWN SILTY
	FINAL												

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Read
(Final should be < 5 NTU
OR
Enter Qualitative Observati
H - High: Opaque/Muddy/S
M - Medium: Translucent/Cl
L - Low: Transparent/Some
N - None: Clear/No Visible

COPYRIGHT © 1991 by Roy F. Weston, Inc.

GOE

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW-33
CLIENT: USAEE | DATE: 01-05-95
PROJECT: 03886.076037 | LOGGER: V. VALENTE
SITE: COVLO | SIGNATURE: V. Valente

ONE WELL VOLUME: ~5.0 gallons | WELL TD: 16.07 ft TOC | Well Volume (gallons/foot) 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
1335	STATIC	8.53	-	-	-	-	-	-	0.0				
1405	DSB	8.53											SWAB-SURGE
1410	DBB	8.53	-	-	-	-	-	-	-			H	HAND BAILED-3" O.D.
1420	DBE	15.00	-	13.0									
1425	DBB	DRY	-	16.0								H	
1430	DSB	-	-										SWAB SURGE
1435	DBE	DRY	-	18.0								H	
1440	DBB	DRY		19.0	6.14	15.7	.557	-021	0.0			H	WATER BEGINNING TO CLEAR
1530	DBB			22.0	6.04	14.0	.460	010	0.0			H	STARTING TO CLEAR BUT STILL SILTY
1550	DBE	DRY											
1600	DBB			25.0	6.23	14.8	.478	-021	0.0			M	
1625	DBB			27.5	6.10	14.0	.468	-014	0.0			L	
1630	DBE		BAILED	DRY									WATER CLEARED. CAST BAILER A LITTLE SILTY.
1305	DBB	8.69		9	6.15	14.5	.941	-002	BKG			H	GRAY BROWN SILTY
1310	DBB	10.85		12	6.19	14.1	.863	-013	BKG			H	" CLEARING
1315	DBB	12.41		14	6.18	14.5	861	-012	BKG			H	"
1320	DBB	11.42		17	6.21	13.8	821	-012	BKG			M	"
		OVER											
REFERENCE LOG BOOK.													
	FINAL												

FINAL WELL YIELD: ~0.5 GPM | PUMP RATE - (ESTIMATED) | CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rewhirling
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rewhirling
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations

H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03896-076-037
SITE: CWDL
WELL NO.: MW33
DATE: 1/24/95
LOGGER: J. STECCO MAN.
SIGNATURE:

ONE WELL VOLUME: ~5.0 gallons WELL TD: 16.07 ft TOC Well Volume (gallons/foot) 2-inch = 0.16 4-inch = 0.65 6-inch = 1. 8-inch = 2.

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1325	DBB	11.77	—	20	6.22	14.4	.776	-008	BKG			M	BROWN GRAY VERY CLOUDY
1330	DBB	12.21	—	22	6.25	14.5	.728	-011	BKG			M	" CLEARI
1335	DBB	10.74	—	27	6.25	13.9	.691	-003	BKG			M	BROWN GRAY CLOUDY
1340	DBB	15.18	—	29	6.19	15.1	.740	-003	BKG			M	"
1345	DBB	12.42	—	31	6.21	14.7	.696	-005	BKG			L	"
1350	DBE	12.34	—	33	6.43	14.3	.681	-008	BKG			L	LT BROWN GRAY SLIGHTLY CLO
	FINAL												

FINAL WELL YIELD: LO-5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY F

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Clou
L - Low: Transparent/Some Sit
N - None: Clear/No Visible Sit

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G06121

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW34
CLIENT: USACE | DATE: 01-06-95
PROJECT: 63586 676-637 | LOGGER: V. VALENTE
SITE: CMO6 - MW34 | SIGNATURE: V. V

ONE WELL VOLUME: ~7.8 gallons WELL TD: 16.85 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 | 4-inch = 0.65 | 6-inch = 1.47 | 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS pH	Temp	Cond.	MV	HNu			TURBIDITY	COMMENTS
1035	STATIC	4.82	-	-	-	-	-	-	0.0	-	-		4" WELL MEASUREMENTS FROM TOP OF PVC
1040	DSB	4.82	-	-	-	-	-	-	-	-	-		BEGAN SURGING
1055	DBB	4.82	BAILED	5.0	4.72	11.5	.154	221	0.0				HEAVY SILT, GREENISH BROWN SILTY WATER
1155	↓	7.50	BAILED	45.0	5.10	11.9	.143	177	0.0				WATER STILL GREENISH BROWN
1215	↓	6.96	Bailed	60.0	5.17	11.7	.143	186	0.0				WATER STILL GREENISH-BROWN
1322	DOB	8.78	3gpm		5.45	12.7	.130	163	0.0			N	
1340	DOB	9.50	3gpm		5.43	12.5	.133	154	0.0			N	
1355	DOB	9.60	3gpm		5.36	13.0	.132	157	0.0			N	
1415	DOB	9.60	3gpm		5.35	13.6	.133	162	0.0			N	
1430	DOB	9.45	3gpm		5.31	13.6	.133	166	0.0			N	
1435	DOE												
	FINAL												

FINAL WELL YIELD: ~3 GPM PUMP RATE (ESTIMATED) CORRESPONDING DRAWDOWN: 5 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612917

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: C3886-076-037
SITE: Area 7
WELL NO.: MW 35
DATE: 01-06-95
LOGGER: K. Whitmire
SIGNATURE: K. Whitmire

ONE WELL VOLUME: _____ gallons WELL TD: 16.80 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 6-inch = 1.47 4-inch = 0.65 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1235	DSB	4.97											
1245	DSE												
1245	DBB												
1300	DBB	7.49		22gal	5.18	8.7	.158	.196				H	DK Greenish brown color
1330	DBB			100	5.20	10.0	.161	.210				M	" "
1330	DBE												
1400	DBB	5.01										H	Greenish brown
1410	DBB			115								H	" "
1430	DSE			160								M	
1435	DOB	5.05	3gal		5.18	11.20	150	.222	0			M	Lt greenish brown
1455	DOB	6.26	4gal		5.38	10.80	148	.219	0			M	" " "
1505	DOB	10.4	5.5gal		5.44	11.80	146	.216	0			M	" " " 8.5 DTW
1515	DOB	8.00	4gal		5.40	12.70	145	.218	0			L	
1530	DOB	9.16	5.0		5.14	11.0	.140	252	0			N	
1535	DOB	9.04	5.0		5.10	12.50	.140	268	0			N	Clear
1545	DOB	9.05	5.0		4.93	12.70	.141	264	0			N	
1550	DOB	9.04	5.0		4.88	12.9	.141	274	0			N	
1550	DDE												
	FINAL												

FINAL WELL YIELD: 4.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 4 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MPD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: Roy F. Weston | WELL NO.: MW-36
CLIENT: EPA | DATE: 1-6-95
PROJECT: Fitzsimmons | LOGGER: Steele
SITE: CW9 | SIGNATURE:

ONE WELL VOLUME: _____ gallons | WELL TD: 16.69 ft TOC | Well Volume (gallons/foot) 2-inch = 0.16 | 4-inch = 0.65 | 6-inch = 1.47 | 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MSC	MTP	MPD	MEH				
1035	DBB	6.43	Bail										
1045	DSE												
1045	DBB		Bailing									H	Recharging quickly
1055	DBE											H	
1055	DSB												
1056	DSE												
1056	DBB		Bailed	30gal								H	
1059	DBE			+5gal								H	
1059	DSB												
1102	DSE	6.30			5.7	.189	10.4	0	175			M	
1140	DOB	10.2	4gal		5.8	.147	13.0	0	161			L	
1155	DOB	9.84	4gal		5.8	.141	11.9	0	168			N	
1215	DOB	9.86	4gal		5.9	.142	10.6	0	171			N	Clear-
1220	DCE												Pump shut down on gas
	FINAL												

FINAL WELL YIELD: 3-4 GPM | PUMP RATE (ESTIMATED) | CORRESPONDING DRAWDOWN: 3.5 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0812917

GEOLIS Well Development Form

COMPANY: Weston
CLIENT: USACE
PROJECT: Ft. Monmouth
SITE: B-1

WELL NO.: MW-01B
DATE: 1/19/95
LOGGER: R. Thomas
SIGNATURE: Thomas

ONE WELL VOLUME: _____ gallons WELL TD: 16.30 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS: ATC MPH	mv/cm MSC	mv MEH	°C MTP	MPD	MCL		TURBIDITY	COMMENTS
0845	DSB	4.35											
0905	DBB												
0920	DOB		1gpm										Pumped well Dry - All Recover
0935	DOE												
0942	DOB	4.9	1gpm		4.36	.187	299	9	BKG	orange brown		>200	
1000		7.65	1gpm		4.45	.180	308	12.9	BKG	clear		>200	Cloudy
1015		7.65	1gpm		5.10	.177	275	13.5	BKG	Clear			Clear
1020		8.61	1.5gpm		5.28	.179	267	13.1	BKG	Clear			Clear
1025		7.62	1.5gpm		5.21	.179	269	14.0	BKG	Clear			Clear
1030		7.62	1.5gpm		5.32	.170	266	14.1	BKG	Clear			Clear
1035		7.61	1.5gpm		4.96	.180	284	14.5	BKG	Clear			Clear
1040	DOE	7.61	1.5gpm		5.35	.179	270	13.6	BKG	Clear			CLEAR
	FINAL												

FINAL WELL YIELD: 1.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW02B
CLIENT: USACE | DATE: 1/19/95
PROJECT: 03886-076-038 | LOGGER: J. SACCOMANDI
SITE: B2 | SIGNATURE:

ONE WELL VOLUME: _____ gallons | WELL TD: 22.0 ft TOC | Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNV				
1105	DSB	12.7											
1125	DBB												
1135	DOB	12.90	1.5		5.89	15.2	.424	080	BKG				TURBID
1150		12.95	1.5		6.16	15.9	.422	014	BKG				TURBID
1205		13.26	2.0		6.30	15.0	.413	016	BKG				TURBID
1220		13.15	2.0		6.33	16.0	.428	000	BKG				TURBID
1240		12.20	2.0		6.37	15.9	.412	011	BKG				TURBID
1255		13.05	2.0		6.45	15.4	.424	-011	BKG				VERY CLOUDY
1305		13.05	2.0		6.57	14.5	.447	-023	BKG				VERY CLOUDY
1315		13.45	2.5		6.39	15.2	.422	-026	BKG				VERY CLOUDY
1325		13.45	2.5		6.49	15.3	.419	-025	BKG				CLOUDY / SLIGHT SEPTIC ODOR
1340		13.47	2.5		6.44	14.9	.423	-029	BKG				"
1350		13.51	2.5		6.42	14.7	.422	-030	BKG				SLIGHTLY CLOUDY
1400	DOE	13.53	2.5		6.37	15.4	.416	-030	BKG				CLEAR
3 TIMES I PUMPED WELL DOWN TO 16 FT BY INCREASING FLOW RATE TO 12 GPM THEN CUT BACK TO 2 GPM TO ALLOW WELL TO RECHARGE.													
	FINAL												

FINAL WELL YIELD: 2 GPM | PUMP RATE - ESTIMATED | CORRESPONDING DRAWDOWN: 2 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G0612291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-[illegible]-038
SITE: B3

WELL NO.: MW03B
DATE: 1-19-95
LOGGER: [illegible]
SIGNATURE: [illegible]

ONE WELL VOLUME: ~11.1 gallons WELL TD: 28.55 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MV	HNU				
1215	STATIC	11.50	-	-	-	-	-	-	-				
1220	DSB												
1235	DSE/DBB		Bailed	14.0					0.0			H	GREENISH-DK. GRAY SILTY WATER
1245	DBE	27.91											LET RECHARGE
1248	-	23.00											
1254	-	22.00											
1315	DBB/DSB	21.11	Bailed	15.0	4.84	13.3	.388	204	0.0			H	GREEN TO DK. GRAY SILTY WATER
1335	DSB	27.14	-	24.0	5.28	13.7	.420	155	0.0			H	" " "
1350	DBB	25.12	-	27.0	5.35	13.3	.416	137	0.0			H	
1355	DBE	27.94	-	27.0		—						H	LET RECHARGE
1510	DSB	25.40											
1535	DBB	27.98	Bailed	28.0	5.75	13.2	.448	059	0.0			H	VERY SLOW RECHARGE
	DBE												
	FINAL												

CONTINUED ON NEXT PAGE →

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: C3886-076-038
SITE: B3

WELL NO.: MW03B
DATE: 1-24-95
LOGGER: EVALUATE
SIGNATURE:

ONE WELL VOLUME ~ 11.1 gallons WELL TD: 28.55 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	OVM				
1500	DSB STATIC	11.05											
1510	DSE/DBB	11.05	Started	1.0	5.39	12.2	.432	226	0.0			H	DK. GREEN TO GRAY.
1512	DBB	-	Started	3.0	5.51	12.6	.447	224	0.0			H	
1515	DBB	-	Started	5.0	5.51	12.7	.444	220	0.0			H	
1517	DBB	-	Started	7.0	5.59	12.8	.446	214	0.0			H	
1520	DBB	-	Started	10.0	5.38	13.1	.441	238	0.0			H	
1525	DBB	-	Started	14.0	5.16	13.5	.418	255	0.0			H	
1530	DBE	DRY	Started	15.5	5.04	13.4	.422	256	0.0			H	VERY SLOW RECHARGE
	FINAL												

FINAL WELL YIELD: LO.5 (GPM) PUMP RATE - (ESTIMATED) CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03858-076-038
SITE: B4
WELL NO.: MW04B
DATE: 1-19-95
LOGGER: K. VALENTE
SIGNATURE:

ONE WELL VOLUME: ~6.8 gallons WELL TD: 17.10 ft TOC
Well Volume (gallons/foot) 2-inch = 0.16 4-inch = 0.65 6-inch = 1.47 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
0900	STATIC	6.71	-	-	-	-	-	-	-				
0910	DSB												
0920	DSE/DSB	6.71	BAILED									H	GREENISH SILTY WATER.
0927	DSE	Dry	-	~12.0									WELL WENT DRY.
0929	-	13.10											LET RECHARGE
0930	-	11.40											
0935		10.10											SET PUMP DOWN WELL 6" off BOTTOM
0940	DoB	8.00	~0.5	13.0	4.09	8.2	.271	316	0.0			H	GREENISH SILTY WATER
0950	DoB	14.31	~0.5	~20.0	3.85	11.7	.285	335	0.0			H	LOWERED FLOW RATE
1000	DoB	10.80	<0.5	22.5	4.11	12.2	.285	339	0.0			H	W.L. coming BACK UP.
1010	DoB	9.14	<0.5	25.0	3.91	13.1	.282	359	0.0			H	CLEARING BUT STILL SILTY
1020	DoB	8.80	<0.5	27.5	4.35	13.2	.287	331	0.0			M	INCREASED FLOW RATE. WATER BEGINNING TO CLEAR
1030	DoB	9.32	~0.5	33.0	3.80	14.5	.285	363	0.0			M	
1035	DoB	9.91	~0.5	~35.5	4.00	14.3	.280	359	0.0			M	
1040	DoB	10.40	~0.5	38.0	4.35	13.0	.270	335	0.0			M	
1045	DoB	10.08	~0.5	~40.5	4.39	12.0	.276	337	0.0			M	
1050	DoB	11.50	~0.5	43.0	4.27	13.7	.296	351	0.0			M	
1055	DoB	11.91	~0.5	45.5	4.17	13.3	.288	353	0.0			M	
					CONTINUED ON FOLLOWING PAGE →								
	FINAL												

FINAL WELL YIELD: _____ GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: _____ FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03882-076-038
SITE: FBH

WELL NO.: MW04B
DATE: 1-19-95
LOGGER: K. VALENTE
SIGNATURE: K. V

ONE WELL VOLUME: 6.71 gallons WELL TD: 17.10 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MV	HNU			TURBIDITY	COMMENTS
CONTINUED FROM PREVIOUS PAGE													
1100	DUB	9.17	~0.5	48.0	4.24	13.1	.301	354	0.0			M	Pump Dry / Let Recharge
1110	DOB	8.89	~0.5	53.0	4.11	12.6	.297	371	0.0			M	Pump Dry
1111	DOE	DRY											Let Recharge
1120	DUB	9.04	~0.5	61.0	4.05	12.7	.268	366	0.0			M	Pump Dry
1121	DOE	DRY											
	DOE												
	FINAL												

FINAL WELL YIELD: ~0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: ~DRY~ FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MPD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G06126

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03886-076-038
SITE: B5

WELL NO.: MW05B
DATE: 1/19/95
LOGGER: J. SACCOMANDI
SIGNATURE: [signature]

ONE WELL VOLUME: _____ gallons WELL TD: 17.31 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MEH	MSC	MPD	MCL	MTP		TURBIDITY	COMMENTS
1425	DSB	5.01											
1430	DBB	"	BAILED DRY								TURBID		8 GAL
1500	DBB	12.00	BAILED DRY								TURBID		3 GAL
1530	DBB	14.00			4.83	214	.291	BKG	TURBID	11.9			3 GAL
1535	DBB	15.30			5.11	196	.292	BKG	TURBID	12.3	TURBID		1.5 GAL
1540	DBB	15.85			5.18	193	.294	BKG	TURBID	12.5			1 GAL
1545	DBB	16.40			5.20	190	.296	BKG	TURBID	12.7			1 GAL
1550	DBB	16.65			5.23	189	.303	BKG	TURBID	12.6			1 GAL
1555	DBB	16.71			5.26	183	.310	BKG	TURBID	12.5			1 GAL
1600	DBB	16.80			5.26	183	.310	BKG	TURBID	12.7			½ GAL
1605	DBB	16.74			5.34	178	.310	BKG	TURBID	12.5			½ GAL
1610	DBB	16.80			5.41	175	.303	BKG	TURBID	12.4			½ GAL
1615	DBB	17.0			5.36	176	.307	BKG	LIGHT TURBID	12.4			½ GAL
~~1620~~	~~DBB~~	DNS											
	FINAL												

FINAL WELL YIELD: Bailed - <0.5 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW06B
CLIENT: VACE | DATE: 1/24/95
PROJECT: 03956-037 | LOGGER: J. SACCOMANDI
SITE: B-6 | SIGNATURE:

ONE WELL VOLUME: ~7 gallons | WELL TD: 16.66 ft TOC | Well Volume (gallons/foot) 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
1605	BSB	4.64	—	—					BKG				
1610	DBB	N/R	—	9								H	GRAY GREEN VERY SILTY
1615	DBE	8.47	—	9								H	"
1620	DOB	8.47	0.5	9	5.25	5.1	.160	274	BKG			H	"
1625	DOB	8.57	0.5	11.5	5.02	6.2	.194	272	BKG			H	"
1630	DOB	9.18	0.5	13	7.88	7.0	.204	257	BKG			H	"
1635	DOB	9.21	~0.5	15.5	4.86	8.5	.204	249	BKG			H	"
1640	DOB	9.26	~0.5	17.0	5.00	10.3	.203	245	BKG			H	"
1645	DOB	9.30	~0.5	19.5	5.00	11.7	.201	244	BKG			H	" CLEARING
1650	DOB	9.33	~0.5	21.0	5.08	12.6	.197	229	BKG			H	" "
1655	DOB	9.36	~0.5	23.5	5.13	13.0	.197	223	BKG			M	DK BROWN CLOUDY
1700	DOB	9.39	~0.5	25.0	5.15	13.7	.196	221	BKG			M	BROWN CLOUDY
1705	DOB	9.42	~0.5	27.5	5.26	14.4	.192	218	BKG			L	CLOUDY
1710	DOB	9.48	~0.5	30.0	5.20	14.4	.194	217	BKG			L	SLIGHTLY CLOUDY
1715	DOB	9.53	~0.5	32.5	5.17	14.6	.192	217	BKG			N	CLEAR
1720	DOB	9.61	~0.5	35.0	5.22	14.7	.194	216	BKG			N	CLEAR
1730	DOE	10.29	~0.5	37.5	5.28	14.5	.197	216	BKG			N	CLEAR
	13.40	15' DEPTH TO TOP OF PUMP/PUMA IS .5'										OFF	BOTTOM
	FINAL												

FINAL WELL YIELD: ~0.5 GPM | PUMP RATE - (ESTIMATED) | CORRESPONDING DRAWDOWN: 6 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DKB - Begin Other
DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method:
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW | WELL NO.: MW07B
CLIENT: USACE | DATE: 1/24/95
PROJECT: 03886-076-037 | LOGGER: J. SACCOMANDI
SITE: B-7 | SIGNATURE: [signature]

ONE WELL VOLUME: _____ gallons WELL TD: 16.90 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16 | 4-inch = 0.65 | 6-inch = 1.47 | 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	MPD				
1400	DSB	9.01	—	—									
1410	DGB	N/R	—	17								H	BROWN SILTY
1415	DOB	N/R	1	22	4.54	11.7	.380	269	BKG			H	"
1420	DOB	12.81	2	32	4.69	12.3	.396	262	BKG			M	"
1420-1430	PUT		GAS IN		GENERATOR								
1430	DOB	10.41	30	32	4.86	12.2	.372	271	BKG			H	"
1435	DOB	13.07	2	42	4.89	12.5	.403	273	BKG			L	SLIGHTLY CLOUDY
1440	DOB	11.95	2	52	4.91	12.3	.420	277	BKG			N	CLEAR
1445	DOB	11.99	2	62	4.93	12.5	.426	279	BKG			N	CLEAR
1450	DOB	11.99	2	72	4.91	12.7	.420	284	BKG			N	CLEAR
1455	DOB	12.801	2	82	4.89	12.8	.428	285	BKG			N	CLEAR
1500	DOB	12.03	2	92	4.89	12.8	.427	290	BKG			N	CLEAR
1505	DOB	12.05	2	102	4.88	13.0	.426	290	BKG			N	CLEAR
1510	DOB	12.07	2	112	4.87	12.9	.429	298	BKG			N	CLEAR
1515	DOB	12.09	2	122	4.86	12.8	.431	301	BKG			N	CLEAR
1517	DOE	N/R	—	—									
	FINAL												

FINAL WELL YIELD: ~2 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 3 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
DMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03816-076-037
SITE: B-8

WELL NO.: MW08B
DATE: 1-24-95
LOGGER: K. Valentz
SIGNATURE: [signature]

ONE WELL VOLUME: 8.0 gallons WELL TD: 17.10 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	OVM			TURBIDITY	COMMENTS
0945	STATIC	4.82							0.0				
0950	DSB	4.82											
0955	DSE/DBB	4.82							←	0.0		H	Yellow-Brown Silty Water
1000	DBE	7.30	Bailed	15.0					←	0.0		H	Well Recharges Decent
1005	DOB	4.74	1.0	16.0	4.26	9.70	.148	267	←	0.0		H	Pump 6" off Bottom of Well
1010	DOB	5.45	1.0	20.0	4.27	9.60	.140	278	←	0.0		H	Surge Pump
1015	DOB	5.69	1.0	25.0	4.34	9.90	.159	274	←	0.0		H	Surged Pump
1020	DOB	5.55	1.0	30.0	4.23	13.8	.133	336	←	0.0		H	Increased Flow to 1.5 GPM
1030	DOB	6.20	1.5	45.0	4.57	12.4	.137	334	0.0			H	
1040	DOB	6.13	1.5	60.0	4.69	13.0	.135	336	0.0			H	Beginning to clear But still silty
1045	DOB	6.71	2.0	70.0	4.84	12.7	.133	338	0.0			M	Flow to 2 GPM
1055	DOB	6.72	2.0	90.0	4.87	12.9	.134	338	0.0			M	Flow to 2.5 GPM
1100	DOB	7.09	2.5	~403.0	4.98	12.2	.131	335	0.0			M	Flow to 3.0 GPM Surge Pump.
1110	DOB	8.21	3.0	~133.0	4.98	11.4	.130	337	0.0			M	Flow to 3.5 GPM
1115	DOB	8.70	3.5	~151.0	4.94	10.7	.132	347	0.0			M	
1120	DOB	8.70	3.5	~169.0	4.96	11.6	.127	349	0.0			N	Flow to 4 GPM Cleared up.
1125	DOB	9.68	4.0	189.0	4.96	11.5	.128	350	0.0			N	
1130	DOE	9.70	4.0	209.0	4.95	11.6	.128	351	0.0			N	
	FINAL												

FINAL WELL YIELD: 1-4 GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: 5 FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 03866-076-037
SITE: R-9

WELL NO.: MW07B
DATE: 1-25-95
LOGGER: B. Thomas
SIGNATURE: [signature]

ONE WELL VOLUME: 5 gallons WELL TD: 13.34 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS MPH	MTP	MSC	MEH	MPD			TURBIDITY	COMMENTS
0921	DSB	6.38										H	12.13 ~~13.34~~
0930	DSE		1.4	3 Gallon								H	-6.38
0930	DBB	8.90			4.15	8.6	.171	293	BKL			-	6.96
0950	DOB	8.12										-	6.96
1000	DBB	BE	BAIL	5 Gallon	4.10	8.6	.083	278	BKL			-	7.65
1030	DBB	9.58		[illegible]	4.75	10.4	.161	240	BKL			-	3480
1040	DBB	12.95	BAIL	[illegible]	4.91	11.2	.152	221	BKL			-	4176
1042	DBE											-	4.5240
1045	DSB	11.54										-	w/pump DTW - 8.12
1055	DSE											-	DT Top of pump 11.25
1100	DCB	10.22	BAIL	18 Gal	4.84	10.1	.126	270	BKL			H	
1110	DBB	9.50	BAIL	[illegible]	4.77	10.2	.132	232	BKL			H	
1115	DBB	[illegible]	BAIL	[illegible]	4.78	10.5	.134	232	BKL			H	
1120	DBB	11.68	BAIL	29 Gal	4.78	[illegible]	.122	270	BKL			H	
1130	DBB	11.52	BAIL	34 Gal	4.83	10.1	.171	274	BKL			H	[illegible]
1140	DBB	12.53	BAIL	[illegible]	4.89	10.1	[illegible]	22[illegible]	BKL			H	[illegible]
1151	DBB	[illegible]	BAIL	[illegible]	4.85	[illegible]	.171	22[illegible]	BKL			H	[illegible]
1200	DBE	10.6	BAIL	[illegible]	4.85	[illegible]	.171	221	BKL			-	[illegible]
		END DEVELOPMENT											[illegible]
	FINAL	READING			[illegible]		STABILIZED						

FINAL WELL YIELD: LOG GPM PUMP RATE - ESTIMATED CORRESPONDING DRAWDOWN: DRY FT

DEVELOPMENT ACTIVITY CODES

DBB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method:
FMT - Field Measurements (select from codes at right)

DBE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photoionizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other:
MO2 - Other:

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

GEOLIS Well Development Form

COMPANY: RFW
CLIENT: USACE
PROJECT: 07856-076-030
SITE: B-10
WELL NO.: MW10B
DATE: 1-24-95
LOGGER: K. VALENTI
SIGNATURE: K. Valenti

ONE WELL VOLUME: ~8.0 gallons WELL TD: 16.45 ft TOC

Well Volume (gallons/foot): 2-inch = 0.16, 4-inch = 0.65, 6-inch = 1.47, 8-inch = 2.61

TIME	ACTIVITY CODE	DEPTH TO WATER (ft)	PURGE RATE (gpm)	PURGE VOLUME (gal)	FIELD MEASUREMENTS							TURBIDITY	COMMENTS
					MPH	MTP	MSC	MEH	OVM				
1215	STATIC	4.36											
1215	DSB	4.36											
1225	DSE/DSB	4.36											
1230	DSE	15.85	BAILED	12.0		(3.4)			0.0			H	DK. GRAY SILTY WATER
1240	DOB	5.55	0.5	13.0	5.01	9.9	.128	351	0.0			H	
1245	DOB	6.49	0.5	~14.5	4.94	8.1	.130	350	0.0			H	CLEANED UP SOME.
1255	DOB	6.50	0.5	17.0	5.00	10.0	.150	314	0.0			H	SILTY AGAIN W/ SURGED PUMP
1300	DOB	6.64	0.5	~19.5	5.03	10.4	.155	307	0.0			H	
1305	DOB	6.87	0.5	~22.0	5.12	11.9	.151	295	0.0			H	SURGED PUMP.
1315	DOB	7.62	0.5	~27.0	5.21	10.6	.158	286	0.0			H	
1320	DOB	8.22	0.5	~29.5	5.32	11.0	.161	284	0.0			H	
1330	DOB	9.14	0.5	~35.0	5.29	11.6	.159	279	0.0			H	SURGED PUMP. CLEARED A LITTLE.
1340	DOB	9.21	0.5	~40.0	5.26	12.8	.150	278	0.0			M	
1350	DOB	9.40	0.5	~45.0	5.17	12.9	.150	275	0.0			L	CLEAR BUT SLIGHTLY CLOUDY
1355	DOB	9.39	0.5	~47.5	5.46	13.0	.152	257	0.0			L	
1400	DOB	9.39	0.5	~50.0	5.41	13.0	.152	263	0.0			L	
1405	DOB	9.34	0.5	~52.5	5.57	11.9	.155	250	0.0			N	CLEAR
1410	DOE	9.53	0.5	~55.0	5.59	12.4	.153	255	0.0			N	CLEAR
	FINAL												

FINAL WELL YIELD: 0.5 GPM PUMP RATE (ESTIMATED) CORRESPONDING DRAWDOWN: 5 FT

DEVELOPMENT ACTIVITY CODES

DSB - Begin Bailing
DOB - Begin Overpumping
DRB - Begin Rawhiding
DCB - Begin Recirculation
DHB - Begin Hydraulic Jetting
DAB - Begin Air Surging
DSB - Begin Surge Blocking
DXB - Begin Other
Specify other method: _____
FMT - Field Measurements (select from codes at right)

DSE - End Bailing
DOE - End Overpumping
DRE - End Rawhiding
DCE - End Recirculation
DHE - End Hydraulic Jetting
DAE - End Air Surging
DSE - End Surge Blocking
DXE - End Other

FIELD MEASUREMENT CODES

MTP - Temperature
MSC - Specific Conductance
MPD - Photolonizer (e.g., HNu)
MFD - Flame Ionizer (e.g., OVA)
MDO - Dissolved Oxygen
MPH - pH
MEH - Eh
MMC - Imhoff Cone
MO1 - Other: _____
MO2 - Other: _____

TURBIDITY

Enter Turbidity Meter Reading (Final should be < 5 NTU)
OR
Enter Qualitative Observations
H - High: Opaque/Muddy/Silty
M - Medium: Translucent/Cloudy
L - Low: Transparent/Some Silt
N - None: Clear/No Visible Silt

COPYRIGHT © 1991 by Roy F. Weston, Inc.

G061291T

C-1
Groundwater Elevation Summary
Main Post
March, 1995

Well ID	Total Dept (ft)	Depth to Water (TOIC)	(TOIC) Elevation (ft, MSL	Water Level Elevation (ft, MSL)
Site- M2				
MW-01	24.60	7.54	21.04	13.50
MW-02	19.64	10.43	15.50	5.07
MW-03	17.28	8.15	12.63	4.48
Site- M3				
MW-04	25.43	12.06	19.02	6.96
MW-05	18.50	8.40	13.30	4.90
MW-06	17.50	8.23	12.42	4.19
Site- M4				
MW-07	17.97	7.81	16.75	8.94
MW-08	20.30	6.84	10.68	3.84
MW-09	24.63	5.93	9.69	3.76
Site- M5				
MW-10	17.62	4.15	6.91	2.76
MW-11	17.12	7.04	11.70	4.66
Site- M8				
MW-12	17.67	9.26	15.20	5.94
MW-13	17.20	5.68	7.80	2.12
MW-14	17.23	7.78	14.91	7.13
MW-15	17.01	4.52	7.01	2.49
Site- M12				
MW-16	17.14	3.64	8.35	4.71
MW-17	17.21	4.42	7.87	3.45
MW-18	17.10	3.59	6.62	3.03
Site- M14				
MW-19	17.96	7.95	9.68	1.73
MW-20	17.25	6.78	9.29	2.51
MW-21	19.68	6.68	9.57	2.89
Site- M16				
MW-22	17.02	2.75	7.25	4.50
Site- M18				
MW-24	17.25	3.52	8.16	4.64
MW-25	17.06	4.62	8.28	3.66
Background Locations				
MW-01B	16.35	4.13	24.59	20.46
MW-02B	22.30	12.49	20.23	7.74
MW-03B	28.87	11.88	21.09	9.21
MW-04B	17.45	6.57	12.08	5.51
MW-05B	17.62	5.11	15.40	10.29

(TOIC) - Top of inner casing
MSL - Mean Sea Level

C-2
Groundwater Elevation Summary
Charles Wood
March, 1995

Well ID	Total Depth (ft)	Depth to Water (TOIC)	(TOIC) Elevation (ft, MSL)	Water Level Elevation (ft, MSL)
Site- CW-1				
MW-26	17.18	9.08	62.46	53.38
MW-27	17.19	9.11	62.56	53.45
MW-28	17.19	9.60	62.89	53.29
MW-29	17.17	9.32	62.44	53.12
Site- CW-2				
MW-30	18.22	6.90	51.71	44.81
MW-31	17.20	6.75	51.58	44.83
MW-32	17.17	7.04	51.38	44.34
MW-33	16.36	8.64	51.09	42.45
Site- CW-6				
MW-34	17.19	4.05	33.76	29.71
Site- CW-9				
MW-35	17.17	4.37	31.43	27.06
MW-36	16.96	5.97	33.21	27.24
Background Locations				
MW-06B	16.94	4.67	37.37	32.70
MW-07B	17.21	9.21	66.31	57.10
MW-08B	17.37	4.79	48.90	44.11
MW-09B	14.18	6.63	45.31	38.68
MW-10B	16.75	4.60	53.14	48.54

(TOIC) - Top of Inner Casing
MSL - Mean Sea Level

APPENDIX D

SAMPLING RESULTS

ORGANIC GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Organic Data Qualifiers

A	TIC is a suspected aldol-condensation product
B	Compound was found in the blank and the sample
C	Pesticide identification was confirmed by GC/MS
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" and "quant reports" to indicate an interference, or it appears on pesticide Form 8 to indicate an instrument blank without a surrogate
J	Result is an estimated value below the reporting limit or a tenatively identified compound (TIC)
NQ	Result was qualitatively confirmed, but not quantified
P	The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported
SP	Blank Spike, Blank Spike Duplicate, Matrix Spike or Matrix Spike Duplicate
T	Compound was found in the TCLP extraction blank and the sample
U	Compound was not detected at or above the reporting limit
X	Other specific flags may be required to properly qualify the result
*	QC result was outside the laboratory control limits

Abbreviations

BS	Blank Spike analysis was conducted on reagent grade water or a matrix free from the analyte(s) of interest
BSD	Blank Spike Duplicate
BRL	Below Reporting Limit
Batch	Identifies a specific extraction, digestion or preparation set (equivalent to Prep Batch)
CD	Calculation Factor used by the laboratory's Information Management System (LIMS)
Contract	Contract Laboratory Identification Code
DF	Dilution Factor
DL	Appears in the sample ID to indicate a secondary dilution
LCS/LC	Denotes Laboratory Control Standard
LAB ID	The full 12 character WESTON Laboratory Identification Number (equivalent to RFW#)
MB	Method Blank or (PB) preparation blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
NR	Not Required
NS	Not Spiked
RE	Appears in the sample ID to indicate a Re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character WESTON Laboratory Identification Number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative Percent Difference of duplicate analyses
RRF	Relative Response Factor
RT	Retention Time/Retention Time Window
WO#	Work Order No. Weston Code used to define a specific clinet, job phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions, and sample moisture content if analyzed on a dry weight basis.

INORGANIC GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Inorganic Data Qualifiers

B	Result is less than the CRDL, but greater than or equal to the instrument detection limit
E	Result is estimated due to interference
M	Analyte concentrations are greater than the CRDL, and the RSD of duplicate injections was greater than 20%
N	Matrix Spike recovery was outside the control limits
S	Result was determined by the Method of Standard Additions (MSA)
T	Analyte was found in the TCLP extraction blank and sample
U	Analyte was not detected at or above the reporting limit
W	Post-digestion spike was outside 85-115% control limits, sample absorbance is less than 50% of spike absorbance
+	MSA correlation coefficient is less than 0.995
*	Duplicate analysis was outside the control limits

Abbreviations

A	Analyzed by flame A.A. direct aspiration
Batch	Identifies a specific extraction, digestion or preparation set (equivalent to Prep Batch)
BS	Blank Spike analysis was conducted on reagent grade water or a matrix free from the analyte(s) of interest
BSD	Blank Spike Duplicate
BRL	Below Reporting Limit
C	Cyanide analyte flag on CLP forms
CCV	Continuing Calibration Verification
CCB	Continuing Calibration Blank
CD	Calculation Factor used by the laboratory's Information Management System (LIMS)
CV	Analyzed by the cold vapor generation method for Mercury
Contract	Contract Laboratory Identification Code
DF	Dilution Factor
F	Analyzed by graphite furnace atomic absorption spectroscopy
ICV	Initial Calibration Verification
ICB	Initial Calibration Blank
LCS/LC	Denotes Laboratory Control Standard
LAB ID	The full 12 character WESTON Laboratory Identification Number (equivalent to RFW#)
MB	Method Blank or (PB) for Preparation Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not Required
NS	Not Spiked
P	Analyzed by inductively coupled argon plasma
REP	Replicate analysis
RFW#	The full 12 character WESTON Laboratory Idenficiation number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative Percent Difference of duplicate analyses
X	Result obtained indirectly through calculation based on results from other analyses
WO#	Work Order No. Weston Code used to define a specific clinet, job phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions, and sample moisture content if analyzed on a dry weight basis.

Revised 12/09/94

MAIN POST

MAIN POST
SEDIMENT VOLATILES

Geographical Location				AOC3		AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-C01		MP08-SD01-D01		MP08-SD01-E01	
Sample Type						Duplicate		Trip Blank		Field Rinsate Blank	
Batch#				9412G921		9412G921		9412G921		9412G921	
Prep#				94GVT028		94GVT028		94GVE348		94GVE348	
RFW#				013		014		016		017	
Sample Depth				0-6"		0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00		1.00	
Matrix				soil		soil		water		water	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/6/94		12/6/94		12/9/94		12/9/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result	
Chloromethane			0.0073	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromomethane			0.0067	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Vinyl Chloride			0.0079	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chloroethane			0.0091	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Methylene Chloride			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Acetone			0.0069	0.1 B	0.018	0.14 B	0.017	0.01 U	0.01	0.01 U	0.01
Carbon Disulfide			0.0044	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethene			0.0049	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethane			0.003	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethene (total)			0.0044	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chloroform			0.0029	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethane			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
2-Butanone			0.0041	0.02	0.018	0.014 J	0.017	0.01 U	0.01	0.01 U	0.01
1,1,1-Trichloroethane			0.0017	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Carbon Tetrachloride			0.0015	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromodichloromethane			0.002	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloropropane			0.0017	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
cis-1,3-Dichloropropene			0.003	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Trichloroethene			0.002	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Dibromochloromethane			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1,2-Trichloroethane			0.0043	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Benzene			0.0033	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
trans-1,3-Dichloropropene			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromoform			0.0031	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
4-Methyl-2-pentanone			0.0055	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
2-Hexanone			0.0039	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Tetrachloroethene			0.004	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1,2,2-Tetrachloroethane			0.0042	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Toluene			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chlorobenzene			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Ethylbenzene			0.0031	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Styrene			0.0038	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Xylene (total)			0.0038	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Method:TCL Volatiles											

MAIN POST
SEDIMENT VOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS01		Background SS02	
Sample				SS01-SD02-A01		SS01-SD01-A01DL		SS01-SD02-A01	
Batch#				9412G922		9412G922		9412G922	
Prep#				94GVT028 & 29		94GVT029		94GVT028 & 29	
RFW#				005		005		005	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/6/94		12/17/94		12/6/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Chloromethane			0.0073	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromomethane			0.0067	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Vinyl Chloride			0.0079	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chloroethane			0.0091	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Methylene Chloride			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Acetone			0.0069	0.47 B	.074 *	0.17 B	0.035	0.47 B	.074 *
Carbon Disulfide			0.0044	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1-Dichloroethene			0.0049	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1-Dichloroethane			0.003	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloroethene (total)			0.0044	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chloroform			0.0029	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloroethane			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
2-Butanone			0.0041	0.1	0.015	0.041	0.035	0.1	0.015
1,1,1-Trichloroethane			0.0017	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Carbon Tetrachloride			0.0015	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromodichloromethane			0.002	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloropropane			0.0017	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
cis-1,3-Dichloropropene			0.003	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Trichloroethene			0.002	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Dibromochloromethane			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1,2-Trichloroethane			0.0043	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Benzene			0.0033	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
trans-1,3-Dichloropropene			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromoform			0.0031	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
4-Methyl-2-pentanone			0.0055	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
2-Hexanone			0.0039	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Tetrachloroethene			0.004	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1,2,2-Tetrachloroethane			0.0042	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Toluene			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chlorobenzene			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Ethylbenzene			0.0031	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Styrene			0.0038	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Xylene (total)			0.0038	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Total Est. Conc. of TIC.				.05 *				.05 *	
Dilution Factor				* = 5.00				* = 5.00	
Method:TCL Volatiles									

MAIN POST
SEDIMENT SEMIVOLATILES

Geographical Location				AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type								Duplicate	
Batch#				9412G921		9412G921		941G9213	
Prep#				94GBO809		94GBO809		94GBO809	
RFW#				013		013RE		014	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Phenol			0.234	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Chloroethyl) ether			0.32	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Chlorophenol			0.241	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,3-Dichlorobenzene			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,4-Dichlorobenzene			0.158	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,2-Dichlorobenzene			0.188	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Methylphenol			0.221	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,2'-oxybis(1-Chloropropane)			0.231	0.58 U	0.58	0.57 U	0.57	0.061 J	0.54
4-Methylphenol			0.426	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
N-Nitroso-di-n-propylamine			0.264	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachloroethane			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Nitrobenzene			0.244	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Isophorone			0.129	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Nitrophenol			0.231	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dimethylphenol			0.158	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Chloroethoxy) methane			0.201	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dichlorophenol			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,2,4-Trichlorobenzene			0.317	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Naphthalene			0.277	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chloroaniline			0.096	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorobutadiene			0.152	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chloro-3-methylphenol			0.102	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Methylnaphthalene			0.287	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorocyclopentadiene			0.119	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4,6-Trichlorophenol			0.185	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4,5-Trichlorophenol			0.155	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
2-Chloronaphthalene			0.271	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Nitroaniline			0.201	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Dimethylphthalate			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Acenaphthylene			0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,6-Dinitrotoluene			0.172	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
3-Nitroaniline			0.172	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Acenaphthene			0.221	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dinitrophenol			0.152	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
4-Nitrophenol			0.248	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4

MAIN POST
SEDIMENT SEMIVOLATILES

Geographical Location				AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type								Duplicate	
Batch#				9412G921		9412G921		941G9213	
Prep#				94GBO809		94GBO809		94GBO809	
RFW#				013		013RE		014	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Dibenzofuran			0.215	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dinitrotoluene			0.191	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Diethylphthalate			0.178	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chlorophenyl-phenylether			0.231	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Fluorene			0.208	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Nitroaniline			0.211	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
4,6-Dinitro-2-methylphenol			0.175	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
N-Nitrosodiphenylamine (1)			0.139	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Bromophenyl-phenylether			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorobenzene			0.182	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Pentachlorophenol			0.132	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Phenanthrene	0.225	0.74	0.165	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Anthracene			0.152	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Carbazole			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Di-n-butylphthalate			0.215	0.098 J	0.58	0.68 J	0.57	0.1 J	0.54
Fluoranthene	0.6	0.6	0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Pyrene	0.35	0.665	0.178	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Butylbenzylphthalate			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
3,3'-Dichlorobenzidine			0.092	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(a)anthracene	0.23	0.261	0.162	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Chrysene	0.4	0.984	0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Ethylhexy)phthalate			0.32	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Di-n-octyl phthalate			0.185	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(b)fluoranthene			0.188	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(k)fluoranthene			0.205	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(a)pyrene	0.4	0.43	0.162	0.58 U	0.58	0.57 U	0.57	0.079 J	0.54
Indeno(1,2,3-cd)pyrene			0.234	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Dibenzo(a,h)anthracene			0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(g,h,i)perylene			0.224	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Petroleum hydrocarbons									
Total Est. Conc. of TIC				21.4 J		23.5 J		16.2 J	
Method:TCL Semivolatiles									

MAIN POST
SEDIMENT SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SD01-A01		SS01-SD02-A01	
Batch#				9412G922		9412G922	
Prep#				94GBO809		94GBO809	
RFW#				006		005	
Sample Depth				0-6"		0-6"	
Dilution Factor				1.00		1.00	
Matrix				soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date				12/2/94		12/2/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Phenol			0.234	1.1 U	1.1	0.48 U	0.48
bis(2-Chloroethyl) ether			0.32	1.1 U	1.1	0.48 U	0.48
2-Chlorophenol			0.241	1.1 U	1.1	0.48 U	0.48
1,3-Dichlorobenzene			0.175	1.1 U	1.1	0.48 U	0.48
1,4-Dichlorobenzene			0.158	1.1 U	1.1	0.48 U	0.48
1,2-Dichlorobenzene			0.188	1.1 U	1.1	0.48 U	0.48
2-Methylphenol			0.221	1.1 U	1.1	0.48 U	0.48
2,2'-oxybis(1-Chloropropane)			0.231	1.1 U	1.1	0.48 U	0.48
4-Methylphenol			0.426	1.1 U	1.1	0.48 U	0.48
N-Nitroso-di-n-propylamine			0.264	1.1 U	1.1	0.48 U	0.48
Hexachloroethane			0.175	1.1 U	1.1	0.48 U	0.48
Nitrobenzene			0.244	1.1 U	1.1	0.48 U	0.48
Isophorone			0.129	1.1 U	1.1	0.48 U	0.48
2-Nitrophenol			0.231	1.1 U	1.1	0.48 U	0.48
2,4-Dimethylphenol			0.158	1.1 U	1.1	0.48 U	0.48
bis(2-Chloroethoxy) methane			0.201	1.1 U	1.1	0.48 U	0.48
2,4-Dichlorophenol			0.145	1.1 U	1.1	0.48 U	0.48
1,2,4-Trichlorobenzene			0.317	1.1 U	1.1	0.48 U	0.48
Naphthalene			0.277	1.1 U	1.1	0.48 U	0.48
4-Chloroaniline			0.096	1.1 U	1.1	0.48 U	0.48
Hexachlorobutadiene			0.152	1.1 U	1.1	0.48 U	0.48
4-Chloro-3-methylphenol			0.102	1.1 U	1.1	0.48 U	0.48
2-Methylnaphthalene			0.287	1.1 U	1.1	0.48 U	0.48
Hexachlorocyclopentadiene			0.119	1.1 U	1.1	0.48 U	0.48
2,4,6-Trichlorophenol			0.185	1.1 U	1.1	0.48 U	0.48
2,4,5-Trichlorophenol			0.155	2.9 U	2.9	1.2 U	1.2
2-Chloronaphthalene			0.271	1.1 U	1.1	0.48 U	0.48
2-Nitroaniline			0.201	2.9 U	2.9	1.2 U	1.2
Dimethylphthalate			0.145	1.1 U	1.1	0.48 U	0.48
Acenaphthylene			0.198	1.1 U	1.1	0.48 U	0.48
2,6-Dinitrotoluene			0.172	1.1 U	1.1	0.48 U	0.48
3-Nitroaniline			0.172	2.9 U	2.9	1.2 U	1.2
Acenaphthene			0.221	1.1 U	1.1	0.48 U	0.48
2,4-Dinitrophenol			0.152	2.9 U	2.9	1.2 U	1.2
4-Nitrophenol			0.248	2.9 U	2.9	1.2 U	1.2

MAIN POST
SEDIMENT SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SD01-A01		SS01-SD02-A01	
Batch#				9412G922		9412G922	
Prep#				94GBO809		94GBO809	
RFW#				006		005	
Sample Depth				0-6"		0-6"	
Dilution Factor				1.00		1.00	
Matrix				soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date				12/2/94		12/2/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Dibenzofuran			0.215	1.1 U	1.1	0.48 U	0.48
2,4-Dinitrotoluene			0.191	1.1 U	1.1	0.48 U	0.48
Diethylphthalate			0.178	1.1 U	1.1	0.48 U	0.48
4-Chlorophenyl-phenylether			0.231	1.1 U	1.1	0.48 U	0.48
Fluorene			0.208	1.1 U	1.1	0.48 U	0.48
4-Nitroaniline			0.211	2.9 U	2.9	1.2 U	1.2
4,6-Dinitro-2-methylphenol			0.175	2.9 U	2.9	1.2 U	1.2
N-Nitrosodiphenylamine (1)			0.139	1.1 U	1.1	0.48 U	0.48
4-Bromophenyl-phenylether			0.175	1.1 U	1.1	0.48 U	0.48
Hexachlorobenzene			0.182	1.1 U	1.1	0.48 U	0.48
Pentachlorophenol			0.132	2.9 U	2.9	1.2 U	1.2
Phenanthrene	0.225	0.74	0.165	1.1 U	1.1	0.39 J	0.48
Anthracene			0.152	1.1 U	1.1	0.061 J	0.48
Carbazole			0.145	1.1 U	1.1	0.051 J	0.48
Di-n-butylphthalate			0.215	0.26 JB	1.1	0.086 JB	0.48
Fluoranthene	0.6	0.6	0.198	0.44 J	1.1	1.5	0.48
Pyrene	0.35	0.665	0.178	0.66 J	1.1	2	0.48
Butylbenzylphthalate			0.175	1.1 U	1.1	0.48 U	0.48
3,3'-Dichlorobenzidine			0.092	1.1 U	1.1	0.48 U	0.48
Benzo(a)anthracene	0.23	0.261	0.162	0.34 J	1.1	1.3	0.48
Chrysene	0.4	0.984	0.145	0.37 J	1.1	0.13 J	0.48
bis(2-Ethylhexy)phthalate			0.32	0.43 J	1.1	0.23 J	0.48
Di-n-octyl phthalate			0.185	1.1 U	1.1	0.48 U	0.48
Benzo(b)fluoranthene			0.188	0.59 J	1.1	1.8	0.48
Benzo(k)fluoranthene			0.205	0.21 J	1.1	0.58	0.48
Benzo(a)pyrene	0.4	0.43	0.162	0.27 J	1.1	1.2	0.48
Indeno(1,2,3-cd)pyrene			0.234	0.19 J	1.1	0.7	0.48
Dibenzo(a,h)anthracene			0.198	1.1 U	1.1	0.12 J	0.48
Benzo(g,h,i)perylene			0.224	0.19 J	1.1	0.67	0.48
Petroleum hydrocarbons							
Total Organic Carbon				5.7	0.10	3.7	0.11
Total Est. Conc. of TIC				71.5		15.9	
Method:TCL Semivolatiles							

MAIN POST
SEDIMENT INORGANICS

Geographical Location			Pre-1941 STP		AOC3		AOC3	
Sample			MPST-SD01-A01		MP08-SD01-A01		MP08-SD01-C01	
Sample Type							Duplicate	
Batch#			9412G921		9412G921		9412G921	
Prep#			94GTS473		94GTS473		94GTS473	
RFW#			015		013		014	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			12/19/94		12/19/94		12/19/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit
% Solids			50.4	0.10	56.5	0.10	60.1	0.10
Silver	1	1	5.2	0.97	0.78 U	0.78	0.96 U	0.96
Aluminum			9240	8.3	8830	6.7	8170	8.2
Arsenic	33	8.2	24.2	2.5 *	13.2	1.1 *	14.3	0.87 *
Barium			27.6	0.66	13.0	0.53	12.6	0.65
Beryllium			1.3	0.47	1.4	0.38	1.3	0.46
Calcium			1010	3.8	1290	3.0	1240	3.7
Cadmium	5	1.2	4.2	1.1	0.86 U	0.86	1.0 U	1.0
Cobalt			13.5	0.88	5.5	0.71	4.7	0.86
Chromium	80	81	93.5	2.0	74.0	1.6	66.3	2.0
Copper	70	34	35.2	0.75	3.1	0.61	3.2	0.74
Iron			49200	1.5	40300	1.2	37600	1.4
Mercury	0.15	0.15	0.57	0.20	0.13 U	0.13	0.17 U	0.17
Potassium			6760	256	6640	207	5550	253
Magnesium			3390	11.9	3670	9.7	3070	11.8
Manganese			39.5	0.62	51.7	0.51	46.6	0.62
Sodium			2330	4.8	3090	3.9	2160	4.7
Nickel	30	20.9	26.5	4.0	14.0	3.2	11.8	3.9
Lead	35	46.7	59.0	9.9 **	6.5	2.1 **	5.7	1.7 **
Antimony			6.7 U	6.7	5.4 U	5.4	6.6 U	6.6
Selenium			0.88	0.28	0.42	0.30	0.58	0.25
Thallium			0.34 U	0.34	0.37 U	0.37	0.30 U	0.30
Vanadium			49.5	0.91	39.3	0.73	38.2	0.89
Zinc	120	150	386	0.88	68.8	0.71	57.8	0.86
Cyanide			0.96	0.59	0.81 U	0.81	0.71 U	0.71
Dilution Factor			* = 5.0, ** = 20.0		* = 2.00, ** = 4.00		* = 2.00, ** = 4.00	
Method:TAL Metals, Cyanide								

MAIN POST
SEDIMENT INORGANICS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SD01-A01		SS01-SD02-A01	
Batch#			9412G922		9412G922	
Prep#			94GTS473		94GTS473	
RFW#			006		005	
Sample Depth			0-6"		0-6"	
Dilution Factor			1.00		1.00	
Matrix			soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
% Solids			28.7	0.10	68.1	0.10
Silver	1	1	2.1 U	2.1	0.80 U	0.80
Aluminum			9060	18.1	8200	6.9
Arsenic	33	8.2	13.6	2.0 *	14.5	1.8 *
Barium			87.6	1.4	76.6	0.54
Beryllium			3.2	1.0	1.4	0.39
Calcium			2060	8.1	3180	3.1
Cadmium	5	1.2	2.3 U	2.3	0.88 U	0.88
Cobalt			119	1.9	5.7	0.72
Chromium	80	81	88.1	4.3	85.8	1.6
Copper	70	34	48.4	1.6	5.5	0.62
Iron			26500	3.2	61900	1.2
Mercury	0.15	0.15	1.7	0.32	0.14 U	0.14
Potassium			3410	555	10200	211
Magnesium			1470	25.8	3280	9.8
Manganese			67.4	1.4	70.2	0.52
Sodium			189	10.4	77.5	4.0
Nickel	30	20.9	131	8.7	11.8	3.3
Lead	35	46.7	64.1	5.0 **	21.2	3.6 **
Antimony			14.5 U	14.5	5.5 U	5.5
Selenium			1.7	0.56	0.21	0.20
Thallium			0.68 U	0.68	0.25 U	0.25
Vanadium			49.1	2.0	47.0	0.75
Zinc	120	150	162	1.9	117	0.72
Cyanide			3.1	1.7	0.49 U	0.49
Dilution Factor			* = 2.00, ** = 5.00		* = 5.00, ** = 10.0	
Method:TAL Metals, Cyanide						

MAIN POST
SEDIMENT PESTICIDES/PCBS

Geographical Location			AOC3		AOC3		AOC3	
Sample			MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type							Duplicate	
Batch#			9412G921		9412G921		9412G921	
Prep#			94GP1049		95GP0044		94GP1049	
RFW#			013		013RE		014	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			1/11/95		1/17/95		1/11/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit
alpha-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
beta-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
delta-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
gamma-BHC (Lindane)			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Heptachlor			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Aldrin			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Heptachlor epoxide			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Endosulfan I			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Dieldrin			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDE	0.002	0.0022	0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endrin			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endosulfan II			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDD	0.002		0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endosulfan sulfate			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDT	0.00183	0.00158	0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Methoxychlor			0.029 U	0.029	0.029 U	0.029	0.028 U	0.028
Endrin ketone			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endrin aldehyde			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
alpha-Chlordane			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
gamma-Chlordane			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Toxaphene			0.29 U	0.29	0.29 U	0.29	0.28 U	0.28
Aroclor-1016			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1221			0.12 U	0.12	0.12 U	0.12	0.11 U	0.11
Aroclor-1232			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1242			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1248			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1254			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1260			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Method:TCL Pesticides/PCBs								

MAIN POST
SEDIMENT PESTICIDES/PCBS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SD01-A01		SS01-SD02-A01	
Batch#			9412G922		9412G922	
Prep#			94GP1049		94GP1049	
RFW#			006		005	
Sample Depth			0-6"		0-6"	
Dilution Factor			1.00		1.00	
Matrix			soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date			12/2/94		12/2/94	
Analysis Date			1/12/95		1/12/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
alpha-BHC			0.0057 U	0.0057	0.0024 U	0.0024
beta-BHC			0.0057 U	0.0057	0.0024 U	0.0024
delta-BHC			0.0057 U	0.0057	0.0024 U	0.0024
gamma-BHC (Lindane)			0.0057 U	0.0057	0.0024 U	0.0024
Heptachlor			0.0057 U	0.0057	0.0024 U	0.0024
Aldrin			0.0057 U	0.0057	0.0024 U	0.0024
Heptachlor epoxide			0.0057 U	0.0057	0.014 P	0.0024
Endosulfan I			0.0057 U	0.0057	0.0024 J	0.0024
Dieldrin			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDE	0.002	0.0022	0.0092 J	0.011	0.002 JP	0.0049
Endrin			0.011 U	0.011	0.0049 U	0.0049
Endosulfan II			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDD	0.002		0.013	0.011	0.0049 U	0.0049
Endosulfan sulfate			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDT	0.00183	0.00158	0.0057 JP	0.011	0.0024 JP	0.0049
Methoxychlor			0.057 U	0.057	0.024 U	0.024
Endrin ketone			0.011 U	0.011	0.0049 U	0.0049
Endrin aldehyde			0.011 U	0.011	0.0049 U	0.0049
alpha-Chlordane			0.011 P	0.0057	0.0024 P	0.0024
gamma-Chlordane			0.0092 P	0.0057	0.0015 JP	0.0024
Toxaphene			0.57 U	0.57	0.24 U	0.24
Aroclor-1016			0.11 U	0.11	0.049 U	0.049
Aroclor-1221			0.23 U	0.23	0.098 U	0.098
Aroclor-1232			0.11 U	0.11	0.049 U	0.049
Aroclor-1242			0.11 U	0.11	0.049 U	0.049
Aroclor-1248			0.11 U	0.11	0.049 U	0.049
Aroclor-1254			0.11 U	0.11	0.049 U	0.049
Aroclor-1260			0.11 U	0.11	0.049 U	0.049
Method:TCL Pesticides/PCBs						

MAIN POST
SURFACE WATER VOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GVE343		94GVE343		94GVE343		94GVE343		94GVE348		94GVE348		94GVE343	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/7/94		12/7/94		12/7/94		12/7/94		12/9/94		12/9/94		12/7/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Chloromethane	5.7		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane	48.4	4000	6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	0.083	525	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane			9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2.49	1600	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone			6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide			4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene	4.81		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane			3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)			4.4	3 J	10	2 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	5.67	470	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	4 J	10	5 J	10
1,2-Dichloroethane	0.291	99	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone			4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	127		1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	0.363	6.31	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	0.266	22	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane			1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene			3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1.09	81	2.0	2 J	10	2 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	72.6		2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5		4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	0.15	71	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	1700	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4.38	360	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone			5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone			3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	0.388	4.29	4.0	5 J	10	5 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72		4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	7440	200000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	22	21000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	3030	27900	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene			3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)			3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Method:TCL Volatiles																	

MAIN POST
SURFACE WATER VOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G922		9412G922	
Prep#				94GGVE348		94GGVE348	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/9/94		12/9/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Chloromethane	5.7		7.3	10 U	10	10 U	10
Bromomethane	48.4	4000	6.7	10 U	10	10 U	10
Vinyl Chloride	0.083	525	7.9	10 U	10	10 U	10
Chloroethane			9.1	10 U	10	10 U	10
Methylene Chloride	2.49	1600	2.7	10 U	10	10 U	10
Acetone			6.9	10 U	10	10 U	10
Carbon Disulfide			4.4	10 U	10	10 U	10
1,1-Dichloroethene	4.81		4.9	10 U	10	10 U	10
1,1-Dichloroethane			3.0	10 U	10	10 U	10
1,2-Dichloroethene (total)			4.4	10 U	10	10 U	10
Chloroform	5.67	470	2.9	10 U	10	10 U	10
1,2-Dichloroethane	0.291	99	2.4	10 U	10	10 U	10
2-Butanone			4.1	10 U	10	10 U	10
1,1,1-Trichloroethane	127		1.7	10 U	10	10 U	10
Carbon Tetrachloride	0.363	6.31	1.5	10 U	10	10 U	10
Bromodichloromethane	0.266	22	2.0	10 U	10	10 U	10
1,2-Dichloropropane			1.7	10 U	10	10 U	10
cis-1,3-Dichloropropene			3.0	10 U	10	10 U	10
Trichloroethene	1.09	81	2.0	10 U	10	10 U	10
Dibromochloromethane	72.6		2.4	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5		4.3	10 U	10	10 U	10
Benzene	0.15	71	3.3	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	1700	2.4	10 U	10	10 U	10
Bromoform	4.38	360	3.1	10 U	10	10 U	10
4-Methyl-2-pentanone			5.5	10 U	10	10 U	10
2-Hexanone			3.9	10 U	10	10 U	10
Tetrachloroethene	0.388	4.29	4.0	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72		4.2	10 U	10	10 U	10
Toluene	7440	200000	2.7	10 U	10	10 U	10
Chlorobenzene	22	21000	2.7	10 U	10	10 U	10
Ethylbenzene	3030	27900	3.1	10 U	10	10 U	10
Styrene			3.8	10 U	10	10 U	10
Xylene (total)			3.8	10 U	10	10 U	10
Total Est. Conc. of TIC.							
Method:TCL Volatiles							

MAIN POST
SURFACE WATER SEMIVOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GBO800		94GBO800		94GBO800		94GBO800		94GBO800		94GBO809		94GBO800	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Phenol	20900	4600000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	1.4	9.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Chlorophenol	122	402	7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	22200	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	343	3159	4.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	16500	5.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylphenol			6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methylphenol			12.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine			8.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachloroethane	2.73	12.4	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Nitrobenzene	16	1900	7.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Isophorone	552		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitrophenol			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol			4.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane			6.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	794	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	113	9.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Naphthalene			8.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloroaniline			2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	6.94		4.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol			3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene			8.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	17000	3.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	6.53	5.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	9790	4.7	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
2-Chloronaphthalene			8.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitroaniline			6.1	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Dimethyl phthalate	313000	2900000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acenaphthylene			6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene			5.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
3-Nitroaniline			5.2	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Acenaphthene			6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	14000	4.6	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
4-Nitrophenol			7.5	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25

MAIN POST
SURFACE WATER SEMIVOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GBO800		94GBO800		94GBO800		94GBO800		94GBO800		94GBO809		94GBO800	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Dibenzofuran			6.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	9.1	5.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Diethyl phthalate	21200	111000	5.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Fluorene	1340		6.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Nitroaniline			6.4	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol			5.3	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
N-Nitrosodiphenylamine (1)			4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether			5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	0.000748	0.000775	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Pentachlorophenol	0.282	7.9	4.0	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Phenanthrene			5.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Anthracene	9570	108000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbazole			4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Di-n-butylphthalate	3530	15700	6.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Fluoranthene	310	393	6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Pyrene	797	8970	5.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Butylbenzylphthalate	239	416	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	0.0767	2.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	0.031	4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chrysene	0.0028	0.031	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	5.92	9.7	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10
Di-n-octyl phthalate			5.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	0.031	5.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	0.031	6.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	0.031	4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	0.031	7.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibenz(a,h)anthracene	0.0028	0.031	6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene			6.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC				11		17		28		3		10		11		2	
Method:TCL Semivolatiles																	

MAIN POST
SURFACE WATER SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G921		9412G922	
Prep#				94GBO800		94GBO800	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Phenol	20900	4600000	7.1	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	1.4	9.7	10 U	10	10 U	10
2-Chlorophenol	122	402	7.3	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	22200	5.3	10 U	10	10 U	10
1,4-Dichlorobenzene	343	3159	4.8	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	16500	5.7	10 U	10	10 U	10
2-Methylphenol			6.7	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)			7.0	10 U	10	10 U	10
4-Methylphenol			12.9	10 U	10	10 U	10
N-Nitroso-di-n-propylamine			8.0	10 U	10	10 U	10
Hexachloroethane	2.73	12.4	5.3	10 U	10	10 U	10
Nitrobenzene	16	1900	7.4	10 U	10	10 U	10
Isophorone	552		3.9	10 U	10	10 U	10
2-Nitrophenol			7.0	10 U	10	10 U	10
2,4-Dimethylphenol			4.8	10 U	10	10 U	10
bis(2-Chloroethoxy) methane			6.1	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	794	4.4	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	113	9.6	10 U	10	10 U	10
Naphthalene			8.4	10 U	10	10 U	10
4-Chloroaniline			2.9	10 U	10	10 U	10
Hexachlorobutadiene	6.94		4.6	10 U	10	10 U	10
4-Chloro-3-methylphenol			3.1	10 U	10	10 U	10
2-Methylnaphthalene			8.7	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	17000	3.6	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	6.53	5.6	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	9790	4.7	25 U	25	25 U	25
2-Chloronaphthalene			8.2	10 U	10	10 U	10
2-Nitroaniline			6.1	25 U	25	25 U	25
Dimethylphthalate	313000	2900000	4.4	10 U	10	10 U	10
Acenaphthylene			6.0	10 U	10	10 U	10
2,6-Dinitrotoluene			5.2	10 U	10	10 U	10
3-Nitroaniline			5.2	25 U	25	25 U	25
Acenaphthene			6.7	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	14000	4.6	25 U	25	25 U	25
4-Nitrophenol			7.5	25 U	25	25 U	25

MAIN POST
SURFACE WATER SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G921		9412G922	
Prep#				94GBO800		94GBO800	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Dibenzofuran			6.5	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	9.1	5.8	10 U	10	10 U	10
Diethylphthalate	21200	111000	5.4	10 U	10	10 U	10
4-Chlorophenyl-phenylether			7.0	10 U	10	10 U	10
Fluorene	1340		6.3	10 U	10	10 U	10
4-Nitroaniline			6.4	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol			5.3	25 U	25	25 U	25
N-Nitrosodiphenylamine (1)			4.2	10 U	10	10 U	10
4-Bromophenyl-phenylether			5.3	10 U	10	10 U	10
Hexachlorobenzene	0.000748	0.000775	5.5	10 U	10	10 U	10
Pentachlorophenol	0.282	7.9	4.0	25 U	25	25 U	25
Phenanthrene			5.0	10 U	10	10 U	10
Anthracene	9570	108000	4.6	10 U	10	10 U	10
Carbazole			4.4	10 U	10	10 U	10
Di-n-butylphthalate	3530	15700	6.5	10 U	10	10 U	10
Fluoranthene	310	393	6.0	10 U	10	10 U	10
Pyrene	797	8970	5.4	10 U	10	10 U	10
Butylbenzylphthalate	239	416	5.3	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	0.0767	2.8	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	0.031	4.9	10 U	10	10 U	10
Chrysene	0.0028	0.031	4.4	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	5.92	9.7	10 U	10	10 U	10
Di-n-octyl phthalate			5.6	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	0.031	5.7	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	0.031	6.2	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	0.031	4.9	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	0.031	7.1	10 U	10	10 U	10
Dibenz(a,h)anthracene	0.0028	0.031	6.0	10 U	10	10 U	10
Benzo(g,h,i)perylene			6.8	10 U	10	10 U	10
Petroleum hydrocarbons				0.26 U	0.26	0.27 U	0.27
Total Est. Conc. of TIC				13		15	
Method:TCL Semivolatiles							

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M2		M2		M2		M2		M3		M3	
Sample			MP02-SW01-A01		MP02-SW01-A01 SOL		MP02-SW02-A01		MP02-SW02-A01SOL		MP06-SW01-A01		MP06-SW01-A01 SOL	
Sample Type														
Batch#			9412G921		9412G921		9412G921		9412G921		9412G921		9412G921	
Prep#			94GCN260		94GI180		94GCN260		94GI180		94GCN264		94GI180	
RFW#			007		008		009		010		003		004	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94		12/13/94		12/19/94		12/14/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			258	26.7	26.7 U	26.7	263	26.7	26.7 U	26.7	155	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000		42.7	2.1	38.2	2.1	47	2.1	41.8	2.1	32.6	2.1	27.7	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			18000	12.0	17700	12.0	19400	12.0	19000	12.0	32100	12.0	30400	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			4.5	2.8	4.1	2.8	4.8	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper			3.1	2.4	4.2	2.4	2.9	2.4	4.9	2.4	2.4 U	2.4	2.4 U	2.4
Iron			2760	4.7	493	4.7	3020	4.7	681	4.7	2850	4.7	412	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20 U	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			2840	821	2860	821	2980	821	3180	821	5630	821	5170	821
Magnesium			2930	38.2	2860	38.2	3170	38.2	3070	38.2	9360	38.2	8840	38.2
Manganese	100		89.9	2.0	86.1	2.0	97.6	2.0	92.8	2.0	101	2.0	94.3	2.0
Sodium			25400	15.4	25200	15.4	27500	15.4	26900	15.4	52800	15.4	49800	15.4
Nickel	516	3900	12.8 U	12.8	14.7	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8
Lead	5		3.1	1.6	7.6	1.6	2.3	1.6	1.6 U	1.6	4	1.6	1.6 U	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90 U	0.90 U	0.90	1.1	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc			29.1	2.8	19.4	2.8	32.9	2.8	21.1	2.8	12.1	2.8	7.8	2.8
Cyanide	5.2	1	10 U	10			10 U	10			10 U	10.0		
Method:TAL Metals, Cyanide														

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M3		M3		M3		M3		M14		M14	
Sample			MP06-SW01-C01		MP06-SW01-C01 SOL		MP10-SW01-A01		MP10-SW01-A01 SOL		MP14-SW01-A01		MP14-SW01-A01 SOL	
Sample Type			Duplicate		Duplicate									
Batch#			9412G921		9412G921		9412G922		9412G922		9412G921		9412G921	
Prep#			94GCN260		94GI180		94GCN264		94GI186		94GCN260		94GI180	
RFW#			005		006		001		002		018		019	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/13/94		12/14/94		12/21/94		12/13/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			179	26.7	26.7 U	26.7	69.0	26.7	26.7 U	26.7	188	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000		33.3	2.1	27.6	2.1	34.6	2.1	29.1	2.1	30.0	2.1	27.2	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			32100	12.0	30300	12.0	30000	12.0	29400	12.0	16200	12.0	16300	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper			2.4 U	2.4	4.3	2.4	2.4 U	2.4	3.9	2.4	2.9	2.4	5.6	2.4
Iron			2940	4.7	465	4.7	2180	4.7	355	4.7	1920	4.7	839	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			6260	821	5840	821	4320	821	4280	821	4840	821	4240	821
Magnesium			9790	38.2	9030	38.2	5340	38.2	5160	38.2	9770	38.2	9540	38.2
Manganese	100		102	2.0	94.1	2.0	98.7	2.0	96.2	2.0	65.6	2.0	63.6	2.0
Sodium			56500	15.4	52300	15.4	18200	15.4	17700	15.4	70100	15.4	69100	15.4
Nickel	516	3900	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	14.2	12.8	12.8 U	12.8
Lead	5		4.8	1.6	1.6 U	1.6	1.6	1.6	1.6 U	1.6	3.4	1.6	3.1	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc			12.2	2.8	2.8	2.8	16	2.8	7.9	2.8	23.7	2.8	14.4	2.8
Cyanide	5.2	1	10 U	10			10 U	10			10 U	10		
Method:TAL Metals, Cyanide														

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M14		M14	
Sample			MP14-SW02-A01		MP14-SW02-A01SOL	
Sample Type						
Batch#			9412G921		9412G921	
Prep#			94GCN260		94GI180	
RFW#			011		012	
Dilution Factor			1.00		1.00	
Matrix			water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1
Aluminum			205	26.7	26.7	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6
Barium	2000		33.1	2.1	31.2	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5
Calcium			20400	12.0	20300	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4
Cobalt			2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4
Copper			5.3	2.4	4.9	2.4
Iron			2070	4.7	999	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20
Potassium			8320	821	8220	821
Magnesium			21400	38.2	21600	38.2
Manganese	100		68.4	2.0	66.1	2.0
Sodium			168000	15.4	171000	15.4
Nickel	516	3900	12.8 U	12.8	12.8 U	12.8
Lead	5		2.8	1.6	3.2	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9
Zinc			23.4	2.8	13.2	2.8
Cyanide	5.2	1	10 U	10		
Method:TAL Metals, Cyanide						

MAIN POST
SURFACE WATER INORGANICS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS01		Background SS02		Background SS02	
Sample			SS01-SW01-A01		SS01-SW01-A01 SOL		SS01-SW02-A01		SS01-SW02-A01 SOL	
Batch#			9412G921		9412G921		9412G922		9412G922	
Prep#			94GCN260		94GI180		94GCN264		94GI186	
RFW#			001		002		003		004	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94		12/14/94		12/21/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			388	26.7	26.7 U	26.7	748	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	2.6	1.6	1.6 U	1.6
Barium	2000		44.7	2.1	39.4	2.1	42.3	2.1	31.3	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			17300	12.0	17400	12.0	31600	12.0	30900	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			8.1	2.8	4.1	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	7.5	6.4	6.4 U	6.4
Copper			3.2	2.4	4	2.4	3.1	2.4	3.1	2.4
Iron			3010	4.7	405	4.7	6210	4.7	335	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			2990	821	2670	821	5060	821	4280	821
Magnesium			2880	38.2	2860	38.2	5440	38.2	5120	38.2
Manganese	100		93.3	2.0	90.7	2.0	113	2.0	98.6	2.0
Sodium			26700	15.4	26200	15.4	17600	15.4	17400	15.4
Nickel	516	3900	22.9	12.8	16.1	12.8	12.8	12.8	12.8 U	12.8
Lead	5		2.4	1.6	1.6 U	1.6	10.0	1.6	1.6 U	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.8	2.9 U	2.8	5.8	2.9	2.9 U	2.9
Zinc			35.1	2.9	23.8	2.9	31.8	2.8	8.8	2.8
Cyanide	5.2	1	10 U	10.0			10 U	10		
Method:TAL Metals, Cyanide										

MAIN POST
SURFACE WATER PESTICIDES/PCBS

Geographical Location			M2		M2		M3		M3		M3		M14		M14	
Sample			MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A02		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type									Duplicate							
Batch#			9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#			94GP1038		94GP1038		94GP1038		94GP1038		94GP1038		94GP1038		94GP1038	
RFW#			007		009		003		005		001		018		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/16/94		12/16/94		12/16/94		12/16/94		12/16/94		12/16/94		12/16/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
alpha-BHC	0.00391	0.0131	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
beta-BHC	0.137	0.460	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
delta-BHC			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
gamma-BHC (Lindane)	0.08	0.16	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Heptachlor	0.000208	0.000214	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Aldrin	0.000135	0.000144	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Heptachlor epoxide	0.000103	0.000106	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Endosulfan I			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Dieldrin	0.000135	0.000144	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDE	0.000588	0.000591	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endrin	0.0023	0.0023	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endosulfan II			0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDD	0.000832	0.000837	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endosulfan sulfate	0.93	2.0	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDT	0.000588	0.000591	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Methoxychlor	0.03	0.03	0.50 U	0.50	0.50 U	0.50	0.05 U	0.05	0.50 U	0.50	0.54 U	0.54	0.49 U	0.49	0.53 U	0.53
Endrin ketone			0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endrin aldehyde	0.76	0.81	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
alpha-Chlordane	0.000277	0.000283	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
gamma-Chlordane			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Toxaphene	0.00073	0.000747	5.0 U	5.0	5.0 U	5.0	5.4 U	5.4	5.0 U	5.0	5.4 U	5.4	4.9 U	4.9	5.3 U	5.3
Aroclor-1016	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1221	0.000244	0.000247	2.0 U	2.0	2.0 U	2.0	2.2 U	2.2	2.0 U	2.0	2.2 U	2.2	2.0 U	2.0 U	2.1 U	2.1
Aroclor-1232	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1242	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1248	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1254	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1260	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Method:TCL Pesticides/PCBs																

MAIN POST
SURFACE WATER PESTICIDES/PCBS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SW01-A01		SS01-SW02-A01	
Batch#			9412G921		9412G922	
Prep#			94GP1038		94GP1038	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/16/94		1/17/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
alpha-BHC	0.00391	0.0131	0.046 U	0.046	0.053 U	0.053
beta-BHC	0.137	0.460	0.046 U	0.046	0.053 U	0.053
delta-BHC			0.046 U	0.046	0.053 U	0.053
gamma-BHC (Lindane)	0.08	0.16	0.046 U	0.046	0.053 U	0.053
Heptachlor	0.000208	0.000214	0.046 U	0.046	0.053 U	0.053
Aldrin	0.000135	0.000144	0.046 U	0.046	0.053 U	0.053
Heptachlor epoxide	0.000103	0.000106	0.046 U	0.046	0.053 U	0.053
Endosulfan I			0.046 U	0.046	0.053 U	0.053
Dieldrin	0.000135	0.000144	0.091 U	0.091	0.11 U	0.11
4,4'-DDE	0.000588	0.000591	0.091 U	0.091	0.11 U	0.11
Endrin	0.0023	0.0023	0.091 U	0.091	0.11 U	0.11
Endosulfan II			0.091 U	0.091	0.11 U	0.11
4,4'-DDD	0.000832	0.000837	0.091 U	0.091	0.11 U	0.11
Endosulfan sulfate	0.93	2.0	0.091 U	0.091	0.11 U	0.11
4,4'-DDT	0.000588	0.000591	0.091 U	0.091	0.11 U	0.11
Methoxychlor	0.03	0.03	0.46 U	0.46	0.53 U	0.53
Endrin ketone			0.091 U	0.091	0.11 U	0.11
Endrin aldehyde	0.76	0.81	0.091 U	0.091	0.11 U	0.11
alpha-Chlordane	0.000277	0.000283	0.046 U	0.046	0.053 U	0.053
gamma-Chlordane			0.046 U	0.046	0.053 U	0.053
Toxaphene	0.00073	0.000747	4.6 U	4.6	5.3 U	5.3
Aroclor-1016	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1221	0.000244	0.000247	1.8 U	1.8	2.1 U	2.1
Aroclor-1232	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1242	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1248	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1254	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1260	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Method:TCL Semivolatiles						

MAIN POST
SURFACE SOIL VOLATILES

Geographical Location			M16		M16		M16		M16		M16		M16	
Sample			MP16-SS01-A01		MP16-SS01-D01		MP16-SS01-E01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Sample Type					Trip Blank		Field Rinsate Blank							
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GVT027		94GVE343		94GVE343		94GVT028		94GVT027		94GVT027	
RFW#			012		016		017		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		water		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/5/94		12/6/94		12/6/94		12/6/94		12/5/94		12/5/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.018 B		0.011 U	0.011	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Method:TCL Volatiles														

MAIN POST
SURFACE SOIL SEMIVOLATILES

Geographical Location			M15		M15		M16		M16		M16		M16	
Sample			MP15-SS01-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GB0796		94GB0796		94GB0796		94GB0796		94GB0796		94GB0796	
RFW#			010		011		012		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		25.0		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.32	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Chlorophenol	280	0.241	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,4-Dichlorobenzene	570	0.158	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.188	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Methylphenol	2800	0.221	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Methylphenol	2800	0.426	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.264	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachloroethane	6	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Nitrobenzene	28	0.244	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Isophorone	1100	0.129	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Nitrophenol		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dimethylphenol	1100	0.158	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.201	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dichlorophenol	170	0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.317	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Naphthalene	230	0.277	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chloroaniline	230	0.096	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorobutadiene	1	0.152	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.102	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Methylnaphthalene		0.287	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.119	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.185	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4,5-Trichlorophenol	5600	0.155	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
2-Chloronaphthalene		0.271	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Nitroaniline		0.201	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Dimethylphthalate	10000	0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Acenaphthylene		0.198	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,6-Dinitrotoluene	1	0.172	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
3-Nitroaniline		0.172	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Acenaphthene	3400	0.221	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dinitrophenol	110	0.152	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
4-Nitrophenol		0.248	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Dibenzofuran		0.215	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38

MAIN POST
SURFACE SOIL SEMIVOLATILES

Geographical Location			M15		M15		M16		M16		M16		M16	
Sample			MP15-SS01-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GB0796		94GB0796		94GB0796		94GB0796		94GB0796		94GB0796	
RFW#			010		011		012		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		25.0		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
2,4-Dinitrotoluene	1	0.191	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Diethylphthalate	10000	0.178	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chlorophenyl-phenylether		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Fluorene	2300	0.208	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Nitroaniline		0.211	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
4,6-Dinitro-2-methylphenol		0.175	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.139	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Bromophenyl-phenylether		0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorobenzene	0.66	0.182	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Pentachlorophenol	6	0.132	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Phenanthrene		0.165	0.37 J		0.17 J		0.37 U	0.37	9.9 U	9.9	0.045 J		0.38 U	0.38
Anthracene	10000	0.152	0.041 J		0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Carbazole		0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Di-n-butylphthalate	5700	0.215	0.1 JB		0.13 JB		0.086 JB		9.9 U	9.9	0.088 JB		0 JB	
Fluoranthene	2300	0.198	0.53		0.36 J		0.046 J		9.9 U	9.9	0.1 J		0.073 J	
Pyrene	1700	0.178	0.72		0.43		0.06 J		9.9 U	9.9	0.14 J		0.096 J	
Butylbenzylphthalate	1100	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.092	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(a)anthracene	0.9	0.162	0.31 J		0.18 J		0.37 U	0.37	9.9 U	9.9	0.069 J		0.039 J	
Chrysene	9	0.145	0.33 J		0.23 J		0.37 U	0.37	9.9 U	9.9	0.063 J		0.043 J	
bis(2-Ethylhexy)phthalate	49	0.32	0.069 J		0.077 J		0.084 J		1.1 J		0.26 J		0.64	
Di-n-octyl phthalate	1100	0.185	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.188	0.45		0.35 J		0.37 U	0.37	9.9 U	9.9	0.12 J		0.065 J	
Benzo(k)fluoranthene	0.9	0.205	0.13 J		0.11 J		0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(a)pyrene	0.66	0.162	0.27 J		0.2 J		0.37 U	0.37	9.9 U	9.9	0.057 J		0.046 J	
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.16 J		0.12 J		0.37 U	0.37	9.9 U	9.9	0.049 J		0.04 J	
Dibenzo(a,h)anthracene	0.66	0.198	0.041 J		0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(g,h,i)perylene		0.224	0.16 J		0.11 J		0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Method:TCL Semivolatiles														

MAIN POST
SURFACE SOIL INORGANICS

Geographical Location		MP15		MP15	
Sample		MP15-SS01-A01		MP15-SS02-A01	
Batch#		9411G832		9411G832	
Prep#		94GTS468		94GTS468	
RFW#		010		011	
Sample Depth		0-6"		0-6"	
Dilution Factor		1.00		1.00	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94	
Analysis Date		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		86.2	0.10	81.3	0.10
Silver	110	1.4	0.56	1.5	0.61
Aluminum		5300	4.8	5030	5.2
Arsenic	20	8.3	0.6 *	8.9	0.38
Barium	700	68.4	0.38	101	0.41
Beryllium	1	0.6	0.27	0.69	0.29
Calcium		815	2.2	1860	2.4
Cadmium	1	2.9	0.51	4.5	0.55
Cobalt		6.1	0.49	7.8	0.53
Chromium		109	0.54	95.5	0.59
Copper	600	34	0.42	66.5	0.45
Iron		33400	0.85	37700	0.92
Mercury	14	0.11 U	0.11	0.12 U	0.12
Potassium		2990	149	2770	160
Magnesium		1560	4.4	1600	4.8
Manganese		159	0.36	187	0.39
Sodium		23.4	2.8	33.1	3
Nickel	250	8.3	2.3	6.9	2.5
Lead	400	5340	4.6	6130	4.9
Antimony	14	3.9 U	3.9	4.2 U	4.2
Selenium	63	0.45	0.17	2.1	0.21
Thallium	2	0.21 U	0.21	0.26 U	0.26
Vanadium	370	27.5	0.53	25.9	0.57
Zinc	1500	7750	0.51	12800	0.55
Dilution Factor		* = 2.00			
Method:TAL Metals					

MAIN POST
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		M15		M15		M15		M15		M16		M16	
Sample		MP15-SS01-A01		MP15-SS01-A01		MP15-SS02-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS01-A01	
Batch#		9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033	
RFW#		010		010 DL		011		011 DL		012		012 DL	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		10.0		500		1.00		20.0		1.00		20.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date		12/17/94		12/14/94		12/17/94		12/14/94		12/17/94		12/13/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
beta-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
delta-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
gamma-BHC (Lindane)	0.52	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0034		0.037 U	0.037
Heptachlor	0.15	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Aldrin	0.04	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Heptachlor epoxide		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Endosulfan I	340	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Dieldrin	0.042	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.017		0.075 U	0.075
4,4'-DDE	2	3.1 C		6.6 CD		0.32 C		1 CD		0.27 C		.35 CD	
Endrin	17	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
Endosulfan II	340	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
4,4'-DDD	3	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.078		.13 D	
Endosulfan sulfate		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
4,4'-DDT	2	3.4 C		7.9 CD		0.35 C		1 CD		0.33 C		1.1 CD	
Methoxychlor	280	0.19 U	0.19	9.5 U	9.5	0.02 U	0.02	0.4 U	0.4	0.019 U	0.019	0.37 U	0.37
Endrin ketone		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
Endrin aldehyde		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
alpha-Chlordane		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.043		.05 D	
gamma-Chlordane		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.046		.05 D	
Toxaphene	0.1	1.9 U	1.9	95 U	95	0.2 U	0.2	4 U	4	0.19 U	0.19	3.7 U	3.7
Aroclor-1016	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1221	0.49	0.76 U	0.76	38 U	38	0.081 U	0.081	1.6 U	1.6	0.075 U	0.075	1.5 U	1.5
Aroclor-1232	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1242	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1248	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1254	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1260	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Method:Pesticides/PCBs													

MAIN POST
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		M16		M16		M16		M16		M16		M16	
Sample		MP16-SS02-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS03-A01		MP16-SS04-A01		MP16-SS04-A01	
Batch#		9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033	
RFW#		013		013 DL		015		015 DL		014		014 DL	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		10.0		500		1.00		50.0		2.00		50.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date		12/17/94		12/14/94		12/17/94		12/13/94		12/17/94		12/14/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
beta-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
delta-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
gamma-BHC (Lindane)	0.52	0.17		1 U	1	0.0059		0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Heptachlor	0.15	2 C		2.5 CD		0.0099		0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Aldrin	0.04	0.17 C		1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Heptachlor epoxide		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Endosulfan I	340	0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Dieldrin	0.042	1.9 C		2 CD		0.15		.21 D		0.37 C		.37 CD	
4,4'-DDE	2	2 C		3.5 CD		0.11 C		.48 CD		0.46 C		.57 CD	
Endrin	17	0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
Endosulfan II	340	0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
4,4'-DDD	3	0.04 U	0.04	2 U	2	0.13		.22 D		0.68 C		1.6 CD	
Endosulfan sulfate		0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
4,4'-DDT	2	3.3 C		23 CD		0.31 C		2 CD		0.66 C		1.7 CD	
Methoxychlor	280	0.2 U	0.2	10 U	10	0.018 U	0.018	0.92 U	0.92	0.038 U	0.038	0.95 U	0.95
Endrin ketone		0.092		2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
Endrin aldehyde		0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
alpha-Chlordane		1.9 C		11 CD		0.18		.2 D		0.45 C		.86 CD	
gamma-Chlordane		2 C		13 CD		0.19		.2 D		0.45 C		.92 CD	
Toxaphene	0.1	2 U	2	100 U	100	0.18 U	0.18	9.2 U	9.2	0.38 U	0.38	9.5 U	9.5
Aroclor-1016	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1221	0.49	0.8 U	0.8	40 U	40	0.073 U	0.073	3.7 U	3.7	0.15 U	0.15	3.8 U	3.8
Aroclor-1232	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1242	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1248	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1254	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1260	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Method:Pesticides/PCBs													

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB01-D02		MPA3-SB01-E02		MPA3-SB02-A02		MPA3-SB02-D02		MPA3-SB03-E02		MP16-SB01-A01	
Sample Type					Duplicate		Trip Blank		Field Rinsate Blank				Trip Blank		Field Rinsate Blank			
Batch#			9412G130		9412G130		9412G155		9412G130		9412G155		9412G155		9505G825		9412G155	
Prep#			94GVT030 & 31		94GVT030 & 31		94GVB439		94GVB439		94GVT030		94GVB439		95GVC137		94GVT031	
RFW#			001		002		005		003		003		004		007		001	
Sample Depth (bgs)			6 - 9.5'		6 - 9.5'						6 - 9.5'						0 - 2'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		water		water		soil		water		water		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/l		mg/kg		mg/l		mg/l		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/14/94		12/15/94		12/15/94		5/10/95		12/15/94	
Analysis Date			12/19/94		12/19/94		12/20/94		12/19/94		12/19/94		12/20/94		5/20/95		12/20/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.68 B	.056 *	2 B	110 *	0.01 U	0.01	0.24 B	0.01	0.19 B	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.076 B	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.006 J	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.			0.009 J		.060 J*													
Dilution Factor			* = 5.0		* = 10.0													
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB01-A02		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01		MP18-SB03-A02		M18-SB04-A01	
Sample Type																		
Batch#			9412G155		9501G632		9501G632		9501G632		9501G632		9501G632		9501G632		9501G587	
Prep#			94GVT030		95GVT016 & 8		95GVT016 & 9		95GVT008		95GVT016 & 9		95GVT008 & 9		95GVT008		95GVF013	
RFW#			002		003		004		005		006		007		008		003	
Sample Depth (bgs)			2 - 4'		1 - 1.5'		2'		1 - 1.5'		4 - 6'		1 - 1.5'		4 - 7.5'		1 - 1.5'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			12/19/94		1/18/95		1/18/95		1/19/95		1/18/95		1/19/95		1/19/95		1/16/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromomethane	79	0.0067	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Vinyl Chloride	2	0.0079	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chloroethane		0.0091	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Methylene Chloride	49	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Acetone	1000	0.0069	0.027 B	0.013	0.59 B	.12 *	2.3 B	1.2 *	0.13 B	0.011	0.63 B	.62 *	0.34 B	0.06	0.074 B	0.012	0.011 U	0.011
Carbon Disulfide		0.0044	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1-Dichloroethene	8	0.0049	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1-Dichloroethane	570	0.003	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloroethene (total)	79	0.0044	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chloroform	19	0.0029	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloroethane	6	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
2-Butanone	1000	0.0041	0.013 U	0.013	0.039	0.012	0.054 B	12	0.023	0.011	0.14	0.012	0.13	0.012	0.013	0.012	0.011 U	0.011
1,1,1-Trichloroethane	210	0.0017	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Carbon Tetrachloride	2	0.0015	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromodichloromethane	11	0.002	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloropropane	10	0.0017	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
cis-1,3-Dichloropropene	4	0.003	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Trichloroethene	23	0.002	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Dibromochloromethane	110	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1,2-Trichloroethane	22	0.0043	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Benzene	3	0.0033	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
trans-1,3-Dichloropropene	4	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromoform	86	0.0031	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
4-Methyl-2-pentanone	1000	0.0055	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
2-Hexanone		0.0039	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Tetrachloroethene	4	0.004	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1,2,2-Tetrachloroethane	34	0.0042	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Toluene	1000	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chlorobenzene	37	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Ethylbenzene	1000	0.0031	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Styrene	23	0.0038	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Xylene (total)	410	0.0038	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Total Est. Conc. of TIC.							.008 J, .6 J *				.009 J, .3 J *		0.068 J		0.06 J			
Dilution Factor					* = 10.00		* = 100				* = 50.0		* = 5.00					
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18		M18		M18	
Sample			M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02		MP18-SB07-A01		MP18-SB07-D01		MP18-SB24-A01	
Sample Type															Trip Blank			
Batch#			9401G587		9501G587		9501G587		9501G587		9501G587		9501G632		9501G632		9501G632	
Prep#			95GVF013		95GVF014		95GVF013		95GVF013		95GVT008		95GVT008		95GVC008		95GVT009	
RFW#			004		001		002		005		006		009		010		001	
Sample Depth (bgs)			4 - 6'		1 - 1.5'		2 - 5'		1 - 1.5'		2 - 5'		1 - 1.5'				1 - 1.5'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/12/95		1/12/95		1/12/95	
Analysis Date			1/16/95		1/17/95		1/16/95		1/16/95		1/18/95		1/19/95		1/23/95		1/19/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.03 B	0.012	0.049 B	0.014	0.24	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.013 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.002 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.013 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.											1.15 J		0.006 J				0.007 J	
Dilution Factor																		
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M18		M18		M18		M18		B1		B1		B2		B2	
Sample			MP18-SB24-A02		MP18-SB25-A01		MP18-SB25-A02		MP18-SB25-D02		B1-SB01-A01		B1-SB01-A02		B2-SB01-A01		B2-SB01-A02	
Sample Type									Trip Blank									
Batch#			9501G632		9501G656		9501G656		9501G656		9501G527		9501G527		9501G500		9501G500	
Prep#			95GVT016		95GVT010		95GVT010		95GVC007		95GVF012		95GVF011		95GVF011 & 13		95GVF011	
RFW#			002		001		002		003		001		002		001		002	
Sample Depth (bgs)			2 - 4'		1 - 1.5'		2 - 4'				1 - 2'		2 - 4'		1 - 2'		6 - 8'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		water		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/13/95		1/13/95		1/13/95		1/9/94		1/9/94		1/6/95		1/6/95	
Analysis Date			1/18/95		1/20/95		1/20/95		1/21/95		1/15/94		1/13/94		1/13/95		1/13/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromomethane	79	0.0067	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chloroethane		0.0091	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Methylene Chloride	49	0.0027	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.015 B	0.012
Acetone	1000	0.0069	0.095 B	0.012	0.012 U	0.012	0.066 B	0.011	0.03	0.01	0.011 U	0.011	0.001 J	0.013	0.61 B	*	0.53	*
Carbon Disulfide		0.0044	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chloroform	19	0.0029	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.003 J	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
2-Butanone	1000	0.0041	0.014	0.012	0.012 U	0.012	0.011	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromodichloromethane	11	0.002	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Trichloroethene	23	0.002	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Benzene	3	0.0033	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromoform	86	0.0031	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
2-Hexanone		0.0039	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Tetrachloroethene	4	0.004	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Toluene	1000	0.0027	0.012 U	0.012	0.012 U	0.012	0.002 J	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chlorobenzene	37	0.0027	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Styrene	23	0.0038	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Xylene (total)	410	0.0038	0.012 U	0.012	0.012 U	0.012	0.006 J	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Total Est. Conc. of TIC.			0.064 J				0.118 J		0.008 J									
Dilution Factor															* = ?		* = 10.0	
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			B3		B3		B3		B4		B4		B4		B4		B5	
Sample			B3-SB01-A01		B3-SB01-A03		B3-SB01-D03		B4-SB01-A01		B4-SB01-A02		B4-SB01-C01		B4-SB01-D01		B5-SB01-A01	
Sample Type							Trip Blank						Duplicate		Trip Blank			
Batch#			9501G500		9501G500		9401G500		9501G527		9501G527		9501G527		9501G527		9501G587	
Prep#			95GVF011		95GVF011		95GB0012		95GVF012		95GVF012 & 13		95GVF012		95GVE012		95GVF016	
RFW#			003		004		005		003		004		005		006		007	
Sample Depth (bgs)			1 - 2'		16 - 18'				1 - 2'		6 - 8'						1 - 2'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		water		soil		soil		soil		water		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/l		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			1/13/95		1/12/95		1/13/95		1/15/95		1/15/95		1/15/95		1/12/95		1/18/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.032 B	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.036	0.014	0.01 U	0.01	0.011 U	0.011	0.83 B	27 *	0.016	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.004 J	0.011	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.004 J	0.011	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.																	0.023 J	
Dilution Factor											* = 20.0							
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			B5		B5	
Sample			B5-SB01-A02		B5-SB01-D02	
Sample Type					Trip Blank	
Batch#			9501G587		9501G587	
Prep#			95GVF014		95GVC005	
RFW#			008		009	
Sample Depth (bgs)			2 - 4'			
Dilution Factor			1.00		1.00	
Matrix			soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/l	
Sampling Date			1/11/95		1/11/95	
Analysis Date			1/17/95		1/16/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.012 U	0.012	0.01 U	0.01
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.						
Dilution Factor						
Method:TCL Volatiles						

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			AOC3		AOC3		AOC3		M16		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type					Duplicate							
Batch#			9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#			94GBO835		94GBO835		94GBO835		94GB0835		94GB0835	
RFW#			001		002		003		001		002	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date			12/27/94		12/27/94		12/23/94		12/23/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
bis(2-Chloroethyl) ether	0.66	0.32	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Chlorophenol	280	0.241	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,3-Dichlorobenzene	5100	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,4-Dichlorobenzene	570	0.158	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,2-Dichlorobenzene	5100	0.188	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Methylphenol	2800	0.221	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Methylphenol	2800	0.426	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
N-Nitroso-di-n-propylamine	0.66	0.264	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachloroethane	6	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Nitrobenzene	28	0.244	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Isophorone	1100	0.129	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Nitrophenol		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dimethylphenol	1100	0.158	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.201	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dichlorophenol	170	0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,2,4-Trichlorobenzene	68	0.317	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Naphthalene	230	0.277	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chloroaniline	230	0.096	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorobutadiene	1	0.152	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chloro-3-methylphenol	10000	0.102	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Methylnaphthalene		0.287	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorocyclopentadiene	400	0.119	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4,6-Trichlorophenol	62	0.185	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4,5-Trichlorophenol	5600	0.155	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
2-Chloronaphthalene		0.271	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Nitroaniline		0.201	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Dimethylphthalate	10000	0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Acenaphthylene		0.198	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,6-Dinitrotoluene	1	0.172	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
3-Nitroaniline		0.172	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Acenaphthene	3400	0.221	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dinitrophenol	110	0.152	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
4-Nitrophenol		0.248	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			AOC3		AOC3		AOC3		M16		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type					Duplicate							
Batch#			9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#			94GBO835		94GBO835		94GBO835		94GB0835		94GB0835	
RFW#			001		002		003		001		002	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date			12/27/94		12/27/94		12/23/94		12/23/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dinitrotoluene	1	0.191	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Diethylphthalate	10000	0.178	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chlorophenyl-phenylether		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Fluorene	2300	0.208	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Nitroaniline		0.211	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
4,6-Dinitro-2-methylphenol		0.175	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
N-Nitrosodiphenylamine (1)	140	0.139	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Bromophenyl-phenylether		0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorobenzene	0.66	0.182	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Pentachlorophenol	6	0.132	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Phenanthrene		0.165	0.09 J	0.37	0.078 J	0.36	0.35 U	0.35	0.14 J	0.38	0.42 U	0.42
Anthracene	10000	0.152	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Carbazole		0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Di-n-butylphthalate	5700	0.215	0.093 JB	0.37	0.17 JB	0.36	0.084 JB	0.35	0.092 JB	0.38	0.094 JB	0.42
Fluoranthene	2300	0.198	0.11 J	0.37	0.11 J	0.36	0.35 U	0.35	0.33 J	0.38	0.42 U	0.42
Pyrene	1700	0.178	0.15 J	0.37	0.14 J	0.36	0.35 U	0.35	0.22 J	0.38	0.42 U	0.42
Butylbenzylphthalate	1100	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
3,3'-Dichlorobenzidine	2	0.092	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(a)anthracene	0.9	0.162	0.077 J	0.37	0.078 J	0.36	0.35 U	0.35	0.092 J	0.38	0.42 U	0.42
Chrysene	9	0.145	0.099 J	0.37	0.11 J	0.36	0.35 U	0.35	0.15 J	0.38	0.42 U	0.42
bis(2-Ethylhexy)phthalate	49	0.32	0.057 J	0.37	0.11 J	0.36	0.053 J	0.35	0.38 U	0.38	0.23 J	0.42
Di-n-octyl phthalate	1100	0.185	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(b)fluoranthene	0.9	0.188	0.077 J	0.37	0.093 J	0.36	0.35 U	0.35	0.15 J	0.38	0.42 U	0.42
Benzo(k)fluoranthene	0.9	0.205	0.37 U	0.37	0.037 J	0.36	0.35 U	0.35	0.069 J	0.38	0.42 U	0.42
Benzo(a)pyrene	0.66	0.162	0.055 J	0.37	0.069 J	0.36	0.35 U	0.35	0.084 J	0.38	0.43	0.42
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.046 J	0.37	0.057 J	0.36	0.35 U	0.35	0.067 J	0.38	0.42 U	0.42
Dibenzo(a,h)anthracene	0.66	0.198	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(g,h,i)perylene		0.224	0.049 J	0.37	0.055 J	0.36	0.35 U	0.35	0.063 J	0.38	0.42 U	0.42
Petroleum hydrocarbons												
Total Est. Conc. of TIC			17.3		17.3		.18 J, 10.28 JB		14.8		14.2	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB02-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02	
Sample Type																
Batch#			9412G155		9501G587		9501G587		9501G587		9501G587		9501G587		9501G587	
Prep#			94GB0835		95GTS014		95GTS014		95GTS014		95GTS014		95GTS014		95GP0035	
RFW#			003		003		004		001		002		005		006	
Sample Depth (bgs)																
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95	
Analysis Date			12/28/94		1/20/95		1/20/95		1/20/95		1/20/95		1/20/95		2/22/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Phenol	10000	0.234	0.35 U	0.35											0.46 U	0.46
bis(2-Chloroethyl) ether	0.66	0.32	0.35 U	0.35											0.46 U	0.46
2-Chlorophenol	280	0.241	0.35 U	0.35											0.46 U	0.46
1,3-Dichlorobenzene	5100	0.175	0.35 U	0.35											0.46 U	0.46
1,4-Dichlorobenzene	570	0.158	0.35 U	0.35											0.46 U	0.46
1,2-Dichlorobenzene	5100	0.188	0.35 U	0.35											0.46 U	0.46
2-Methylphenol	2800	0.221	0.35 U	0.35											0.46 U	0.46
2,2'-oxybis(1-Chloropropane)		0.231	0.35 U	0.35											0.46 U	0.46
4-Methylphenol	2800	0.426	0.35 U	0.35											0.46 U	0.46
N-Nitroso-di-n-propylamine	0.66	0.264	0.35 U	0.35											0.46 U	0.46
Hexachloroethane	6	0.175	0.35 U	0.35											0.46 U	0.46
Nitrobenzene	28	0.244	0.35 U	0.35											0.46 U	0.46
Isophorone	1100	0.129	0.35 U	0.35											0.46 U	0.46
2-Nitrophenol		0.231	0.35 U	0.35											0.46 U	0.46
2,4-Dimethylphenol	1100	0.158	0.35 U	0.35											0.46 U	0.46
bis(2-Chloroethoxy) methane		0.201	0.35 U	0.35											0.46 U	0.46
2,4-Dichlorophenol	170	0.145	0.35 U	0.35											0.46 U	0.46
1,2,4-Trichlorobenzene	68	0.317	0.35 U	0.35											0.46 U	0.46
Naphthalene	230	0.277	0.35 U	0.35											1.2	0.46
4-Chloroaniline	230	0.096	0.35 U	0.35											0.46 U	0.46
Hexachlorobutadiene	1	0.152	0.35 U	0.35											0.46 U	0.46
4-Chloro-3-methylphenol	10000	0.102	0.35 U	0.35											0.46 U	0.46
2-Methylnaphthalene		0.287	0.35 U	0.35											0.27 U	0.46
Hexachlorocyclopentadiene	400	0.119	0.35 U	0.35											0.46 U	0.45
2,4,6-Trichlorophenol	62	0.185	0.35 U	0.35											0.46 U	0.46
2,4,5-Trichlorophenol	5600	0.155	0.88 U	0.88											1.1 U	1.1
2-Chloronaphthalene		0.271	0.35 U	0.35											0.46 U	0.46
2-Nitroaniline		0.201	0.88 U	0.88											1.1 U	1.1
Dimethylphthalate	10000	0.145	0.35 U	0.35											0.46 U	0.46
Acenaphthylene		0.198	0.35 U	0.35											0.46 U	0.46
2,6-Dinitrotoluene	1	0.172	0.35 U	0.35											0.46 U	0.46
3-Nitroaniline		0.172	0.88 U	0.88											1.1 U	1.1
Acenaphthene	3400	0.221	0.35 U	0.35											52	9.2 *
2,4-Dinitrophenol	110	0.152	0.88 U	0.88											1.1 U	1.1
4-Nitrophenol		0.248	0.88 U	0.88											1.1 U	1.1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB02-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02	
Sample Type																
Batch#			9412G155		9501G587		9501G587		9501G587		9501G587		9501G587		9501G587	
Prep#			94GB0835		95GTS014		95GTS014		95GTS014		95GTS014		95GTS014		95GP0035	
RFW#			003		003		004		001		002		005		006	
Sample Depth (bgs)																
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95	
Analysis Date			12/28/94		1/20/95		1/20/95		1/20/95		1/20/95		1/20/95		2/22/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.35 U	0.35											31	9.2 *
2,4-Dinitrotoluene	1	0.191	0.35 U	0.35											0.460 U	0.46
Diethylphthalate	10000	0.178	0.35 U	0.35											0.460 U	0.46
4-Chlorophenyl-phenylether		0.231	0.35 U	0.35											0.460 U	0.46
Fluorene	2300	0.208	0.35 U	0.35											40	9.2 *
4-Nitroaniline		0.211	0.88 U	0.88											1.1 U	1.1
4,6-Dinitro-2-methylphenol		0.175	0.88 U	0.88											1.1 U	1.1
N-Nitrosodiphenylamine (1)	140	0.139	0.35 U	0.35											0.46 U	0.46
4-Bromophenyl-phenylether		0.175	0.35 U	0.35											0.46 U	0.46
Hexachlorobenzene	0.66	0.182	0.35 U	0.35											0.46 U	0.46
Pentachlorophenol	6	0.132	0.88 U	0.88											1.1 U	1.1
Phenanthrene		0.165	0.35 U	0.35											140	46 **
Anthracene	10000	0.152	0.35 U	0.35											16	9.2 *
Carbazole		0.145	0.35 U	0.35											4.8 J	9.2 *
Di-n-butylphthalate	5700	0.215	0.084 JB	0.35											0.36 JB	0.46
Fluoranthene	2300	0.198	0.35 U	0.35											46	9.2 *
Pyrene	1700	0.178	0.35 U	0.35											48	9.2 *
Butylbenzylphthalate	1100	0.175	0.35 U	0.35											0.45 J	0.46
3,3'-Dichlorobenzidine	2	0.092	0.35 U	0.35											0.46 U	0.46
Benzo(a)anthracene	0.9	0.162	0.35 U	0.35											11	9.2 *
Chrysene	9	0.145	0.35 U	0.35											10	9.2 *
bis(2-Ethylhexy)phthalate	49	0.32	0.053 J	0.35											0.17 J	0.46
Di-n-octyl phthalate	1100	0.185	0.35 U	0.35											0.46 U	0.46
Benzo(b)fluoranthene	0.9	0.188	0.35 U	0.35											7.6 J	9.2 *
Benzo(k)fluoranthene	0.9	0.205	0.35 U	0.35											2.3	0.46
Benzo(a)pyrene	0.66	0.162	0.35 U	0.35											3.8 J	9.2 *
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.35 U	0.35											2.1	0.46
Dibenzo(a,h)anthracene	0.66	0.198	0.35 U	0.35											0.45 J	0.46
Benzo(g,h,i)perylene		0.224	0.35 U	0.35											0.21 J	0.46
Petroleum hydrocarbons					27.8 U	27.8	26.8 U	26.8	117	28.7	30.0 U	30.0	221	28.6	2300	348
Total Est. Conc. of TIC			10.46												17.8	
Dilution Factor															* = 20.0, ** = 100	
Method:TCL Semivolatiles																

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			M18-SB06-A02RE		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01	
Sample Type														
Batch#			9501G587		9412G632		9412G632		9412G632		9412G632		9412G632	
Prep#			95GP0083		94GTS038		94GTS038		94GTS038		94GTS038		94GTS038	
RFW#			006		003		004		005		006		006	
Sample Depth (bgs)														
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date			2/11/95		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.46 U	0.46										
bis(2-Chloroethyl) ether	0.66	0.32	0.46 U	0.46										
2-Chlorophenol	280	0.241	0.46 U	0.46										
1,3-Dichlorobenzene	5100	0.175	0.46 U	0.46										
1,4-Dichlorobenzene	570	0.158	0.46 U	0.46										
1,2-Dichlorobenzene	5100	0.188	0.46 U	0.46										
2-Methylphenol	2800	0.221	0.46 U	0.46										
2,2'-oxybis(1-Chloropropane)		0.231	0.46 U	0.46										
4-Methylphenol	2800	0.426	0.46 U	0.46										
N-Nitroso-di-n-propylamine	0.66	0.264	0.46 U	0.46										
Hexachloroethane	6	0.175	0.46 U	0.46										
Nitrobenzene	28	0.244	0.46 U	0.46										
Isophorone	1100	0.129	0.46 U	0.46										
2-Nitrophenol		0.231	0.46 U	0.46										
2,4-Dimethylphenol	1100	0.158	0.46 U	0.46										
bis(2-Chloroethoxy) methane		0.201	0.46 U	0.46										
2,4-Dichlorophenol	170	0.145	0.46 U	0.46										
1,2,4-Trichlorobenzene	68	0.317	0.46 U	0.46										
Naphthalene	230	0.277	0.94	0.46										
4-Chloroaniline	230	0.096	0.46 U	0.46										
Hexachlorobutadiene	1	0.152	0.46 U	0.46										
4-Chloro-3-methylphenol	10000	0.102	0.46 U	0.46										
2-Methylnaphthalene		0.287	0.18 J	0.46										
Hexachlorocyclopentadiene	400	0.119	0.46 U	0.46										
2,4,6-Trichlorophenol	62	0.185	0.46 U	0.46										
2,4,5-Trichlorophenol	5600	0.155	1.2 U	1.2										
2-Chloronaphthalene		0.271	0.46 U	0.46										
2-Nitroaniline		0.201	1.2 U	1.2										
Dimethylphthalate	10000	0.145	0.46 U	0.46										
Acenaphthylene		0.198	0.46 U	0.46										
2,6-Dinitrotoluene	1	0.172	0.46 U	0.46										
3-Nitroaniline		0.172	1.2 U	1.2										
Acenaphthene	3400	0.221	E	0.46										
2,4-Dinitrophenol	110	0.152	1.2 U	1.2										
4-Nitrophenol		0.248	1.2 U	1.2										

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			M18-SB06-A02RE		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01	
Sample Type														
Batch#			9501G587		9412G632		9412G632		9412G632		9412G632		9412G632	
Prep#			95GP0083		94GTS038		94GTS038		94GTS038		94GTS038		94GTS038	
RFW#			006		003		004		005		006		006	
Sample Depth (bgs)														
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date			2/11/95		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	E	0.46										
2,4-Dinitrotoluene	1	0.191	0.46 U	0.46										
Diethylphthalate	10000	0.178	0.46 U	0.46										
4-Chlorophenyl-phenylether		0.231	0.46 U	0.46										
Fluorene	2300	0.208	E	0.46										
4-Nitroaniline		0.211	1.2 U	1.2										
4,6-Dinitro-2-methylphenol		0.175	1.2 U	1.2										
N-Nitrosodiphenylamine (1)	140	0.139	0.46 U	0.46										
4-Bromophenyl-phenylether		0.175	0.46 U	0.46										
Hexachlorobenzene	0.66	0.182	0.46 U	0.46										
Pentachlorophenol	6	0.132	1.2 U	1.2										
Phenanthrene		0.165	E	0.46										
Anthracene	10000	0.152	E	0.46										
Carbazole		0.145	E	0.46										
Di-n-butylphthalate	5700	0.215	1.6 B	0.46										
Fluoranthene	2300	0.198	E	0.46										
Pyrene	1700	0.178	E	0.46										
Butylbenzylphthalate	1100	0.175	0.46 U	0.46										
3,3'-Dichlorobenzidine	2	0.092	0.46 U	0.46										
Benzo(a)anthracene	0.9	0.162	E	0.46										
Chrysene	9	0.145	E	0.46										
bis(2-Ethylhexy)phthalate	49	0.32	0.18 J	0.46										
Di-n-octyl phthalate	1100	0.185	0.46 U	0.46										
Benzo(b)fluoranthene	0.9	0.188	E	0.46										
Benzo(k)fluoranthene	0.9	0.205	1.3	0.46										
Benzo(a)pyrene	0.66	0.162	3.1	0.46										
Indeno(1,2,3-cd)pyrene	0.9	0.234	1.7	0.46										
Dibenzo(a,h)anthracene	0.66	0.198	0.46 U	0.46										
Benzo(g,h,i)perylene		0.224	1.5	0.46										
Petroleum hydrocarbons					367	27.5	84.9	28.5	188	27.8	612	30.6	6330	719
Total Est. Conc. of TIC			21.2											
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18	
Sample			MP18-SB03-A01		MP18-SB07-A02		MP18-SB24-A01		MP18-SB24-A02		MP18-SB25-A01	
Sample Type												
Batch#			9412G632		9412G632		9412G632		9412G632		9501G656	
Prep#			94GTS038		94GTS038		94GTS038		94GTS038		95GTS038	
RFW#			007		008		001		002		001	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		10.0	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			1/30/95		1/30/95		1/30/95		1/30/95		1/13/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234										
bis(2-Chloroethyl) ether	0.66	0.32										
2-Chlorophenol	280	0.241										
1,3-Dichlorobenzene	5100	0.175										
1,4-Dichlorobenzene	570	0.158										
1,2-Dichlorobenzene	5100	0.188										
2-Methylphenol	2800	0.221										
2,2'-oxybis(1-Chloropropane)		0.231										
4-Methylphenol	2800	0.426										
N-Nitroso-di-n-propylamine	0.66	0.264										
Hexachloroethane	6	0.175										
Nitrobenzene	28	0.244										
Isophorone	1100	0.129										
2-Nitrophenol		0.231										
2,4-Dimethylphenol	1100	0.158										
bis(2-Chloroethoxy) methane		0.201										
2,4-Dichlorophenol	170	0.145										
1,2,4-Trichlorobenzene	68	0.317										
Naphthalene	230	0.277										
4-Chloroaniline	230	0.096										
Hexachlorobutadiene	1	0.152										
4-Chloro-3-methylphenol	10000	0.102										
2-Methylnaphthalene		0.287										
Hexachlorocyclopentadiene	400	0.119										
2,4,6-Trichlorophenol	62	0.185										
2,4,5-Trichlorophenol	5600	0.155										
2-Chloronaphthalene		0.271										
2-Nitroaniline		0.201										
Dimethylphthalate	10000	0.145										
Acenaphthylene		0.198										
2,6-Dinitrotoluene	1	0.172										
3-Nitroaniline		0.172										
Acenaphthene	3400	0.221										
2,4-Dinitrophenol	110	0.152										
4-Nitrophenol		0.248										

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18	
Sample			MP18-SB03-A01		MP18-SB07-A02		MP18-SB24-A01		MP18-SB24-A02		MP18-SB25-A01	
Sample Type												
Batch#			9412G632		9412G632		9412G632		9412G632		9501G656	
Prep#			94GTS038		94GTS038		94GTS038		94GTS038		95GTS038	
RFW#			007		008		001		002		001	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		10.0	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			1/30/95		1/30/95		1/30/95		1/30/95		1/13/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result	
Dibenzofuran		0.215										
2,4-Dinitrotoluene	1	0.191										
Diethylphthalate	10000	0.178										
4-Chlorophenyl-phenylether		0.231										
Fluorene	2300	0.208										
4-Nitroaniline		0.211										
4,6-Dinitro-2-methylphenol		0.175										
N-Nitrosodiphenylamine (1)	140	0.139										
4-Bromophenyl-phenylether		0.175										
Hexachlorobenzene	0.66	0.182										
Pentachlorophenol	6	0.132										
Phenanthrene		0.165										
Anthracene	10000	0.152										
Carbazole		0.145										
Di-n-butylphthalate	5700	0.215										
Fluoranthene	2300	0.198										
Pyrene	1700	0.178										
Butylbenzylphthalate	1100	0.175										
3,3'-Dichlorobenzidine	2	0.092										
Benzo(a)anthracene	0.9	0.162										
Chrysene	9	0.145										
bis(2-Ethylhexy)phthalate	49	0.32										
Di-n-octyl phthalate	1100	0.185										
Benzo(b)fluoranthene	0.9	0.188										
Benzo(k)fluoranthene	0.9	0.205										
Benzo(a)pyrene	0.66	0.162										
Indeno(1,2,3-cd)pyrene	0.9	0.234										
Dibenzo(a,h)anthracene	0.66	0.198										
Benzo(g,h,i)perylene		0.224										
Petroleum hydrocarbons			1100	29.0	29.9	28.6	695	28.8	993	31.1	311	29.6
Total Est. Conc. of TIC												
Dilution Factor					These can be found in the Inorganics data packages.							
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		B1		B1		B1		B2	
Sample			MP18-SB25-A02		B1-SB01-A01		B1-SB01-A01RE		B1-SB01-A02		B2-SB01-A01	
Sample Type												
Batch#			9501G656		9401G527		9401G527		9401G527		9401G500	
Prep#			95GTS038		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		001		001		002		001	
Sample Depth (bgs)												
Dilution Factor			10.0		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/9/95		1/9/95		1/9/95		1/6/95	
Analysis Date			1/13/95		1/21/94		2/8/94		2/8/94		1/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Chloroethyl) ether	0.66	0.32			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Chlorophenol	280	0.241			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,3-Dichlorobenzene	5100	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,4-Dichlorobenzene	570	0.158			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,2-Dichlorobenzene	5100	0.188			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Methylphenol	2800	0.221			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,2'-oxybis(1-Chloropropane)		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Methylphenol	2800	0.426			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
N-Nitroso-di-n-propylamine	0.66	0.264			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachloroethane	6	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Nitrobenzene	28	0.244			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Isophorone	1100	0.129			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Nitrophenol		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dimethylphenol	1100	0.158			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Chloroethoxy) methane		0.201			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dichlorophenol	170	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,2,4-Trichlorobenzene	68	0.317			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Naphthalene	230	0.277			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chloroaniline	230	0.096			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorobutadiene	1	0.152			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chloro-3-methylphenol	10000	0.102			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Methylnaphthalene		0.287			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorocyclopentadiene	400	0.119			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4,6-Trichlorophenol	62	0.185			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4,5-Trichlorophenol	5600	0.155			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
2-Chloronaphthalene		0.271			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Nitroaniline		0.201			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Dimethylphthalate	10000	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Acenaphthylene		0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,6-Dinitrotoluene	1	0.172			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
3-Nitroaniline		0.172			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Acenaphthene	3400	0.221			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dinitrophenol	110	0.152			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
4-Nitrophenol		0.248			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		B1		B1		B1		B2	
Sample			MP18-SB25-A02		B1-SB01-A01		B1-SB01-A01RE		B1-SB01-A02		B2-SB01-A01	
Sample Type												
Batch#			9501G656		9401G527		9401G527		9401G527		9401G500	
Prep#			95GTS038		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		001		001		002		001	
Sample Depth (bgs)												
Dilution Factor			10.0		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/9/95		1/9/95		1/9/95		1/6/95	
Analysis Date			1/13/95		1/21/94		2/8/94		2/8/94		1/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dinitrotoluene	1	0.191			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Diethylphthalate	10000	0.178			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chlorophenyl-phenylether		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Fluorene	2300	0.208			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Nitroaniline		0.211			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
4,6-Dinitro-2-methylphenol		0.175			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
N-Nitrosodiphenylamine (1)	140	0.139			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Bromophenyl-phenylether		0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorobenzene	0.66	0.182			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Pentachlorophenol	6	0.132			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Phenanthrene		0.165			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.067 J	0.41
Anthracene	10000	0.152			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Carbazole		0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Di-n-butylphthalate	5700	0.215			0.16 JB	0.38	0.11 JB	0.38	0.078 JB	0.42	0.068 JB	0.41
Fluoranthene	2300	0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.042 J	0.41
Pyrene	1700	0.178			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.081 J	0.41
Butylbenzylphthalate	1100	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
3,3'-Dichlorobenzidine	2	0.092			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(a)anthracene	0.9	0.162			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Chrysene	9	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Ethylhexy)phthalate	49	0.32			0.041 J	0.38	0.083 J	0.38	0.42 U	0.42	0.067 J	0.41
Di-n-octyl phthalate	1100	0.185			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(b)fluoranthene	0.9	0.188			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(k)fluoranthene	0.9	0.205			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(a)pyrene	0.66	0.162			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Indeno(1,2,3-cd)pyrene	0.9	0.234			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Dibenzo(a,h)anthracene	0.66	0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(g,h,i)perylene		0.224			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Petroleum hydrocarbons			2500	141								
Total Est. Conc. of TIC					12.1		5.15		5.58		11.5	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B2		B3		B3		B4		B4	
Sample			B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01RE	
Sample Type												
Batch#			9401G500		9401G500		9401G500		9401G527		9401G527	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		003		004		003		003	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date			1/21/95		1/21/95		1/21/95		2/8/94		2/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.32	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Chlorophenol	280	0.241	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,4-Dichlorobenzene	570	0.158	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.188	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Methylphenol	2800	0.221	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Methylphenol	2800	0.426	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.264	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachloroethane	6	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Nitrobenzene	28	0.244	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Isophorone	1100	0.129	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Nitrophenol		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dimethylphenol	1100	0.158	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.201	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dichlorophenol	170	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.317	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Naphthalene	230	0.277	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chloroaniline	230	0.096	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorobutadiene	1	0.152	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.102	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Methylnaphthalene		0.287	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.119	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.185	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4,5-Trichlorophenol	5600	0.155	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
2-Chloronaphthalene		0.271	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Nitroaniline		0.201	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Dimethylphthalate	10000	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Acenaphthylene		0.198	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.039 J	0.38	0.38 U	0.38
2,6-Dinitrotoluene	1	0.172	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
3-Nitroaniline		0.172	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Acenaphthene	3400	0.221	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrophenol	110	0.152	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
4-Nitrophenol		0.248	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B2		B3		B3		B4		B4	
Sample			B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01RE	
Sample Type												
Batch#			9401G500		9401G500		9401G500		9401G527		9401G527	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		003		004		003		003	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date			1/21/95		1/21/95		1/21/95		2/8/94		2/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrotoluene	1	0.191	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Diethylphthalate	10000	0.178	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chlorophenyl-phenylether		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Fluorene	2300	0.208	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Nitroaniline		0.211	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
4,6-Dinitro-2-methylphenol		0.175	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.139	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Bromophenyl-phenylether		0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorobenzene	0.66	0.182	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Pentachlorophenol	6	0.132	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Phenanthrene		0.165	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.39	0.38	0.37 J	0.38
Anthracene	10000	0.152	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.092 J	0.38	0.071 J	0.38
Carbazole		0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Di-n-butylphthalate	5700	0.215	0.073 JB	0.41	0.058 JB	0.38	0.071 JB	0.45	0.056 JB	0.38	0.057 JB	0.38
Fluoranthene	2300	0.198	0.41 U	0.41	0.07 J	0.38	0.45 U	0.45	0.44	0.38	0.46	0.38
Pyrene	1700	0.178	0.41 U	0.41	0.062 J	0.38	0.45 U	0.45	1.5	0.38	1.1	0.38
Butylbenzylphthalate	1100	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.092	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Benzo(a)anthracene	0.9	0.162	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.54	0.38	0.65	0.38
Chrysene	9	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.64	0.38	0.58	0.38
bis(2-Ethylhexy)phthalate	49	0.32	0.047 J	0.41	0.38 U	0.38	0.078 J	0.45	0.069 J	0.38	0.064 J	0.38
Di-n-octyl phthalate	1100	0.185	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.188	0.41 U	0.41	0.055 J	0.38	0.45 U	0.45	0.83	0.38	0.83	0.38
Benzo(k)fluoranthene	0.9	0.205	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.37 J	0.38	0.43	0.38
Benzo(a)pyrene	0.66	0.162	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.51	0.38	0.57	0.38
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.3 J	0.38	0.46	0.38
Dibenzo(a,h)anthracene	0.66	0.198	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.05 JB	0.38	0.38 U	0.38
Benzo(g,h,i)perylene		0.224	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.33 JB	0.38	0.54 B	0.38
Petroleum hydrocarbons												
Total Est. Conc. of TIC			11.58		10.47				4.53		0.86	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B4		B4		B4		B4		B5	
Sample			B4-SB01-A02		B4-SB01-A02RE		B4-SB01-C01		B4-SB01-C01RE		B5-SB01-A01	
Sample Type							Duplicate		Duplicate			
Batch#			9401G527		9401G527		9401G527		9401G527		9501G587	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GP0035	
RFW#			004		004		005		005		007	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			2/8/94		2/9/94		2/8/95		2/9/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.42 J	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.32	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Chlorophenol	280	0.241	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,4-Dichlorobenzene	570	0.158	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.188	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Methylphenol	2800	0.221	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Methylphenol	2800	0.426	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.264	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachloroethane	6	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Nitrobenzene	28	0.244	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Isophorone	1100	0.129	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Nitrophenol		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dimethylphenol	1100	0.158	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.201	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dichlorophenol	170	0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.317	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Naphthalene	230	0.277	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chloroaniline	230	0.096	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorobutadiene	1	0.152	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.102	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Methylnaphthalene		0.287	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.119	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.185	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.155	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
2-Chloronaphthalene		0.271	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Nitroaniline		0.201	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Dimethylphthalate	10000	0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Acenaphthylene		0.198	0.45 U	0.45	0.45 U	0.45	0.041 J	0.37	0.37 U	0.37	0.39 U	0.39
2,6-Dinitrotoluene	1	0.172	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
3-Nitroaniline		0.172	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Acenaphthene	3400	0.221	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dinitrophenol	110	0.152	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
4-Nitrophenol		0.248	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B4		B4		B4		B4		B5	
Sample			B4-SB01-A02		B4-SB01-A02RE		B4-SB01-C01		B4-SB01-C01RE		B5-SB01-A01	
Sample Type							Duplicate		Duplicate			
Batch#			9401G527		9401G527		9401G527		9401G527		9501G587	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GP0035	
RFW#			004		004		005		005		007	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			2/8/94		2/9/94		2/8/95		2/9/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dinitrotoluene	1	0.191	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Diethylphthalate	10000	0.178	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chlorophenyl-phenylether		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Fluorene	2300	0.208	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Nitroaniline		0.211	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.175	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.139	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Bromophenyl-phenylether		0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorobenzene	0.66	0.182	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Pentachlorophenol	6	0.132	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Phenanthrene		0.165	0.45 U	0.45	0.45 U	0.45	0.11 J	0.37	0.1 J	0.37	0.39 U	0.39
Anthracene	10000	0.152	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.04 J	0.37	0.39 U	0.39
Carbazole		0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Di-n-butylphthalate	5700	0.215	0.22 JB	0.45	0.22 JB	0.45	0.062 JB	0.37	0.067 JB	0.37	0.082 JB	0.39
Fluoranthene	2300	0.198	0.45 U	0.45	0.45 U	0.45	0.3 J	0.37	0.36 J	0.37	0.046 J	0.39
Pyrene	1700	0.178	0.45 U	0.45	0.45 U	0.45	1.1	0.37	0.81	0.37	0.041 J	0.39
Butylbenzylphthalate	1100	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.092	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Benzo(a)anthracene	0.9	0.162	0.45 U	0.45	0.45 U	0.45	0.54	0.37	0.58	0.37	0.39 U	0.39
Chrysene	9	0.145	0.45 U	0.45	0.45 U	0.45	0.61	0.37	0.65	0.37	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.32	0.45 U	0.45	0.45 U	0.45	0.04 J	0.37	0.37 U	0.37	0.39 U	0.39
Di-n-octyl phthalate	1100	0.185	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.188	0.45 U	0.45	0.45 U	0.45	0.75	0.37	0.9	0.37	0.056 J	0.39
Benzo(k)fluoranthene	0.9	0.205	0.45 U	0.45	0.45 U	0.45	0.23 J	0.37	0.26 J	0.37	0.39 U	0.39
Benzo(a)pyrene	0.66	0.162	0.45 U	0.45	0.45 U	0.45	0.59	0.37	0.6	0.37	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.45 U	0.45	0.45 U	0.45	0.26 J	0.37	0.44	0.37	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.198	0.45 U	0.45	0.45 U	0.45	0.058 JB	0.37	0.079 JB	0.37	0.39 U	0.39
Benzo(g,h,i)perylene		0.224	0.45 U	0.45	0.45 U	0.45	0.39 B	0.37	0.64 B	0.37	0.39 U	0.39
Petroleum hydrocarbons												
Total Est. Conc. of TIC			4.88		5.18		5.6		5.02		6.35	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B5		B5		B5	
Sample			B5-SB01-A01RE		B5-SB01-A01RE		B5-SB01-A02	
Sample Type								
Batch#			9501G587		9501G587		9501G587	
Prep#			95GP0035		95GP0035		95GP0035	
RFW#			007		008		008	
Sample Depth (bgs)								
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95	
Analysis Date			2/10/95		2/11/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.32	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Chlorophenol	280	0.241	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,4-Dichlorobenzene	570	0.158	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.188	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylphenol	2800	0.221	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Methylphenol	2800	0.426	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.264	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachloroethane	6	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Nitrobenzene	28	0.244	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Isophorone	1100	0.129	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitrophenol		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dimethylphenol	1100	0.158	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.201	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dichlorophenol	170	0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.317	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Naphthalene	230	0.277	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloroaniline	230	0.096	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobutadiene	1	0.152	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.102	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylnaphthalene		0.287	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.119	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.185	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.155	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
2-Chloronaphthalene		0.271	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitroaniline		0.201	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Dimethylphthalate	10000	0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Acenaphthylene		0.198	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,6-Dinitrotoluene	1	0.172	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3-Nitroaniline		0.172	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Acenaphthene	3400	0.221	0.1 J	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrophenol	110	0.152	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
4-Nitrophenol		0.248	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B5		B5		B5	
Sample			B5-SB01-A01RE		B5-SB01-A01RE		B5-SB01-A02	
Sample Type								
Batch#			9501G587		9501G587		9501G587	
Prep#			95GP0035		95GP0035		95GP0035	
RFW#			007		008		008	
Sample Depth (bgs)								
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95	
Analysis Date			2/10/95		2/11/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.06 J	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrotoluene	1	0.191	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Diethylphthalate	10000	0.178	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chlorophenyl-phenylether		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Fluorene	2300	0.208	0.074 J	0.39	0.4 U	0.4	0.39 U	0.39
4-Nitroaniline		0.211	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.175	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.139	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Bromophenyl-phenylether		0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobenzene	0.66	0.182	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Pentachlorophenol	6	0.132	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Phenanthrene		0.165	0.3 J	0.39	0.4 U	0.4	0.39 U	0.39
Anthracene	10000	0.152	0.1 J	0.39	0.4 U	0.4	0.39 U	0.39
Carbazole		0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Di-n-butylphthalate	5700	0.215	1.8 B	0.39	2.2 B	0.4	0.094 JB	0.39
Fluoranthene	2300	0.198	0.21 J	0.39	0.4 U	0.4	0.39 U	0.39
Pyrene	1700	0.178	0.2 J	0.39	0.4 U	0.4	0.39 U	0.39
Butylbenzylphthalate	1100	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.092	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)anthracene	0.9	0.162	0.047 J	0.39	0.4 U	0.4	0.39 U	0.39
Chrysene	9	0.145	0.056 J	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.32	0.39 U	0.39	0.19 J	0.4	0.39 U	0.39
Di-n-octyl phthalate	1100	0.185	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.188	0.12 J	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.205	0.12 J	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)pyrene	0.66	0.162	0.08 J	0.39	0.4 U	0.4	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.198	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(g,h,i)perylene		0.224	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Petroleum hydrocarbons								
Total Est. Conc. of TIC			10.68		12.2		4.85	
Dilution Factor								
Method:TCL Semivolatiles								

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M-AOC3		M-AOC3		M-AOC3		M16		M16	
Sample		MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type				Duplicate							
Batch#		9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484	
RFW#		001		002		003		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.1	0.10	90.1	0.10	93.0	0.1	86.1	0.10	77.9	0.10
Silver	110	0.43 U	0.43	0.52 U	0.52	0.69	0.42	0.40 U	0.40	0.60 U	0.60
Aluminum		3000	1.8	3580	2.2	4020	1.8	6840	1.7	11900	2.6
Arsenic	20	2.8	0.31	3.4	0.27	4.2	0.33	8.8	0.31	16.0	2.0 *
Barium	700	14.4	0.14	11.6	0.17	12.5	0.14	36.3	0.13	29.7	0.20
Beryllium	1	0.34	0.072	0.39	0.087	0.63	0.069	0.84	0.067	0.80	0.10
Calcium		310	1.6	406	1.9	226	1.5	1500	1.5	1200	2.2
Cadmium	1	0.61 U	0.61	0.74 U	0.74	0.59 U	0.59	0.57 U	0.57	0.86 U	0.86
Cobalt		0.72	0.51	1.4	0.61	1.5	0.49	5.0	0.47	2.8	0.70
Chromium		39.9	1.2	45.2	1.4	61.0	1.1	54.6	1.1	59.5	1.6
Copper	600	1.9	0.43	1.9	0.52	1.7	0.42	24.2	0.40	11.7	0.60
Iron		15000	0.42	18900	0.50	21700	0.40	21300	0.39	36200	0.58
Mercury	14	0.09 U	0.09	0.073 U	0.073	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Potassium		1760	18.5	1950	22.3	4240	17.7	2990	17.2	3660	25.7
Magnesium		690	6.9	760	8.3	1490	6.6	1670	6.4	2340	9.6
Manganese		13.8	0.11	19.6	0.13	15.6	0.10	74.5	0.10	37.7	0.15
Sodium		17.4	2.4	21.6	2.9	18.6	2.3	283	2.2	232	3.3
Nickel	250	1.9	0.58	2.5	0.70	3.0	0.55	8.0	0.54	5.4	0.81
Lead	400	8.3	2.7 *	28.6	2.4 *	11.5	2.9	35.3	5.4 *	16.3	1.7
Antimony	14	2.1 U	2.1	2.5 U	2.5	2.0 U	2.0	1.9 U	1.9	2.9 U	2.9 *
Selenium	63	0.17 U	0.17	0.18	0.15	0.19 U	0.19	0.67	0.17	0.96	0.22
Thallium	2	0.21 U	0.21	0.19 U	0.19	0.23 U	0.23	0.21 U	0.21	0.27 U	0.27
Vanadium	370	28.0	0.38	28.4	0.46	32.9	0.36	37.6	0.35	43.5	0.53
Zinc	1500	19.1	0.38	25.3	0.46	30.8	0.36	93.0	0.35	42.1	0.53
Cyanide	1100	0.48 U	0.48	0.45 U	0.45						
Dilution Factor		* = 10.0		* = 10.0				* = 20.0		* = 5.00	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		M18-SB06-A02		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02	
Sample Type											
Batch#		9501G587		9501G632		9501G632		9501G632		9501G632	
Prep#		95GTS013		95GTS038		95GTS038		95GTS038		95GTS038	
RFW#		006		003		004		005		006	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/11/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date		1/13/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		72.1	0.10	86.0	0.10	84.0	0.10	87.6	0.10	80.5	0.10
Silver	110	0.57 U	0.57								
Aluminum		6130	3.9								
Arsenic	20	5.8	0.44								
Barium	700	31.0	0.18								
Beryllium	1	0.07 U	0.07								
Calcium		11100	1.9								
Cadmium	1	0.66 U	0.66								
Cobalt		6.3	0.53								
Chromium		35.3	1.1								
Copper	600	218	0.92								
Iron		17700	0.57								
Mercury	14	0.61	0.11								
Potassium		2190	15.6								
Magnesium		3380	7.9								
Manganese		168	0.21								
Sodium		181	4.4								
Nickel	250	12.6	0.96								
Lead	400	127	4.6 *								
Antimony	14	2.5 U	2.5								
Selenium	63	0.78	0.35								
Thallium	2	0.16 U	0.16								
Vanadium	370	27.3	0.48								
Zinc	1500	72.6	0.44								
Cyanide	1100										
Dilution Factor		* = 20.0									
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-SB03-A01		MP18-SB03-A02		MP18-SB07-A01		MP18-SB24-A01		MP18-SB24-A02	
Sample Type											
Batch#		9501G632		9501G632		9501G632		9501G632		9501G632	
Prep#		95GTS038		95GTS038		95GTS038		95GTS038		95GTS038	
RFW#		007		008		009		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.1	0.10	85.0	0.10	87.7	0.10	86.3	0.10	80.8	0.10
Silver	110										
Aluminum											
Arsenic	20										
Barium	700										
Beryllium	1										
Calcium											
Cadmium	1										
Cobalt											
Chromium											
Copper	600										
Iron											
Mercury	14										
Potassium											
Magnesium											
Manganese											
Sodium											
Nickel	250										
Lead	400										
Antimony	14										
Selenium	63										
Thallium	2										
Vanadium	370										
Zinc	1500										
Cyanide	1100										
Dilution Factor											
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-SB25-A01		MP18-SB25-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01	
Sample Type											
Batch#		9501GG656		9501GG656		9501G587		9501G587		9501G587	
Prep#		95GTS038		95GTS038		95GTS013		95GTS013		95GTS013	
RFW#		001		002		003		004		001	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/13/95		1/13/95		1/11/95		1/11/95		1/11/95	
Analysis Date		1/30/95		1/30/95		1/13/95		1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.0	0.10	88.4	0.10	92.7	0.10	90.8	0.10	87.4	0.10
Silver	110										
Aluminum											
Arsenic	20										
Barium	700										
Beryllium	1										
Calcium											
Cadmium	1										
Cobalt											
Chromium											
Copper	600										
Iron											
Mercury	14										
Potassium											
Magnesium											
Manganese											
Sodium											
Nickel	250										
Lead	400										
Antimony	14										
Selenium	63										
Thallium	2										
Vanadium	370										
Zinc	1500										
Cyanide	1100										
Dilution Factor											
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		B1		B1	
Sample		M18-SB05-A02		M18-SB06-A01		MP18-MW03-A01		B1-SB01-A01		B1-SB01-A02	
Sample Type											
Batch#		9501G587		9501G587		9505G825		9512G527		9512G527	
Prep#		95GTS013		95GTS013		95GI713		95GTS007		95GTS007	
RFW#		002		005		006		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/11/95		1/11/95		5/10/95		1/9/95		1/9/95	
Analysis Date		1/13/95		1/13/95		5/24/95		1/11/95		1/11/95	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		79.8	0.10	87.0	0.10	85.9	0.10	88.0	0.10	79.0	0.10
Silver	110							0.51 U	0.51	0.53 U	0.53
Aluminum								4780	3.4	4680	3.5
Arsenic	20							5.8	0.31	4.7	0.32
Barium	700							6.5	0.16	6.3	0.17
Beryllium	1							0.54	0.061	0.75	0.063
Calcium								170	1.7	96.1	1.8
Cadmium	1							0.59 U	0.59	0.61 U	0.61
Cobalt								0.79	0.47	1.4	0.49
Chromium								64.6	0.96	84.8	0.99
Copper	600							2.0	0.82	2.0	0.84
Iron								14700	0.51	17400	0.53
Mercury	14							0.095 U	0.095	0.094 U	0.094
Potassium								3110	13.9	2730	14.3
Magnesium								1130	7.0	1070	7.2
Manganese								9.4	0.18	8.2	0.19
Sodium								15.1	3.9	12.6	4.0
Nickel	250							2.0	0.86	3.2	0.89
Lead	400							7.7	0.54 *	8.4	0.56 *
Antimony	14							2.2 U	2.2	2.3 U	2.3
Selenium	63							0.17 U	0.17	0.18 U	0.18
Thallium	2							0.21 U	0.21	0.22 U	0.22
Vanadium	370							43.9	0.43	94.1	0.44
Zinc	1500							20.2	0.39	19.6	0.40
Cyanide	1100					0.53 U	0.53	0.32 U	0.32	0.63 U	0.63
Dilution Factor								* = 2.00		* = 2.00	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		B2		B2		B3		B3		B4	
Sample		B2-SB01-A01		B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01	
Sample Type											
Batch#		9501G500		9501G500		9501G500		9501G500		9512G527	
Prep#		95GTS007		95GTS007		95GTS007		95GTS007		95GTS007	
RFW#		001		002		003		004		003	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/6/95		1/6/95		1/6/95		1/6/95		1/9/95	
Analysis Date		1/10/95		1/10/95		1/10/95		1/10/95		1/11/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		81.2	0.10	80.1	0.10	88.1	0.1	73.3	0.10	88.8	0.10
Silver	110	0.88	0.64	0.86	0.66	0.73	0.59	1.1	0.70	0.52 U	0.52
Aluminum		9900	0.55	12700	5.7	7630	5.1	15200	6.0	4290	3.5
Arsenic	20	21.7	3.2 *	22.9	3.3 *	6.2	0.60 *	9.8	0.72 *	4.5	0.32
Barium	700	23.7	0.43	20.1	0.45	28.0	0.40	26.0	0.47	22.7	0.17
Beryllium	1	0.99	0.31	1.4	0.32	0.78	0.29	2.0	0.34	0.53	0.063
Calcium		427	2.5	343	2.6	921	2.3	511	2.7	642	1.8
Cadmium	1	0.57 U	0.57	0.60 U	0.60	0.53 U	0.53	0.63 U	0.63	0.60 U	0.60
Cobalt		1.6	0.55	1.1	0.58	1.0	0.52	0.97	0.61	0.98	0.48
Chromium		109	0.62	154	0.64	48.4	0.57	269	0.68	39.9	0.98
Copper	600	6.4	0.47	5.7	0.49	4.1	0.44	7.8	0.52	4.0	0.83
Iron		36800	0.96	39800	1.0	19700	0.90	55800	1.1	12900	0.52
Mercury	14	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11	0.13 U	0.13	0.11 U	0.11
Potassium		5840	169	9290	175	3090	157	15400	185	2580	14.2
Magnesium		3030	5.0	4400	5.2	1920	4.7	7320	5.5	1290	7.2
Manganese		34.2	0.41	29.9	0.43	90.7	0.38	9.9	0.45	18.4	0.19
Sodium		24.9	3.2	23.8	3.3	22.3	2.9	51.6	3.5	18.7	4.0
Nickel	250	8.4	2.6	5.5	2.7	5.1	2.4	6.6	2.9	2.8	0.88
Lead	400	6.8	0.20	5.9	0.21	15.2	0.94 **	4.2	0.23	19.5	2.8 *
Antimony	14	4.4 U	4.4	4.6 U	4.6	4.1 U	4.1	4.8 U	4.8	2.3 U	2.3
Selenium	63	1.8	0.18	1.7	0.19	0.64	0.17	1.9	0.20	0.25	0.18
Thallium	2	0.22 U	0.22	0.23 U	0.23	0.21 U	0.21	0.25 U	0.25	0.22 U	0.22
Vanadium	370	39.4	0.60	53.9	0.62	29.1	0.55	50.3	0.65	19.9	0.44
Zinc	1500	39.9	0.57	39.1	0.60	35.0	0.53	81.4	0.63	24.1	0.40
Cyanide	1100	0.51 U	0.51	0.39 U	0.39	0.35 U	0.35	0.59 U	0.59	0.35 U	0.35
Dilution Factor		* = 10.0		* = 10.0		* = 2.00, ** = 5.00		* = 2.00		* = 10.0	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		B4		B4		B5		B5	
Sample		B4-SB01-A02		B4-SB01-C01		B5-SB01-A01		B5-SB01-A02	
Sample Type				Duplicate					
Batch#		9512G527		9512G527		9501G587		9501G587	
Prep#		95GTS007		95GTS007		95GTS013		95GTS013	
RFW#		004		005		007		008	
Sample Depth (bgs)									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/9/95		1/9/95		1/11/95		1/11/95	
Analysis Date		1/11/95		1/11/95		1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		74.3	0.10	89.3	0.10	84.4	0.10	83.1	0.10
Silver	110	0.45 U	0.45	0.47 U	0.47	0.49 U	0.49	0.50 U	0.50
Aluminum		11700	3.1	4570	3.2	8020	3.3	8450	3.3
Arsenic	20	10	0.72 *	3.7	0.27	7.4	0.74 *	8.0	{0.76}
Barium	700	32.3	0.15	21.9	0.15	28.3	0.16	21.7	0.16
Beryllium	1	1.7	0.055	0.53	0.056	0.76	0.059	0.89	0.060
Calcium		104	1.5	601	1.6	738	1.7	517	1.7
Cadmium	1	0.53 U	0.53	0.55 U	0.55	0.57 U	0.57	0.58 U	0.58
Cobalt		2.5	0.42	0.58	0.43	2	0.45	1.5	0.46
Chromium		143	0.85	42.8	0.88	54.8	0.93	80.4	0.93
Copper	600	8.0	0.73	2.7	0.75	6.2	0.79	3.4	0.80
Iron		41400	0.45	13800	0.47	21200	0.49	25700	0.50
Mercury	14	0.13 U	0.13	0.083 U	0.083	0.09 U	0.09	0.09 U	0.09
Potassium		11800	12.4	2940	12.8	3770	13.4	3990	13.5
Magnesium		5430	6.2	1440	6.5	1840	6.8	1880	6.8
Manganese		9.5	0.16	16.7	0.17	46	0.18	14.0	0.18
Sodium		40.5	3.5	13.7	3.6	33.9	3.8	22.9	3.8
Nickel	250	5.0	0.76	2.4	0.79	3.7	0.83	3.5	0.84
Lead	400	3.8	0.32	9.7	1.2 *	19.0	2.0 **	5.7	0.20
Antimony	14	2.0 U	2.0	2.1 U	2.1	2.2 U	2.2	2.2 U	2.2
Selenium	63	0.20 U	0.20	0.28	0.15	0.67	0.29	1.2	0.30
Thallium	2	0.25 U	0.25	0.18 U	0.18	0.14 U	0.14	0.14 U	0.14
Vanadium	370	23.7	0.38	19.0	0.40	35.1	0.41	46.9	0.42
Zinc	1500	60.2	0.35	24.0	0.36	38.1	0.38	30.3	0.38
Cyanide	1100	0.45 U	0.45	0.49 U	0.49	0.35 U	0.35	0.39 U	0.39
Dilution Factor		* = 2.00		* = 5.00		* = 2.00, ** = 10.0		* = 2.00	
Method:TAL Metals, Cyanide									

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M16		M16	
Sample		MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MPA3-SB02-A02DL		MP16-SB01-A01		MP16-SB01-A01DL	
Sample Type				Duplicate									
Batch#		9412G130		9412G130		9401G155		9401G155		9401G155		9401G155	
Prep#		94GP1090		94GP1090		94GP1090		94GP1090		94GP1090		94GP1090	
RFW#		001		002		003		003		001		001DL	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		10.0		10.0		100	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/14/94		12/14/94		12/15/94		12/15/94		12/15/94		12/15/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
beta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
delta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
gamma-BHC (Lindane)	0.52	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Heptachlor	0.15	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Aldrin	0.04	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Heptachlor epoxide		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Endosulfan I	340	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Dieldrin	0.042	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.12	0.038	0.38 U	0.38
4,4'-DDE	2	0.044	0.0037	0.011	0.0036	0.022	0.0035	0.035 U	0.035	1 C	0.038	0.65 CD	0.38
Endrin	17	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
Endosulfan II	340	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
4,4'-DDD	3	0.024	0.0037	0.0097	0.0036	0.016	0.0035	0.035 U	0.035	1.5 C	0.038	1.1 CD	0.38
Endosulfan sulfate		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.04 U	0.038	0.38 U	0.38
4,4'-DDT	2	0.035 P	0.0037	0.017	0.0036	0.085	0.0035	.073 P	0.035	0.71 C	0.038	.62 D	0.38
Methoxychlor	280	0.018 U	0.018	0.018 U	0.018	0.02 U	0.017	0.17 U	0.17	0.19 U	0.19	1.9 U	0.38
Endrin ketone		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
Endrin aldehyde		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
alpha-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0052	0.0017	0.017 U	0.017	0.042	0.019	0.19 U	0.19
gamma-Chlordane		0.0018 U	0.0018	0.0014 JP	0.0018	0.0035 P	0.0017	0.017 U	0.017	0.033 P	0.019	0.19 U	0.19
Toxaphene	0.1	0.18 U	0.18	0.18 U	0.18	0.17 U	0.17	1.7 U	1.7	1.9 U	1.9	19 U	19
Aroclor-1016	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1221	0.49	0.073 U	0.073	0.072 U	0.072	0.07 U	0.07	0.7 U	0.7	0.77 U	0.77	7.7 U	7.7
Aroclor-1232	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1242	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1248	0.49	0.037 U	0.037	0.036 U	0.036	0.2 P	0.035	.25 JDP	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1254	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1260	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		M16		M16		M18		M18		B1		B1	
Sample		MP16-SB01-A02		MP16-SB01-A02DL		M18-SB06-A02		M18-SB06-A02DL		B1-SB01-A01		B1-SB01-A02	
Sample Type													
Batch#		9401G155		9401G155		9501G587		9501G587		9501G527		9501G527	
Prep#		94GP1090		94GP1090		95GP0050		95GP0050		95GP0028		95GP0028	
RFW#		002		002DL		006		006DL		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		10.0		1.00		10.0		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/15/94		1/11/95		1/11/95		1/9/95		1/9/95	
Analysis Date		1/3/95		1/3/95		2/2/95		2/2/95		1/18/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
beta-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
delta-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
gamma-BHC (Lindane)	0.52	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Heptachlor	0.15	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Aldrin	0.04	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Heptachlor epoxide		0.0021 U	0.0021	0.021 U	0.021	0.03 P	0.0023	.038 DP	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Endosulfan I	340	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Dieldrin	0.042	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDE	2	0.1	0.0042	.07 D	0.042	0.11	0.0046	.077 D	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endrin	17	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endosulfan II	340	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDD	3	0.2	0.0042	.16 D	0.042	0.46 UX	0.0046	4.6 UX	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endosulfan sulfate		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDT	2	0.072	0.0042	.063 D	0.042	0.032	0.0046	.038 JDP	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Methoxychlor	280	0.021 U	0.021	0.21 U	0.21	0.023 U	0.023	0.23 U	0.23	0.019 U	0.019	0.021 U	0.021
Endrin ketone		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endrin aldehyde		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
alpha-Chlordane		0.0096	0.0021	0.021 U	0.021	0.0078	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
gamma-Chlordane		0.0088 P	0.0021	0.021 U	0.021	0.02 P	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Toxaphene	0.1	0.21 U	0.21	2.1 U	2.1	0.23 U	0.23	2.3 U	2.3	0.19 U	0.19	0.21 U	0.21
Aroclor-1016	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1221	0.49	0.083 U	0.083	0.83 U	0.83	0.092 U	0.092	0.92 U	0.92	0.076 U	0.076	0.084 U	0.084
Aroclor-1232	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1242	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1248	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1254	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1260	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		B2		B2		B3		B3		B4		B4	
Sample		B2-SB01-A01		B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01DL	
Sample Type													
Batch#		9501G500		9501G500		9501G500		9501G500		9501G527		9501G527	
Prep#		95GP0028		95GP0028		95GP0028		95GP0028		95GP0028		95GP0028	
RFW#		001		002		003		004		003		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		10.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/6/95		1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date		1/18/95		1/18/95		1/18/95		1/18/95		1/18/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
beta-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
delta-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
gamma-BHC (Lindane)	0.52	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Heptachlor	0.15	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Aldrin	0.04	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Heptachlor epoxide		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.037 U	0.037
Endosulfan I	340	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.037 U	0.037
Dieldrin	0.042	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDE	2	0.004 U	0.004	0.0041 U	0.0041	0.0048 P	0.0037	0.0045 U	0.0045	0.086 P	0.0037	.097 D	0.037
Endrin	17	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
Endosulfan II	340	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDD	3	0.0028 JP	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0096 P	0.0037	0.037 U	0.037
Endosulfan sulfate		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDT	2	0.0028 JP	0.004	0.0041 U	0.0041	0.0033 JP	0.0037	0.0045 U	0.0045	0.1 P	0.0037	.11 D	0.037
Methoxychlor	280	0.02 U	0.02	0.02 U	0.02	0.018 U	0.018	0.023 U	0.023	0.018 U	0.018	0.18 U	0.18
Endrin ketone		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
Endrin aldehyde		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
alpha-Chlordane		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
gamma-Chlordane		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Toxaphene	0.1	0.2 U	0.2	0.2 U	0.2	0.18 U	0.18	0.23 U	0.23	0.18 U	0.18	1.8 U	1.8
Aroclor-1016	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1221	0.49	0.08 U	0.08	0.082 U	0.082	0.07 U	0.074	0.09 U	0.09	0.074 U	0.074	0.74 U	0.74
Aroclor-1232	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1242	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1248	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1254	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1260	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		B4		B4		B4		B5		B5	
Sample		B4-SB01-A02		B4-SB01-C01		B4-SB01-C01DL		B5-SB01-A01		B5-SB01-A02	
Sample Type				Duplicate		Duplicate					
Batch#		9501G527		9501G527		9501G527		9501G587		9501G587	
Prep#		95GP0028		95GP0028		95GP0028		95GP0050		95GP0050	
RFW#		004		005		005		007		008	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		5.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/9/95		1/9/95		1/9/95		1/11/95		1/11/95	
Analysis Date		1/18/95		1/18/95		1/18/95		2/3/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
beta-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
delta-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
gamma-BHC (Lindane)	0.52	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Heptachlor	0.15	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Aldrin	0.04	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Heptachlor epoxide		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Endosulfan I	340	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Dieldrin	0.042	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDE	2	0.0044 U	0.0044	0.072 P	0.0037	.085 D	0.018	0.028	0.0039	0.004 U	0.004
Endrin	17	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endosulfan II	340	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDD	3	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endosulfan sulfate		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDT	2	0.0044 U	0.0044	0.078 P	0.0037	.092 DP	0.018	0.043	0.0039	0.004 U	0.004
Methoxychlor	280	0.022 U	0.022	0.018 U	0.018	0.092 U	0.092	0.02 U	0.02	0.02 U	0.02
Endrin ketone		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endrin aldehyde		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
alpha-Chlordane		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
gamma-Chlordane		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Toxaphene	0.1	0.22 U	0.22	0.18 U	0.18	0.92 U	0.92	0.2 U	0.2	0.2 U	0.2
Aroclor-1016	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1221	0.49	0.087 U	0.087	0.074 U	0.074	0.37 U	0.37	0.078 U	0.078	0.079 U	0.079
Aroclor-1232	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1242	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1248	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1254	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1260	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M2		M2		M2		M2		M2		M2		M3	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01		MP02-MW03-A02		MP03-MW04-A01	
Sample Type																
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197		9503G642		9502G219	
Prep#			95GVC034		95GVC054		95GVF029		95GVC054		95GVF029		95GVC054		95GVC030	
RFW#			001		001		003		003		005		005		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95		3/8/95		2/16/95	
Analysis Date			2/22/95		3/10/95		2/20/95		3/10/95		2/21/95		3/10/95		2/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	25	10	33	10	25	10	10	10	10	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.					20 J		10 J		20 J							
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M3		M3		M3		M3		M3		M4		M4	
Sample			MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01		MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02	
Sample Type																
Batch#			9503G642		9502G219		9503G660		9502G219		9503G660		9502G219		9503G660	
Prep#			95GVC054		95GVC030		95GVC055		95GVC030		95GVC055		95GVC030		95GVC055	
RFW#			009		003		003		005		001		007		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95		3/9/95	
Analysis Date			3/10/95		2/21/95		3/10/95		2/21/95		3/10/95		2/21/95		3/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	4 J	10	10 U	10	3 J	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	5 J	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.					30 J		30 J		30 J		30 J					
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M4		M4		M4		M4		M4		M4		M4	
Sample			MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-D01		MP04-MW07-E01		MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01	
Sample Type			Duplicate		Duplicate		Trip Blank		Field Rinsate Blank							
Batch#			9502G219		9503G660		9502G219		9502G219		9502G219		9503G642		9502G219	
Prep#			95GVC030		95GVC055		95GVC030		95GVC031		95GVC031		95GVC054		95GVC031	
RFW#			009		007		011		012		014		007		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/9/95		2/16/95		2/16/95		2/16/95		3/8/95		2/16/95	
Analysis Date			2/21/95		3/10/95		2/21/95		2/21/95		2/21/95		3/10/95		2/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	13	10	10	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	27	10	27	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M4		M5		M5		M5		M5		M5		M5	
Sample			MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02		MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-D02		MP05-MW11-E02	
Sample Type													Trip Blank		Field Rinsate Blank	
Batch#			9503G660		9502G238		9503G660		9502G238		9503G660		9503G660		9503G660	
Prep#			95GVC055		95GVC032		95GVC055		95GVC032		95GVC055		95GVC055		95GVC055	
RFW#			009		010		011		012		013		015		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/17/95		3/9/95		2/17/95		3/9/95		3/9/95		3/9/95	
Analysis Date			3/11/95		2/22/95		3/11/95		2/22/95		3/11/95		3/11/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	33	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	130	10	88	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M8		M8		M8		M8		M8	
Sample			MP08-MW12-A01		MP08-MW12-A02		MP08-MW12-C02		MP08-MW12-D02		MP08-MW12-E02		MP08-MW13-A01	
Sample Type							Duplicate		Trip Blank		Field Rinsate Blank			
Batch#			9502G238		9503G767		9503G767		9503G767		9503G767		9502G403	
Prep#			95GVC033		95GVE072		95GVE072		95GVE072		95GVE072		95GVC041	
RFW#			014		001		003		005		006		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/15/95		3/15/95		3/15/95		3/15/95		2/22/95	
Analysis Date			2/22/95		3/20/95		3/20/95		3/20/95		3/20/95		3/1/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	40	10	52	10	54	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M8		M8		M8		M8		M8		M8	
Sample			MP08-MW13-A02		MP08-MW14-A01		MP08-MW14-A02		MP08-MW15-A01		MP08-MW15-A02		MP08-MW15-C01		MP08-MW15-D01	
Sample Type													Duplicate		Trip Blank	
Batch#			9503G767		9502G219		9503G767		9502G403		9503G767		9502G403		9502G403	
Prep#			95GVE072		95GVC031		95GVE072		95GVC041		95GVE072		95GVC042		95GVC042	
RFW#			008		018		010		003		012		005		007	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		2/16/95		3/15/95		2/22/95		3/15/95		2/22/95		2/22/95	
Analysis Date			3/21/95		2/21/95		3/20/95		3/1/95		3/20/95		3/1/95		3/1/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	20	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	37	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	3 J	10	5 J	10	4 J	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	8 J	10	33	10	39	10	36	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.							5 J		10 J		15 J		10 J			
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M12		M12		M12		M12		M12		M12	
Sample			MP08-MW15-E01		MP12-MW16-A01		MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A02		MP12-MW18-A01		MP12-MW18-A02	
Sample Type			Field Rinsate Blank													
Batch#			9502G403		9502G299		9503G681		9502G299		9503G681		9502G299		9503G681	
Prep#			95GVC042		95GVC034		95GVE063		95GVC034		95GVE063		95GVC034		95GVE063	
RFW#			008		001		001		003		003		005		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/20/95		3/10/95		2/20/95		3/10/95		2/20/95		3/10/95	
Analysis Date			3/1/95		2/23/95		3/14/95		2/23/95		3/14/95		2/23/95		3/14/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	38	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M14		M14		M14		M14		M14		M14	
Sample			MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02		MP14-MW20-D02		MP14-MW20-E02	
Sample Type											Trip Blank		Field Rinsate Blank	
Batch#			9502G299		9503G681		9502G403		9503G722		9503G767		9503G722	
Prep#			95GVC034		95GVE063		95GVC042		95GVE071		95GVE072		95GVE071	
RFW#			007		007		010		1		014		3	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/20/95		3/10/95		2/22/95		3/13/95		3/15/95		3/13/95	
Analysis Date			2/23/95		3/14/95		3/1/95		3/19/95		3/21/95		3/19/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M14		M14		M16		M16		M18		M18		M18	
Sample			MP14-MW21-A01		MP14-MW21-A02		MP16-MW22-A01		MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-A02		MP18-MW03-D01	
Sample Type															Trip Blank	
Batch#			9502G403		9503G660		9502G238		9503G660		9505G825		9505G139		9505G825	
Prep#			95GVC042		95GVC055		95GVC033		95GVC055		95GVC137		95GVB148		95GVC137	
RFW#			012		019		016		018		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		3/9/95		2/17/95		3/9/95		5/10/95		5/27/95		5/10/95	
Analysis Date			3/1/95		3/11/95		2/22/95		3/11/95		5/20/95		6/1/95		5/20/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW03-E01		MP18-MW24-A01		MP18-MW24-A02		MP18-MW24-C02		MP18-MW24-D01		MP18-MW24-D02	
Sample Type			Field Rinsate Blank						Duplicate		Trip Blank		Trip Blank	
Batch#			9505G825		9502G238		9503G681		9503G681		9502G238		9503G681	
Prep#			95GVC137		95GVC032		95GVE063		95GVE063		95GVC031		95GVE063	
RFW#			004		001		009		011		003		013	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		2/17/95		3/10/95		3/10/95		2/17/95		3/10/95	
Analysis Date			5/20/95		2/21/95		3/14/95		3/14/95		2/21/95		3/14/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	12	10	7 J	10	8 J	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	23	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M18		M18		M18		M18		M18		B1	
Sample			MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02		MP18-MW25-C01		B1-MW01B-A01	
Sample Type			Field Rinsate Blank		Field Rinsate Blank						Duplicate			
Batch#			9502G238		9503G681		9502G238		9503G681		9502G238		9502G169	
Prep#			95GVC031		95GVE063		95GVC031		95GVE063		95GVC032		95GVC028	
RFW#			004		014		006		016		008		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/10/95		2/17/95		3/10/95		2/17/95		2/14/95	
Analysis Date			2/21/95		3/14/95		2/21/95		3/14/95		2/22/95		2/19/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10	10	15	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	21	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			B1		B2		B2		B3		B3		B3		B3	
Sample			B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01		B3-MW03B-A02		B3-MW03B-D01		B3-MW03B-D02	
Sample Type													Trip Blank		Trip Blank	
Batch#			9503G616		9502G169		9503G616		9502G169		9503G740		9502G169		9503G616	
Prep#			95GVC053		95GVC028		95GVC053		95GVC028		95GVE072		95GVC028		95GVC053	
RFW#			008		003		010		005		001		007		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/7/95		2/14/95		3/7/95		2/14/95		3/14/95		2/13/95		3/7/95	
Analysis Date			3/10/95		2/19/95		3/10/95		2/19/95		3/20/95		2/19/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	15	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			B3		B3		B4		B4		B5		B5	
Sample			B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02		B5-MW05B-A01		B5-MW05B-A02	
Sample Type			Field Rinsate Blank		Field Rinsate Blank									
Batch#			9502G169		9503G616		9502G169		9503G616		9502G169		9503G616	
Prep#			95GVC028		95GVC053		95GVC028		95GVC053		95GVC028		95GVC053	
RFW#			008		006		010		012		012		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/13/95		3/7/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			2/19/95		3/9/95		2/19/95		3/10/95		2/19/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	17	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	8 J	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M2		M2		M2		M2	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01	
Sample Type												
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172		95GB0108	
RFW#			001		001		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95	
Analysis Date			3/4/95		3/24/95		3/4/95		3/24/95		3/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	4 J	10	2 J	10	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	3 J	10	10 U	10	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	1 J	10	10 U	10	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	2 J	10	2 J	10	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Nitroaniline		6.1	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
3-Nitroaniline		5.2	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M2		M2		M2		M2	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01	
Sample Type												
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172		95GB0108	
RFW#			001		001		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95	
Analysis Date			3/4/95		3/24/95		3/4/95		3/24/95		3/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Diethylphthalate	5000	5.4	1 J	10	1 JB	10	1 J	10	1 JB	10	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Nitroaniline		6.4	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
4,6-Dinitro-2-methylphenol		5.3	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Pentachlorophenol	1	4.0	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	2 J	10	1 J	10	10 U	10	10 U	10	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			47				63				9	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M3		M3		M3		M3		M3	
Sample			MP02-MW03-A02		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01	
Sample Type														
Batch#			9503G642		9502G219		9503G642		9502G219		9503G660		9502G219	
Prep#			95GB0172		95GB0111		95GB0172		95GB0111		95GB0174		95GB0111	
RFW#			005		001		009		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/24/95		3/7/95		3/24/95		3/8/95		3/25/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	3 J	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	1 J	10	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	2 J	10	1 J	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Nitroaniline		6.1	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
3-Nitroaniline		5.2	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	2 J	10	2 J	10	10 U	10
2,4-Dinitrophenol	40	4.6	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M3		M3		M3		M3		M3	
Sample			MP02-MW03-A02		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01	
Sample Type														
Batch#			9503G642		9502G219		9503G642		9502G219		9503G660		9502G219	
Prep#			95GB0172		95GB0111		95GB0172		95GB0111		95GB0174		95GB0111	
RFW#			005		001		009		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/24/95		3/7/95		3/24/95		3/8/95		3/25/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Diethylphthalate	5000	5.4	10 U	10	11 U	11	1 JB	11	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	2 J	10	1 J	10	10 U	10
4-Nitroaniline		6.4	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
4,6-Dinitro-2-methylphenol		5.3	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Pentachlorophenol	1	4.0	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	3 J	10	3 J	10	10 U	10
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	10 U	10	1 J	10	10 U	10
Carbazole		4.4	10 U	10	11 U	11	11 U	11	1 J	10	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	10 U	10	1 J	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	3 J	10
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Petroleum hydrocarbons														
Total Est. Conc. of TIC					4 J				38 J		43 J		18 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M3		M4		M4		M4		M4		M4	
Sample			MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01	
Sample Type									Duplicate		Duplicate		Field Rinsate Blank	
Batch#			9503G660		9502G219		9503G660		9502G219		9503G660		9502G219	
Prep#			95GB0174		95GB0111		95GB0174		95GB0111		95GB0174		95GB0111	
RFW#			001		007		005		009		007		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/25/95		3/9/95		3/25/95		3/8/95		3/26/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Nitroaniline		6.1	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
3-Nitroaniline		5.2	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M3		M4		M4		M4		M4		M4	
Sample			MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01	
Sample Type									Duplicate		Duplicate		Field Rinsate Blank	
Batch#			9503G660		9502G219		9503G660		9502G219		9503G660		9502G219	
Prep#			95GB0174		95GB0111		95GB0174		95GB0111		95GB0174		95GB0111	
RFW#			001		007		005		009		007		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/25/95		3/9/95		3/25/95		3/8/95		3/26/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Nitroaniline		6.4	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Pentachlorophenol	1	4.0	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Petroleum hydrocarbons														
Total Est. Conc. of TIC			17 J						2 JA				11 JA	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M4		M4		M4		M4		M5		M5	
Sample			MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02	
Sample Type														
Batch#			9502G219		9503G642		9502G219		9503G660		9502G238		9503G660	
Prep#			95GB0111		95GB0172		95GB0111		95GB0174		95GB0112		95GB0174	
RFW#			014		007		016		009		010		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95	
Analysis Date			3/9/95		3/24/95		3/9/95		3/26/95		2/27/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M4		M4		M4		M4		M5		M5	
Sample			MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02	
Sample Type														
Batch#			9502G219		9503G642		9502G219		9503G660		9502G238		9503G660	
Prep#			95GB0111		95GB0172		95GB0111		95GB0174		95GB0112		95GB0174	
RFW#			014		007		016		009		010		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95	
Analysis Date			3/9/95		3/24/95		3/9/95		3/26/95		2/27/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	2 JB	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Carbazole		4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	3 J	11	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Petroleum hydrocarbons														
Total Est. Conc. of TIC			5 J				4 J				4 J		8 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M5		M5		M5		M8		M8	
Sample			MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02	
Sample Type							Field Rinsate Blank					
Batch#			9502G238		9503G660		9503G660		9502G238		9503G767	
Prep#			95GB0112		95GB0174		95GB0174		95GB0112		95GP0263	
RFW#			012		013		016		014		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/9/95		3/9/95		2/17/95		3/15/95	
Analysis Date			2/27/95		3/26/95		3/27/95		2/28/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
2-Chloronaphthalene		8.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Acenaphthene	400	6.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M5		M5		M5		M8		M8	
Sample			MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02	
Sample Type							Field Rinsate Blank					
Batch#			9502G238		9503G660		9503G660		9502G238		9503G767	
Prep#			95GB0112		95GB0174		95GB0174		95GB0112		95GP0263	
RFW#			012		013		016		014		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/9/95		3/9/95		2/17/95		3/15/95	
Analysis Date			2/27/95		3/26/95		3/27/95		2/28/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Dibenzofuran		6.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Phenanthrene	10	5.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Carbazole		4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	10	12 U	12	10 U	10	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			35 J		37 J		9 J		18 J		20 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW12-C02		MP08-MW12-E02		MP08-MW13-A01		MP08-MW13-A01RE		MP08-MW13-A02	
Sample Type			Duplicate		Field Rinsate Blank							
Batch#			9503G767		9503G767		9502G403		9502G403		9503G767	
Prep#			95GP0263		95GP0263		95GB0129		95GB0129		95GP0263	
RFW#			003		006		001		001 RE		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		3/15/95		2/22/95		2/22/95		3/15/95	
Analysis Date			4/15/95		4/15/95		3/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW12-C02		MP08-MW12-E02		MP08-MW13-A01		MP08-MW13-A01RE		MP08-MW13-A02	
Sample Type			Duplicate		Field Rinsate Blank							
Batch#			9503G767		9503G767		9502G403		9502G403		9503G767	
Prep#			95GP0263		95GP0263		95GB0129		95GB0129		95GP0263	
RFW#			003		006		001		001 RE		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		3/15/95		2/22/95		2/22/95		3/15/95	
Analysis Date			4/15/95		4/15/95		3/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	2 J	10	2 JB	11	1 JB	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			22 J		10 J		17 JA		20 JA			
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW14-A01		MP08-MW14-A02		MP08-MW14-A02RE		MP08-MW15-A01		MP08-MW15-A02	
Sample Type												
Batch#			9502G219		9503G767		9503G767		9502G403		9503G767	
Prep#			95GB0111		95GP0263		95GP0263		95GB0129		95GP0263	
RFW#			018		010		010		003		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/15/95		3/15/95		2/22/95		3/15/95	
Analysis Date			3/13/95		4/15/95		4/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	3 J	10	3 J	10	3 J	10	2 J	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	5 J	11	4 J	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	1 J	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	1 J	10	1 J	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylnaphthalene		8.7	1 J	10	1 J	10	10 U	10	2 J	11	1 J	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitroaniline		6.1	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3-Nitroaniline		5.2	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Acenaphthene	400	6.7	2 J	10	2 J	10	2 J	10	17	11	14	12
2,4-Dinitrophenol	40	4.6	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW14-A01		MP08-MW14-A02		MP08-MW14-A02RE		MP08-MW15-A01		MP08-MW15-A02	
Sample Type												
Batch#			9502G219		9503G767		9503G767		9502G403		9503G767	
Prep#			95GB0111		95GP0263		95GP0263		95GB0129		95GP0263	
RFW#			018		010		010		003		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/15/95		3/15/95		2/22/95		3/15/95	
Analysis Date			3/13/95		4/15/95		4/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	7 J	11	5 J	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	9 J	11	7 J	12
4-Nitroaniline		6.4	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pentachlorophenol	1	4.0	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	1 J	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	1 JB	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			143 J		142 J		170 J		205 JA		89 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M12	
Sample			MP08-MW15-C01		MP08-MW15-C01RE		MP08-MW15-E01		MP08-MW15-E01RE		MP12-MW16-A01	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank			
Batch#			9502G403		9502G403		9502G403		9502G403		9502G299	
Prep#			95GB0129		95GB0129		95GB0129		95GB0129		95GB0118	
RFW#			005		005 RE		008		008 RE		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/22/95		2/22/95		2/22/95		2/20/95	
Analysis Date			3/16/95		3/16/95		3/16/95		3/16/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Chlorophenol	40	7.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
1,3-Dichlorobenzene	600	5.3	2 J	10	2 J	10	12 U	12	12 U	12	11 U	11
1,4-Dichlorobenzene	75	4.8	4 J	10	5 J	10	12 U	12	12 U	12	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	1 J	10	12 U	12	12 U	12	11 U	11
2-Methylphenol		6.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Methylphenol		12.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachloroethane	10	5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Nitrobenzene	10	7.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Isophorone	100	3.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Nitrophenol		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Naphthalene		8.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chloroaniline		2.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Methylnaphthalene		8.7	10 U	10	2 J	10	12 U	12	12 U	12	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
2-Chloronaphthalene		8.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Acenaphthylene	10	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Acenaphthene	400	6.7	16	10	14	10	12 U	12	12 U	12	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M12	
Sample			MP08-MW15-C01		MP08-MW15-C01RE		MP08-MW15-E01		MP08-MW15-E01RE		MP12-MW16-A01	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank			
Batch#			9502G403		9502G403		9502G403		9502G403		9502G299	
Prep#			95GB0129		95GB0129		95GB0129		95GB0129		95GB0118	
RFW#			005		005 RE		008		008 RE		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/22/95		2/22/95		2/22/95		2/20/95	
Analysis Date			3/16/95		3/16/95		3/16/95		3/16/95		3/11/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result	
4-Nitrophenol		7.5	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Dibenzofuran		6.5	6 J	10	6 J	10	12 U	12	12 U	12	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Diethylphthalate	5000	5.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Fluorene	300	6.3	8 J	10	8 J	10	12 U	12	12 U	12	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Phenanthrene	10	5.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Anthracene	2000	4.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Carbazole		4.4	1 J	10	1 J	10	12 U	12	12 U	12	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Fluoranthene	300	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Pyrene	200	5.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Chrysene	20	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	1 JB	10	10 U	10	3 JB	12	3 JB	12	4 J	11
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			189 J		143 J		17 JA		15 JA		8 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M12		M12		M12		M12	
Sample			MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A01RE		MP12-MW17-A02		MP12-MW18-A01	
Sample Type												
Batch#			9502G681		9502G299		9502G299		9502G681		9502G299	
Prep#			95GB0175		95GB0118		95GB0175		95GB0175		95GB0118	
RFW#			001		003		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		2/20/95		3/10/95		2/20/95	
Analysis Date			3/28/95		3/11/95		3/16/95		3/26/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Chloroethyl) ether	10	9.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Chlorophenol	40	7.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,3-Dichlorobenzene	600	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,4-Dichlorobenzene	75	4.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,2-Dichlorobenzene	600	5.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Methylphenol		6.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Methylphenol		12.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachloroethane	10	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Nitrobenzene	10	7.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Isophorone	100	3.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Nitrophenol		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dimethylphenol	100	4.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Chloroethoxy) methane		6.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dichlorophenol	20	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,2,4-Trichlorobenzene	9	9.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Naphthalene		8.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chloroaniline		2.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorobutadiene	1	4.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chloro-3-methylphenol	20	3.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Methylnaphthalene		8.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorocyclopentadiene	50	3.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4,6-Trichlorophenol		5.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
2-Chloronaphthalene		8.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Nitroaniline		6.1	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Dimethylphthalate	7000	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Acenaphthylene	10	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,6-Dinitrotoluene	10	5.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
3-Nitroaniline		5.2	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Acenaphthene	400	6.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M12		M12		M12		M12	
Sample			MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A01RE		MP12-MW17-A02		MP12-MW18-A01	
Sample Type												
Batch#			9502G681		9502G299		9502G299		9502G681		9502G299	
Prep#			95GB0175		95GB0118		95GB0175		95GB0175		95GB0118	
RFW#			001		003		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		2/20/95		3/10/95		2/20/95	
Analysis Date			3/28/95		3/11/95		3/16/95		3/26/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Dibenzofuran		6.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dinitrotoluene	10	5.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Diethylphthalate	5000	5.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chlorophenyl-phenylether		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Fluorene	300	6.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Nitroaniline		6.4	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
4,6-Dinitro-2-methylphenol		5.3	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Bromophenyl-phenylether		5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorobenzene	10	5.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Pentachlorophenol	1	4.0	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Phenanthrene	10	5.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Anthracene	2000	4.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Carbazole		4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Di-n-butylphthalate	900	6.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Fluoranthene	300	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Pyrene	200	5.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Butylbenzylphthalate	100	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
3,3'-Dichlorobenzidine	60	2.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(a)anthracene	10	4.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Chrysene	20	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	11	12 U	12	3 J	11	1 J	12	3 J	11
Di-n-octyl phthalate	100	5.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(b)fluoranthene	2	5.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(k)fluoranthene	2	6.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(a)pyrene	20	4.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Dibenzo(a,h)anthracene	20	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(g,h,i)perylene	20	6.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			5 J		52 J		22 J		10 J		3 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M14		M14		M14		M14	
Sample			MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type												
Batch#			9502G681		9502G299		9502G681		9502G403		9503G722	
Prep#			95GB0175		95GB0118		95GB0175		95GB0129		95GB0181	
RFW#			005		007		007		010		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date			3/26/95		3/12/95		3/27/95		3/16/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Chlorophenol	40	7.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Methylphenol		6.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Methylphenol		12.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachloroethane	10	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Nitrobenzene	10	7.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Isophorone	100	3.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Nitrophenol		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Naphthalene		8.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chloroaniline		2.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Methylnaphthalene		8.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
2-Chloronaphthalene		8.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Nitroaniline		6.1	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Dimethylphthalate	7000	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Acenaphthylene	10	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
3-Nitroaniline		5.2	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Acenaphthene	400	6.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M14		M14		M14		M14	
Sample			MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type												
Batch#			9502G681		9502G299		9502G681		9502G403		9503G722	
Prep#			95GB0175		95GB0118		95GB0175		95GB0129		95GB0181	
RFW#			005		007		007		010		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date			3/26/95		3/12/95		3/27/95		3/16/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Dibenzofuran		6.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Diethylphthalate	5000	5.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Fluorene	300	6.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Nitroaniline		6.4	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
4,6-Dinitro-2-methylphenol		5.3	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Pentachlorophenol	1	4.0	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Phenanthrene	10	5.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Anthracene	2000	4.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Carbazole		4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Fluoranthene	300	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Pyrene	200	5.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Chrysene	20	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	12 U	12	3 J	11	12 U	12	1 JB	10	10 U	10
Di-n-octyl phthalate	100	5.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Petroleum hydrocarbons												
Total Est. Conc. of TIC					22 J		5 J		12 J		28 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M14		M14		M14		M14		M16	
Sample			MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP14-MW21-A01RE		MP16-MW22-A01	
Sample Type			Field Rinsate Blank									
Batch#			9503G722		9502G403		9503G660		9502G403		9502G238	
Prep#			95GB0181		95GB0129		95GB0174		95GB0129		95GB0112	
RFW#			003		012		019		012 RE		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/22/95		3/9/95		2/22/95		2/17/95	
Analysis Date			3/18/95		3/16/95		3/27/95		3/5/95		2/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Naphthalene		8.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
2-Chloronaphthalene		8.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitroaniline		6.1	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
3-Nitroaniline		5.2	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Acenaphthene	400	6.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M14		M14		M14		M14		M16	
Sample			MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP14-MW21-A01RE		MP16-MW22-A01	
Sample Type			Field Rinsate Blank									
Batch#			9503G722		9502G403		9503G660		9502G403		9502G238	
Prep#			95GB0181		95GB0129		95GB0174		95GB0129		95GB0112	
RFW#			003		012		019		012 RE		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/22/95		3/9/95		2/22/95		2/17/95	
Analysis Date			3/18/95		3/16/95		3/27/95		3/5/95		2/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Dibenzofuran		6.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Nitroaniline		6.4	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
4,6-Dinitro-2-methylphenol		5.3	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Pentachlorophenol	1	4.0	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Phenanthrene	10	5.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Carbazole		4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	1 JB	10	10 U	10	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Petroleum hydrocarbons												
Total Est. Conc. of TIC					7 J				6 J		83 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18	
Sample			MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02	
Sample Type							Field Rinsate Blank							
Batch#			9503G660		9505G825		9505G825		9505G139		9502G238		9502G681	
Prep#			95GB0174		95GIR081		95GIR081		95GB0112		95GB0112		95GB0175	
RFW#			018		001		004		001		001		009	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95	
Analysis Date			3/27/95		5/30/95		5/29/95		3/1/95		3/1/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	2 J	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4,5-Trichlorophenol	700	4.7	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Nitroaniline		6.1	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
3-Nitroaniline		5.2	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dinitrophenol	40	4.6	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18	
Sample			MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02	
Sample Type							Field Rinsate Blank							
Batch#			9503G660		9505G825		9505G825		9505G139		9502G238		9502G681	
Prep#			95GB0174		95GIR081		95GIR081		95GB0112		95GB0112		95GB0175	
RFW#			018		001		004		001		001		009	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95	
Analysis Date			3/27/95		5/30/95		5/29/95		3/1/95		3/1/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Diethylphthalate	5000	5.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Nitroaniline		6.4	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
4,6-Dinitro-2-methylphenol		5.3	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Pentachlorophenol	1	4.0	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Carbazole		4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	1 J	10	90 B	43	2 JB	43	2 JB	10	4	10	1 J	11
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Petroleum hydrocarbons					0.26 U	0.26	0.27 U	0.27	0.26 U	0.26	1.3	0.27	0.62	0.26
Total Est. Conc. of TIC			88 J		5 JB		10 J		29 J		12 J		29 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW24-C02		MP18-MW24-C02RE		MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank					
Batch#			9502G681		9502G681		9502G238		9502G681		9502G238		9502G681	
Prep#			95GB0175		95GB0175		95GB0112		95GB0175		95GB0112		95GB0175	
RFW#			011		011 RE		004		014		006		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		3/10/95		2/17/95		3/10/95		2/17/95		3/10/95	
Analysis Date			3/27/95		3/28/95		2/27/95		3/27/95		2/28/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Chloroethyl) ether	10	9.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Chlorophenol	40	7.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,3-Dichlorobenzene	600	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,4-Dichlorobenzene	75	4.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,2-Dichlorobenzene	600	5.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Methylphenol		6.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Methylphenol		12.9	2 J	11	2 J	11	10 U	10	11 U	11	10 U	10	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachloroethane	10	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Nitrobenzene	10	7.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Isophorone	100	3.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Nitrophenol		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dimethylphenol	100	4.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Chloroethoxy) methane		6.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dichlorophenol	20	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,2,4-Trichlorobenzene	9	9.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Naphthalene		8.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chloroaniline		2.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorobutadiene	1	4.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chloro-3-methylphenol	20	3.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Methylnaphthalene		8.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorocyclopentadiene	50	3.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4,6-Trichlorophenol		5.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
2-Chloronaphthalene		8.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Dimethylphthalate	7000	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Acenaphthylene	10	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,6-Dinitrotoluene	10	5.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Acenaphthene	400	6.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW24-C02		MP18-MW24-C02RE		MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank					
Batch#			9502G681		9502G681		9502G238		9502G681		9502G238		9502G681	
Prep#			95GB0175		95GB0175		95GB0112		95GB0175		95GB0112		95GB0175	
RFW#			011		011 RE		004		014		006		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		3/10/95		2/17/95		3/10/95		2/17/95		3/10/95	
Analysis Date			3/27/95		3/28/95		2/27/95		3/27/95		2/28/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Dibenzofuran		6.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dinitrotoluene	10	5.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Diethylphthalate	5000	5.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chlorophenyl-phenylether		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Fluorene	300	6.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Bromophenyl-phenylether		5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorobenzene	10	5.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Phenanthrene	10	5.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Anthracene	2000	4.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Carbazole		4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Di-n-butylphthalate	900	6.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Fluoranthene	300	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Pyrene	200	5.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Butylbenzylphthalate	100	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
3,3'-Dichlorobenzidine	60	2.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(a)anthracene	10	4.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Chrysene	20	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	11 U	11	10 U	10	140	22 *	10 U	10	12 U	12
Di-n-octyl phthalate	100	5.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(b)fluoranthene	2	5.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(k)fluoranthene	2	6.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(a)pyrene	20	4.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Dibenzo(a,h)anthracene	20	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(g,h,i)perylene	20	6.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Petroleum hydrocarbons			0.94	0.27	0.94	0.27	0.28	0.26	0.29 U	0.29	0.28	0.27	0.58	0.27
Total Est. Conc. of TIC			38 J		24 J		4 J		7 J		72 J		59 J	
Dilution Factor									* = 2.00					
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		B1		B1		B2		B2		B3	
Sample			MP18-MW25-C01		B1-MW01B-A01		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01	
Sample Type			Duplicate											
Batch#			9502G238		9502G169		9503G616		9502G169		9503G616		9502G169	
Prep#			95GB0112		95GB0103		95GB0166		95GB0103		95GB0166		95GB0103	
RFW#			008		001		008		003		010		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		2/14/95		3/7/95		2/14/95		3/7/95		2/14/95	
Analysis Date			2/28/95		3/7/95		3/26/95		3/7/95		3/30/95		3/7/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Chlorophenol	40	7.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Methylphenol		6.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Methylphenol		12.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachloroethane	10	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Nitrobenzene	10	7.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Isophorone	100	3.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Nitrophenol		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Naphthalene		8.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chloroaniline		2.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Methylnaphthalene		8.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
2-Chloronaphthalene		8.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Nitroaniline		6.1	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Acenaphthylene	10	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
3-Nitroaniline		5.2	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Acenaphthene	400	6.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		B1		B1		B2		B2		B3	
Sample			MP18-MW25-C01		B1-MW01B-A01		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01	
Sample Type			Duplicate											
Batch#			9502G238		9502G169		9503G616		9502G169		9503G616		9502G169	
Prep#			95GB0112		95GB0103		95GB0166		95GB0103		95GB0166		95GB0103	
RFW#			008		001		008		003		010		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		2/14/95		3/7/95		2/14/95		3/7/95		2/14/95	
Analysis Date			2/28/95		3/7/95		3/26/95		3/7/95		3/30/95		3/7/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Dibenzofuran		6.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Diethylphthalate	5000	5.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Fluorene	300	6.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Nitroaniline		6.4	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
4,6-Dinitro-2-methylphenol		5.3	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Pentachlorophenol	1	4.0	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Phenanthrene	10	5.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Anthracene	2000	4.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Carbazole		4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Fluoranthene	300	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Pyrene	200	5.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Chrysene	20	4.4	3 J	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	100 B	20 *
Di-n-octyl phthalate	100	5.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Petroleum hydrocarbons			0.30	0.27										
Total Est. Conc. of TIC			114 J		4		5 J		6		7 J		10	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B3		B3		B3		B4		B4	
Sample			B3-MW03B-A02		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02	
Sample Type					Field Rinsate Blank		Field Rinsate Blank					
Batch#			9503G740		9502G169		9503G616		9502G169		9503G616	
Prep#			95GB0181		95GB0103		95GB0166		95GB0103		95GB0166	
RFW#			001		008		006		010		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			3/29/95		3/7/95		3/25/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitroaniline		6.1	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3-Nitroaniline		5.2	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B3		B3		B3		B4		B4	
Sample			B3-MW03B-A02		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02	
Sample Type					Field Rinsate Blank		Field Rinsate Blank					
Batch#			9503G740		9502G169		9503G616		9502G169		9503G616	
Prep#			95GB0181		95GB0103		95GB0166		95GB0103		95GB0166	
RFW#			001		008		006		010		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			3/29/95		3/7/95		3/25/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Nitroaniline		6.4	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
4,6-Dinitro-2-methylphenol		5.3	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pentachlorophenol	1	4.0	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	5 J	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			52 J		8		10 J		6		6 J	
Dilution Factor			* = 2.00									
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B5		B5	
Sample			B5-MW05B-A01		B5-MW05B-A02	
Sample Type						
Batch#			9502G169		9503G616	
Prep#			95GB0103		95GB0166	
RFW#			012		001	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			2/13/95		3/7/95	
Analysis Date			3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10
Naphthalene		8.4	11 U	11	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	25 U	25
2-Chloronaphthalene		8.2	11 U	11	10 U	10
2-Nitroaniline		6.1	26 U	26	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10
3-Nitroaniline		5.2	26 U	26	25 U	25
Acenaphthene	400	6.7	11 U	11	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B5		B5	
Sample			B5-MW05B-A01		B5-MW05B-A02	
Sample Type						
Batch#			9502G169		9503G616	
Prep#			95GB0103		95GB0166	
RFW#			012		001	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			2/13/95		3/7/95	
Analysis Date			3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	25 U	25
Dibenzofuran		6.5	11 U	11	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10
4-Nitroaniline		6.4	26 U	26	25 U	25
4,6-Dinitro-2-methylphenol		5.3	26 U	26	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10
Pentachlorophenol	1	4.0	26 U	26	25 U	25
Phenanthrene	10	5.0	11 U	11	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10
Carbazole		4.4	11 U	11	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10
Petroleum hydrocarbons						
Total Est. Conc. of TIC			5		4 J	
Dilution Factor						
Method:TCL Semivolatiles						

N OST
GROUNDWATER INORGANICS

Geographical Location		M2		M2		M2		M2		M2		M2		M2	
Sample		MP02-MW01-A01		MP02-MW01-A01 SOL		MP02-MW01-A02		MP02-MW01-A02 SOL		MP02-MW02-A01		MP02-MW02-A01 SOL		MP02-MW02-A02	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G197		9502G197		9503G642		9503G642		9502G197		9502G197		9503G642	
Prep#		95GI426		95GI426		95GI479		95GI479		95GI426		95GI426		95GI479	
RFW#		001		002		001		002		003		004		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95		2/15/95		3/8/95	
Analysis Date		2/23/95		2/28/95		3/10/95		3/10/95		2/23/95		2/28/95		3/10/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	5400	24.0	310	24.0	5310	24.0	379	24.0	633	24.0	40.2	24.0	3490	24.0
Arsenic	8	9.3	1.9	1.9 U	1.9	8.6	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9	7.7	1.6
Barium	2000	141	1.7	104	1.7	129	1.7	88.5	1.7	484	1.7	436	1.7	397	1.7
Beryllium	20	1.1	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		14000	10.4	13800	10.4	14300	10.4	14100	10.4	98600	10.4	94800	10.4	80100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	4.0	2.8
Cobalt		7.9	3.0	5.8	3.0	5.6	3.0	6.9	3.0	3.0 U	3.0	3.0 U	3.0	6.2	3.0
Chromium	100	68.4	2.9	2.9 U	2.9	63.6	2.9	2.9 U	2.9	7.5	2.9	2.9 U	2.9	37.5	2.9
Copper	1000	4.3	1.9	2.8	1.9	6.3	1.9	1.9	1.9	1.9 U	1.9	1.9 U	1.9	12.2	1.9
Iron	300	16600	6.4	39.8	6.4	15200	6.4	33.7	6.4	64700	6.4	58900	6.4	57800	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.29	0.20	0.20 U	0.20	0.21	0.20
Potassium		6710	685	3680	685	7680	685	4050	685	12000	685	11400	685	12000	685
Magnesium		8370	18.3	6290	18.3	8260	18.3	6250	18.3	12100	18.3	11400	18.3	10700	18.3
Manganese	50	79.5	1.8	67.0	1.8	77.6	1.8	66.4	1.8	314	1.8	301	1.8	259	1.8
Sodium	50000	12600	30.5	13500	30.5	13600	30.5	13900	30.5	11200	30.5	10900	30.5	9580	30.5
Nickel	100	19.1	10.8	16.6	10.8	20.5	10.8	14.0	10.8	10.8 U	10.8	20.0	10.8	10.8 U	10.8
Lead	10	4.9	1.1	1.1 U	1.1	3.9	1.2	1.2 U	1.2	4.4	1.1	1.1 U	1.1	18.7	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	22.6	20.7	20.7 U	20.7
Selenium	50	1.8	1.5	1.5 U	1.5	2.0	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		21.6	2.3	2.3 U	2.3	20.9	2.3	2.4	2.3	6.2	2.3	2.3 U	2.3	21.1	2.3
Zinc	5000	455	3.8	402	3.8	489	3.8	463	3.8	15.7	3.8	5.1	3.8	79.0	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M2		M2		M2		M2		M2		M3		M3	
Sample		MP02-MW02-A02 SOL		MP02-MW03-A01		MP02-MW03-A01 SOL		MP02-MW03-A02		MP02-MW03-A02 SOL		MP03-MW04-A01		MP03-MW04-A01 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G642		9502G197		9502G197		9503G642		9503G642		9502G219		9502G219	
Prep#		95GI479		95GI426		95GI426		95GI479		95GI479		95GI439		95GI439	
RFW#		004		005		006		005		006		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		2/15/95		2/15/95		3/8/95		3/8/95		2/16/95		2/16/95	
Analysis Date		3/10/95		2/23/95		2/28/95		3/10/95		3/10/95		3/1/95		3/3/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	30.9	24.0	693	24.0	28.3	24.0	2540	24.0	24.0 U	24.0	611	16.8	29.3	16.8
Arsenic	8	1.8	1.6	1.9 U	1.9	1.9 U	1.9	3.4	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9
Barium	2000	298	1.7	79.1	1.7	64.8	1.7	132	1.7	55.9	1.7	43.6	0.80	39.7	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30
Calcium		80000	10.4	63300	10.4	63800	10.4	65800	10.4	60600	10.4	32300	8.4	32300	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.5	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3
Chromium	100	2.9 U	2.9	5.6	2.9	2.9 U	2.9	24.9	2.9	2.9 U	2.9	8.1	4.7	4.7 U	4.7
Copper	1000	4.2	1.9	2.1	1.9	1.9 U	1.9	9.6	1.9	2.8	1.9	4.0 U	4.0	4.0 U	4.0
Iron	300	42500	6.4	15500	6.4	12000	6.4	25400	6.4	11800	6.4	2610	2.5	1030	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.29	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10000	685	10400	685	10200	685	11900	685	9540	685	7540	67.9	6730	67.9
Magnesium		9600	18.3	5180	18.3	5090	18.3	5960	18.3	4940	18.3	4210	34.3	3920	34.3
Manganese	50	248	1.8	455	1.8	453	1.8	512	1.8	455	1.8	32.7	0.90	34.1	0.90
Sodium	50000	9710	30.5	8940	30.5	8990	30.5	9400	30.5	8770	30.5	12600	19.1	12600	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	5.9	4.2	4.2 U	4.2
Lead	10	1.2 U	1.2	8.0	1.1	1.1 U	1.1	21.6	1.2	3.9	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	5.5 U	5.5 *	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	5.1	2.3	2.3 U	2.3	14.3	2.3	2.3 U	2.3	4.0	2.1	2.6	2.1
Zinc	5000	6.6	3.8	36.6	3.8	4.1	3.8	122	3.8	9.3	3.8	17.9	1.9	8.5	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor		* = 5.0													
Method:TAL Metals, Cyanide															

[illegible]'OST
GROUNDWATER INORGANICS

Geographical Location		M3		M3		M3		M3		M3		M3		M3	
Sample		MP03-MW04-A02		MP03-MW04-A02 SOL		MP03-MW05-A01		MP03-MW05-A01 SOL		MP03-MW05-A02		MP03-MW05-A02 SOL		MP03-MW06-A01	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9503G642		9503G642		9502G219		9502G219		9503G660		9503G660		9502G219	
Prep#		95GI479		95GI479		95GI439		95GI439		95GI488		95GI488		95GI439	
RFW#		009		010		003		004		003		004		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		3/8/95		2/16/95		2/16/95		3/9/95		3/9/95		2/16/95	
Analysis Date		3/10/95		3/10/95		3/1/95		3/3/95		3/13/95		3/13/95		3/1/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	799	24.0	24.0 U	24.0	768	16.8	16.8 U	16.8	4220	24.0	24.0 U	24.0	132	16.8
Arsenic	8	1.9	1.6	2.0	1.6	1.9 U	1.9	1.9 U	1.9	4.3	1.3	1.3 U	1.3	1.9 U	1.9
Barium	2000	51.2	1.7	42.8	1.7	520.0	0.80	466	0.80	648	1.7	536	1.7	119	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30
Calcium		35200	10.4	32400	10.4	93200	8.4	90000	8.4	98000	10.4	97900	10.4	119000	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	4.2	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0	2.3	3.6	2.3	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3
Chromium	100	10	2.9	2.9 U	2.9	7.3	4.7	4.7 U	4.7	32.9	2.9	2.9 U	2.9	7.3	4.7
Copper	1000	2.0	1.9	3.0	1.9	8.5	4.0	4.0 U	4.0	36.9	1.9	1.9 U	1.9	4.0 U	4.0
Iron	300	3320	6.4	48.7	6.4	79700	2.5	71300	2.5	100000	6.4	78700	6.4	17800	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.63	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8110	685	6450	685	12900	67.9	12300	67.9	13700	685	11700	685	10100	67.9
Magnesium		4970	18.3	4170	18.3	17800	34.3	17200	34.3	18100	18.3	17100	18.3	28100	34.3
Manganese	50	35.9	1.8	32.1	1.8	1150	0.90	1100	0.90	1080	1.8	1030	1.8	659	0.90
Sodium	50000	13700	30.5	12500	30.5	16300	19.1	16200	19.1	15300	30.5	15800	30.5	35000	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2
Lead	10	1.2 U	1.2	1.2 U	1.2	26.6	3.2	1.6 U	1.6	130	16.0 *	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70
Vanadium		2.6	2.3	2.3 U	2.3	4.9	2.1	2.1 U	2.1	19.1	2.3	2.3 U	2.3	2.1 U	2.1
Zinc	5000	17.8	3.8	10.2	3.8	86.1	1.9	12.5	1.9	382	3.8	11.4	3.8	64.2	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor										* = 10					
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M3		M3		M3		M4		M4		M4		M4	
Sample		MP03-MW06-A01 SOL		MP03-MW06-A02		MP03-MW06-A02 SOL		MP04-MW07-A01		MP04-MW07-A01 SOL		MP04-MW07-A02		MP04-MW07-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G219		9503G660		9503G660		9502G219		9502G219		9503G660		9503G660	
Prep#		95GI439		95GI488		95GI488		95GI439		95GI439		95GI488		95GI488	
RFW#		006		001		002		007		008		005		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/9/95		3/9/95		2/16/95		2/16/95		3/9/95		3/9/95	
Analysis Date		3/3/95		3/13/95		3/13/95		3/1/95		3/3/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	16.8 U	16.8	816	24.0	24.0 U	24.0	9440	16.8	823	16.8	3150	24.0	851	24.0
Arsenic	8	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	8.0	1.9	1.9 U	1.9	2.2	1.3	1.3 U	1.3
Barium	2000	112	0.80	129	1.7	113	1.7	91.6	0.80	60.5	0.80	68.5	1.7	62.3	1.7
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.69	0.30	0.40	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		117000	8.4	126000	10.4	126000	10.4	18600	8.4	18100	8.4	18100	10.4	18600	10.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		2.3 U	2.3	3.0 U	3.0	3.0 U	3.0	6.0	2.3	3.5	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	4.7 U	4.7	8.2	2.9	2.9 U	2.9	94.9	4.7	4.7 U	4.7	22.1	2.9	2.9 U	2.9
Copper	1000	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	9.5	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	15900	2.5	23200	6.4	17200	6.4	29000	2.5	57.2	2.5	6870	6.4	169	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9750	67.9	10500	685	10200	685	6810	67.9	1970	67.9	3150	685	2420	685
Magnesium		27400	34.3	29500	18.3	29100	18.3	9020	34.3	7090	34.3	7550	18.3	7290	18.3
Manganese	50	643	0.90	713	1.8	703	1.8	65.6	0.90	51.5	0.90	57.0	1.8	55.3	1.8
Sodium	50000	34400	19.1	33600	30.5	33400	30.5	54300	19.1	53000	19.1	46100	30.5	47400	30.5
Nickel	100	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	13.7	4.2	10.0	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	4.1	1.6	1.6 U	1.6	15.8	1.6	1.6 U	1.6	1.8	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7
Vanadium		2.1 U	2.1	6.2	2.3	2.3 U	2.3	54.1	2.1	2.8	2.1	13.8	2.3	2.3 U	2.3
Zinc	5000	53.3	1.9	59.9	3.8	34.4	3.8	60.1	1.9	34.2	1.9	38.4	3.8	34.6	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

I POST
GROUNDWATER INORGANICS

Geographical Location		M4		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW07-C01		MP04-MW07-C01 SOL		MP04-MW07-C02		MP04-MW07-C02 SOL		MP04-MW07-E01		MP04-MW07-E01 SOL		MP04-MW08-A01	
Sample Type		Duplicate - Total		Duplicate - Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9502G219		9502G219		9503G660		9503G660		9502G219		9502G219		9502G219	
Prep#		95GI439		95GI439		95GI488		95GI488		95GI439		95GI439		95GI439	
RFW#		009		010		007		008		012		013		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		2/16/95		3/9/95		3/9/95		2/16/95		2/16/95		2/16/95	
Analysis Date		3/1/95		3/3/95		3/13/95		3/13/95		3/1/95		3/1/95		3/1/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	9950	16.8	807	16.8	2890	24.0	856	24.0	18.1	16.8	16.8 U	16.8	1570	16.8
Arsenic	8	7.2	1.9	1.9 U	1.9	2.2	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	89.7	0.80	60.1	0.80	70.3	1.7	61.6	1.7	0.81	0.80	0.80 U	0.80	38.8	0.80
Beryllium	20	0.69	0.30	0.51	0.30	0.99	0.90	0.90 U	0.90	0.30 U	0.30	0.31	0.30	0.30 U	0.30
Calcium		18200	8.4	17900	8.4	19000	10.4	18900	10.4	57.4	8.4	82.6	8.4	32700	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		5.8	2.3	5.3	2.3	3.4	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	2.8	2.3
Chromium	100	103	4.7	4.7 U	4.7	18.2	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	17.9	4.7
Copper	1000	6.3	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	30000	2.5	62.3	2.5	6420	6.4	131	6.4	62.7	2.5	4.3	2.5	17700	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6690	67.9	1990	67.9	3230	685	2240	685	67.9 U	67.9	68.8	67.9	7500	67.9
Magnesium		9110	34.3	6990	34.3	7690	18.3	7430	18.3	34.3 U	34.3	34.3 U	34.3	5970	34.3
Manganese	50	64.6	0.90	51.0	0.90	58.2	1.8	55.2	1.8	0.90 U	0.90	0.90 U	0.90	110	0.90
Sodium	50000	52700	19.1	52100	19.1	47600	30.5	48600	30.5	116	19.1	81.4	19.1	9450	19.1
Nickel	100	12.0	4.2	9.2	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	15.8	1.6	1.6 U	1.6	2.2	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	7.4	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		56.1	2.1	2.1 U	2.1	12.2	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	6.0	2.1
Zinc	5000	59.6	1.9	34.0	1.9	39.2	3.8	33.2	3.8	3.8	1.9	2.4	1.9	30.0	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M4		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW08-A01 SOL		MP04-MW08-A02		MP04-MW08-A02 SOL		MP04-MW09-A01		MP04-MW09-A01 SOL		MP04-MW09-A02		MP04-MW09-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G219		9503G642		9503G642		9502G219		9502G219		9503G660		9503G660	
Prep#		95GI439		95GI479		95GI479		95GCN045		95GI439		95GI488		95GI488	
RFW#		015		007		008		016		017		009		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/8/95		3/8/95		2/16/95		2/16/95		3/9/95		3/9/95	
Analysis Date		3/3/95		3/10/95		3/10/95		3/1/95		3/3/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	16.8 U	16.8	1640	24.0	24.0 U	24.0	182	16.8	16.8 U	16.8	76.2	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	2.1	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3
Barium	2000	27.7	0.80	41.0	1.7	28.0	1.7	60.0	0.80	39.3	0.80	55.8	1.7	38.8	1.7
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		31900	8.4	33500	10.4	33100	10.4	45300	8.4	44000	8.4	47700	10.4	46300	10.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		2.3 U	2.3	3.8	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	4.7 U	4.7	16.6	2.9	2.9 U	2.9	6.0	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9
Copper	1000	4.0 U	4.0	3.0	1.9	2.6	1.9	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	10900	2.5	18100	6.4	10600	6.4	21500	2.5	12500	2.5	21900	6.4	13500	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6150	67.9	7670	685	6570	685	8640	67.9	8350	67.9	9210	685	8010	685
Magnesium		5290	34.3	6320	18.3	5760	18.3	6070	34.3	5870	34.3	6420	18.3	6170	18.3
Manganese	50	101	0.90	111	1.8	104	1.8	81.3	0.90	77.2	0.90	88.7	1.8	85.5	1.8
Sodium	50000	9230	19.1	9550	30.5	9580	30.5	9760	19.1	9580	19.1	10800	30.5	10500	30.5
Nickel	100	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	6.7	1.2	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7
Vanadium		2.1 U	2.1	7.9	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3	2.3 U	2.3
Zinc	5000	3.0	1.9	33.5	3.8	5.7	3.8	3.9	1.9	1.9 U	1.9	3.8 U	3.8	4.5	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

POST
GROUNDWATER INORGANICS

Geographical Location		M5		M5		M5		M5		M5		M5		M5	
Sample		MP05-MW10-A01		MP05-MW10-A01 SOL		MP05-MW10-A02		MP05-MW10-A02 SOL		MP05-MW11-A01		MP05-MW11-A01 SOL		MP05-MW11-A02	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G238		9502G238		9503G660		9503G660		9502G238		9502G238		9503G660	
Prep#		95GCN045		95GI397		95GI488		95GI488		95GCN045		95GI397		95GI488	
RFW#		010		011		011		012		012		013		013	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/17/95		2/17/95		3/9/95		3/9/95		2/17/95		2/17/95		3/9/95	
Analysis Date		3/1/95		2/22/95		3/13/95		3/13/95		3/1/95		2/22/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	212	24.0	30.7	24.0	99.6	24.0	24.0 U	24.0	1160	24.0	57.4	24.0	945	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3
Barium	2000	101	1.7	36.7	1.7	131	1.7	44.9	1.7	16.8	1.7	13.2	1.7	15.3	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		16000	10.4	15400	10.4	17000	10.4	15900	10.4	11100	10.4	11100	10.4	11100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	5.5	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	15.4	2.9	2.9 U	2.9	10.4	2.9
Copper	1000	10.9	1.9	2.5	1.9	3.2	1.9	1.9 U	1.9	2.9	1.9	2.0	1.9	1.9 U	1.9
Iron	300	8310	6.4	4200	6.4	10100	6.4	4490	6.4	5150	6.4	19.3	6.4	4220	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10100	685	10000	685	7600	685	7430	685	3590	685	2230	685	3020	685
Magnesium		14100	18.3	14100	18.3	13000	18.3	12400	18.3	4260	18.3	3760	18.3	4180	18.3
Manganese	50	127	1.8	117	1.8	166	1.8	148	1.8	14.8	1.8	12.0	1.8	14.2	1.8
Sodium	50000	85400	30.5	85100	30.5	80200	30.5	77000	30.5	18400	30.5	18500	30.5	17500	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	12.4	10.8	10.8 U	10.8
Lead	10	5.4	1.6	1.6 U	1.6	5.9	1.6	1.6 U	1.6	2.2	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.8	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7
Vanadium		2.3 U	2.3	2.3 U	2.3	2.6	2.3	2.3 U	2.3	5.5	2.3	2.3 U	2.3	6.2	2.3
Zinc	5000	10.5	3.8	5.9	3.8	5.0	3.8	4.3	3.8	168	3.8	160	3.8	178.0	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate		18.8	5.0			10.8	5.0			49.2	10.0 *			38.3	10.0
Dilution Factor										*=2					
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M5		M5		M5		M8		M8		M8	
Sample		MP05-MW11-A02 SOL		MP05-MW11-E02		MP05-MW11-E02 SOL		MP08-MW12-A01		MP08-MW12-A01 SOL		MP08-MW12-A02	
Sample Type		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total	
Batch#		9503G660		9503G660		9503G660		9502G238		9502G238		9503G767	
Prep#		95GI488		95GI488		95GI488		95GCN045		95GI397		95GI509	
RFW#		014		016		017		014		015		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/9/95		3/9/95		3/9/95		2/17/95		2/17/95		3/15/95	
Analysis Date		3/13/95		3/13/95		3/13/95		3/1/95		2/22/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	45.8	24.0	24.0 U	24.0	24.0 U	24.0	186	24.0	25.8	24.0	1290	24.0
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	11.7	1.7	1.7 U	1.7	1.7 U	1.7	6.8	1.7	4.6	1.7	10.8	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		10900	10.4	289	10.4	55.4	10.4	9210	10.4	8940	10.4	8580	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	14.5	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	3.2	1.9	2.4	1.9	1.9 U	1.9
Iron	300	17.3	6.4	6.4 U	6.4	6.4 U	6.4	529	6.4	23.6	6.4	5430	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2320	685	737	685	685 U	685	2540	685	2460	685	3090	685
Magnesium		3670	18.3	18.3 U	18.3	18.3 U	18.3	2400	18.3	2290	18.3	2570	18.3
Manganese	50	9.5	1.8	1.8 U	1.8	1.8 U	1.8	9.9	1.8	8.0	1.8	10.6	1.8
Sodium	50000	17200	30.5	165	30.5	147	30.5	22000	30.5	21200	30.5	20500	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.0	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.7 U	1.7	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	11.4	2.3
Zinc	5000	165	3.8	3.8 U	3.8	3.8 U	3.8	4.4	3.8	3.8 U	3.8	7.7	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen								0.20 U	0.20			0.20 U	0.20
Sulfate				5.0 U	5.0			40.4	10.0			35.9	5.0
Dilution Factor								*=2					
Method:TAL Metals, Cyanide													

I POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW12-A02 SOL		MP08-MW12-C02		MP08-MW12-C02 SOL		MP08-MW12-E02		MP08-MW12-E02 SOL		MP08-MW13-A01		MP08-MW13-A01 SOL	
Sample Type		Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9503G767		9503G767		9503G767		9502G403		9502G403	
Prep#		95GI510		95GI511		95GI512		95GI513		95GI514		95GCN053		95GI460	
RFW#		002		003		004		006		007		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		3/15/95		3/15/95		3/15/95		2/22/95		2/22/95	
Analysis Date		3/21/95		3/21/95		3/21/95		3/21/95		3/21/95		3/7/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	1090	24.0	36.1	24.0	27.0	24.0	24.0 U	24.0	363	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	4.0	1.7	10.8	1.7	3.9	1.7	1.7 U	1.7	1.7 U	1.7	204	1.7	174	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		7980	10.4	8750	10.4	8550	10.4	109	10.4	95.7	10.4	144000	10.4	139000	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	11.1	2.9	3.3	2.9	2.9 U	2.9	2.9 U	2.9	4.1	2.9	2.9 U	2.9
Copper	1000	2.5	1.9	1.9 U	1.9	2.3	1.9	2.1	1.9	1.9 U	1.9	7.9	1.9	1.9 U	1.9
Iron	300	26.6	6.4	4780	6.4	21.3	6.4	13.2	6.4	7.4	6.4	31900	6.4	25600	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.62	0.20	0.20 U	0.20
Potassium		1980	685	2920	685	2660	685	685 U	685	685 U	685	22100	685	21300	685
Magnesium		1960	18.3	2450	18.3	2160	18.3	18.3 U	18.3	18.3 U	18.3	69600	18.3	67900	18.3
Manganese	50	7.9	1.8	10.6	1.8	7.0	1.8	1.8 U	1.8	1.8 U	1.8	573	1.8	550	1.8
Sodium	50000	19500	30.5	21100	30.5	20900	30.5	87.3	30.5	120	30.5	295000	30.5	288000	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	2.8	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		3.2	2.3	8.6	2.3	3.8	2.3	3.0	2.3	2.3 U	2.3	5.6	2.3	3.4	2.3
Zinc	5000	8.6	3.8	8.7	3.8	4.2	3.8	3.8 U	3.8	4.1	3.8	11.9	3.8	3.8 U	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen				0.20 U	0.20			0.20 U	0.20			2.6	0.20		
Sulfate				41.4	10.0 *			5.0 U	5.0			14.0	5.0		
Dilution Factor				*=2											
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW13-A02		MP08-MW13-A02 SOL		MP08-MW14-A01		MP08-MW14-A01 SOL		MP08-MW14-A02		MP08-MW14-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9502G219		9502G219		9503G767		9503G767	
Prep#		95GI515		95GI516		95GCN045		95GI439		95GI517		95GI518	
RFW#		008		009		018		019		010		011	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		2/16/95		2/16/95		3/15/95		3/15/95	
Analysis Date		3/21/95		3/21/95		3/1/95		3/3/95		3/21/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	661	24.0	44.4	24.0	2220	16.8	30.4	16.8	2480	24.0	46.9	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	4.3	1.9	1.9 U	1.9	3.2	1.9	1.9 U	1.9
Barium	2000	260	1.7	180	1.7	372	0.80	304	0.80	448	1.7	356	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.70	0.30	0.39	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		171000	10.4	165000	10.4	162000	8.4	165000	8.4	157000	10.4	164000	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	3.0	2.9	2.9 U	2.9	2.9	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	4.8	2.3	2.5	2.3	3.8	3.0	3.0 U	3.0
Chromium	100	4.3	2.9	2.9 U	2.9	23.1	4.7	4.7 U	4.7	24.9	2.9	3.1	2.9
Copper	1000	5.1	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	5.2	1.9	4.4	1.9
Iron	300	48100	6.4	27900	6.4	57700	2.5	41400	2.5	57000	6.4	35100	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		17800	685	17200	685	65100	67.9	64300	67.9	65200	685	67500	685
Magnesium		58300	18.3	57500	18.3	79000	34.3	78700	34.3	75100	18.3	78200	18.3
Manganese	50	737	1.8	703	1.8	277	0.90	263	0.90	275	1.8	271	1.8
Sodium	50000	171000	30.5	172000	30.5	421000	19.1	424000	19.1	346000	762 *	365000	762 *
Nickel	100	10.8 U	10.8	10.8 U	10.8	4.9	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	3.7	1.0	1.0 U	1.0	9.3	1.6	1.6 U	1.6	10.2	1.0	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		3.8	2.3	2.3 U	2.3	12.9	2.1	2.1 U	2.1	15.4	2.3	4.6	2.3
Zinc	5000	27.3	3.8	3.9	3.8	49.6	1.9	3.8	1.9	57.2	3.8	4.8	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		2.9	0.20			75.2	20.0 *			72.6	4.0 **		
Sulfate		34.3	10.0 *			6.8	5.0			22.8	5.0		
Dilution Factor		*=2				*=100				*=25,**=20		*=25	
Method:TAL Metals, Cyanide													

POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW15-A01		MP08-MW15-A01 SOL		MP08-MW15-C01		MP08-MW15-C01 SOL		MP08-MW15-E01		MP08-MW15-E01 SOL	
Sample Type		Total		Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble	
Batch#		9502G403		9502G403		9502G403		9502G403		9502G403		9502G403	
Prep#		95GCN053		95GI460		95GCN053		95GI460		95GCN053		95GI460	
RFW#		003		004		005		006		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		2/22/95		2/22/95		2/22/95		2/22/95	
Analysis Date		3/7/95		3/8/95		3/7/95		3/8/95		3/7/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	540	24.0	24.0 U	24.0	515	24.0	24.0 U	24.0	24.0 U	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	260	1.7	173	1.7	261	1.7	174	1.7	1.7 U	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		310000	10.4	305000	10.4	315000	10.4	315000	10.4	107	10.4	57.1	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	3.9	2.9	2.9 U	2.9	4.3	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Iron	300	27200	6.4	18100	6.4	27300	6.4	18200	6.4	6.4 U	6.4	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		34700	685	33500	685	34900	685	34000	685	685 U	685	685 U	685
Magnesium		71500	18.3	71000	18.3	73000	18.3	73000	18.3	18.3 U	18.3	18.3 U	18.3
Manganese	50	375	1.8	363	1.8	380	1.8	375	1.8	1.8 U	1.8	1.8 U	1.8
Sodium	50000	226000	30.5	225000	30.5	230000	30.5	231000	30.5	140	30.5	156	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	11.4	10.8	10.8 U	10.8
Lead	10	2.9	1.6	1.6 U	1.6	2.6	1.6	11.1	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		7.4	2.3	3.4	2.3	6.0	2.3	3.1	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	13.5	3.8	3.8 U	3.8	13.9	3.8	3.8 U	3.8	3.8 U	3.8	3.8 U	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		31.8	0.20			31.9	0.20			0.20 U	0.20		
Sulfate		71.5	5.0			72.7	5.0			5.0 U	5.0		
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M12		M12		M12		M12	
Sample		MP08-MW15-A02		MP08-MW15-A02 SOL		MP12-MW16-A01		MP12-MW16-A01 SOL		MP12-MW16-A02		MP12-MW16-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9502G299		9502G299		9503G681		9503G681	
Prep#		95GI519		95GI519		95GI450		95GI450		95GI494		95GI494	
RFW#		012		013		001		002		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		2/20/95		2/20/95		3/10/95		3/10/95	
Analysis Date		3/21/95		3/21/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	596	24.0	28.9	24.0	1460	16.8	73.3	16.8	462	16.8	32.9	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	4.8	1.3	2.7	1.3	3.3	1.7	1.9	1.7
Barium	2000	277	1.7	190	1.7	50.3	0.80	40.7	0.80	43.9	0.80	38.6	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		357000	10.4	328000	10.4	7840	8.4	7720	8.4	7880	8.4	8040	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	3.5	2.9	3.3	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	2.9	2.3	2.9	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.2	2.9	2.9 U	2.9	21.7	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	24300	6.4	15100	6.4	21000	2.5	15700	2.5	18300	2.5	15500	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.31	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		36000	685	32700	685	3360	67.9	2660	67.9	2720	67.9	2600	67.9
Magnesium		75000	18.3	69100	18.3	6320	34.3	5900	34.3	5920	34.3	5780	34.3
Manganese	50	382	1.8	345	1.8	47.0	0.90	44.3	0.90	45.1	0.90	43.7	0.90
Sodium	50000	228000	30.5	210000	30.5	17300	19.1	17500	19.1	17000	19.1	17000	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	5.4	4.2	6.0	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	1.3	1.0	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.4	1.2	1.2 U	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		8.0	2.3	3.3	2.3	8.8	2.1	2.1 U	2.1	3.9	2.1	2.1 U	2.1
Zinc	5000	28.3	3.8	3.8 U	3.8	22.4	1.9	18.2	1.9	19.1	1.9	19.2	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		28.6	2.0 *										
Sulfate		90.0	25.0 **										
Dilution Factor		*=10,**=5											
Method:TAL Metals, Cyanide													

N POST
GROUNDWATER INORGANICS

Geographical Location		M12		M12		M12		M12		M12		M12	
Sample		MP12-MW17-A01		MP12-MW17-A01 SOL		MP12-MW17-A02		MP12-MW17-A02 SOL		MP12-MW18-A01		MP12-MW18-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G299		9502G299		9503G681		9503G681		9502G299		9502G299	
Prep#		95GI450		95GI450		95GI494		95GI494		95GI450		95GI450	
RFW#		003		004		003		004		005		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		2/20/95		3/10/95		3/10/95		2/20/95		2/20/95	
Analysis Date		3/6/95		3/6/95		3/15/95		3/15/95		3/6/95		3/6/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	161	16.8	16.8 U	16.8	186	16.8	16.8 U	16.8	903	16.8	206	16.8
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.7 U	1.7	1.7 U	1.7	2.0	1.3	1.3 U	1.3
Barium	2000	111	0.80	108	0.80	257	0.80	258	0.80	136	0.80	113	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		48500	8.4	48600	8.4	51900	8.4	51300	8.4	6360	8.4	6250	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	4.2	2.3	2.3 U	2.3
Chromium	100	6.5	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	13.0	4.7	4.7 U	4.7
Copper	1000	21.6	4.0	4.0 U	4.0	6.6	4.0	4.0 U	4.0	5.9	4.0	4.0 U	4.0
Iron	300	21700	2.5	21200	2.5	40800	2.5	40200	2.5	2370	2.5	140	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		4580	67.9	4440	67.9	4180	67.9	4100	67.9	5400	67.9	4950	67.9
Magnesium		3770	34.3	3760	34.3	5040	34.3	5040	34.3	3990	34.3	3770	34.3
Manganese	50	173	0.90	174	0.90	339	0.90	341	0.90	17.7	0.90	16.2	0.90
Sodium	50000	8670	19.1	8690	19.1	11900	19.1	12100	19.1	21200	19.1	21200	19.1
Nickel	100	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	9.2	4.2	8.4	4.2
Lead	10	1.6 U	1.6	1.6 U	1.6	1.8	1.2	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	4.5	2.1	2.1 U	2.1
Zinc	5000	6.8	1.9	1.9 U	1.9	12.4	1.9	3.5	1.9	46.6	1.9	44.7	1.9
Cyanide	200	10 U	10			10.0 U	10.0			10 U	10		
Ammonia as Nitrogen													
Sulfate													
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M12		M12		M14		M14		M14		M14	
Sample		MP12-MW18-A02		MP12-MW18-A02 SOL		MP14-MW19-A01		MP14-MW19-A01 SOL		MP14-MW19-A02		MP14-MW19-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G681		9503G681		9502G299		9502G299		9503G681		9503G681	
Prep#		95GI494		95GI494		95GI450		95GI450		95GI494		95GI494	
RFW#		005		006		007		008		007		008	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		3/10/95		2/20/95		2/20/95		3/10/95		3/10/95	
Analysis Date		3/15/95		3/15/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	563	16.8	195	16.8	266	16.8	27.2	16.8	520	16.8	16.8 U	16.8
Arsenic	8	1.7 U	1.7	1.7 U	1.7	1.3 U	1.3	1.3 U	1.3	1.7 U	1.7	1.7 U	1.7
Barium	2000	131	0.80	114	0.80	223	0.80	215	0.80	206	0.80	182	0.80
Beryllium	20	0.30 U	0.30	0.34	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		6110	8.4	6250	8.4	37900	8.4	37700	8.4	39500	8.4	39000	8.4
Cadmium	4	3.4	2.9	3.5	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	2.9	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	7.5	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	4.3	4.0	4.8	4.0	8.6	4.0	4.0 U	4.0	7.7	4.0	4.0 U	4.0
Iron	300	1220	2.5	55.9	2.5	40900	2.5	38800	2.5	41900	2.5	37600	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		4830	67.9	4700	67.9	4640	67.9	4460	67.9	4680	67.9	4480	67.9
Magnesium		3880	34.3	3810	34.3	5240	34.3	5160	34.3	5130	34.3	4980	34.3
Manganese	50	15.9	0.90	15.0	0.90	547	0.90	543	0.90	554	0.90	538	0.90
Sodium	50000	20900	19.1	20900	19.1	8900	19.1	8940	19.1	8730	19.1	8440	19.1
Nickel	100	6.4	4.2	4.7	4.2	4.6	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	5.4	1.2	1.2 U	1.2	13.8	1.6	1.6 U	1.6	23.7	1.2	1.2 U	1.2
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Zinc	5000	44.0	1.9	42.5	1.9	66.9	1.9	1.9 U	1.9	112	1.9	3.3	1.9
Cyanide	200	10.0 U	10.0			10 U	10			10.0 U	10.0		
Ammonia as Nitrogen													
Sulfate													
Dilution Factor													
Method:TAL Metals, Cyanide													

N 'OST
GROUNDWATER INORGANICS

Geographical Location		M14		M14		M14		M14		M14		M14		M14	
Sample		MP14-MW20-A01		MP14-MW20-A01 SOL		MP14-MW20-A02		MP14-MW20-A02 SOL		MP14-MW20-E02		MP14-MW20-E02 SOL		MP14-MW21-A01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9502G403		9502G403		9503G722		9503G722		9503G722		9503G722		9502G403	
Prep#		95GCN053		95GI460		95GI503		95GI503		95GI503		95GI503		95GCN053	
RFW#		010		011		001		002		003		004		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		3/13/95		3/13/95		3/13/95		3/13/95		2/22/95	
Analysis Date		3/7/95		3/8/95		3/15/95		3/15/95		3/15/95		3/15/95		3/7/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	1290	24.0	63.0	24.0	517	16.8	85	16.8	16.8 U	16.8	16.8 U	16.8	1130	24.0
Arsenic	8	2.4	1.9	1.9 U	1.9	10.2	1.3	8.8	1.3	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9
Barium	2000	53.4	1.7	25.6	1.7	44.0	0.80	31.1	0.80	0.80 U	0.80	1.2	0.80	27.0	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.34	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		30400	10.4	28300	10.4	33300	8.4	32500	8.4	103	8.4	102	8.4	32400	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	16.9	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	10.8	2.9
Copper	1000	4.7	1.9	1.9 U	1.9	11.9	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9
Iron	300	8890	6.4	4480	6.4	7030	2.5	5350	2.5	9.6	2.5	9.2	2.5	4880	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		5340	685	4230	685	5292	67.9	3800	67.9	67.9 U	67.9	67.9 U	67.9	6920	685
Magnesium		4330	18.3	3720	18.3	4210	34.3	4010	34.3	34.3 U	34.3	34.3 U	34.3	3930	18.3
Manganese	50	186	1.8	171	1.8	213	0.90	209	0.90	0.90 U	0.90	0.90 U	0.90	62.5	1.8
Sodium	50000	23300	30.5	22100	30.5	21900	19.1	20600	19.1	56.3	19.1	142	19.1	6360	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	9.2	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8
Lead	10	3.8	1.6	1.6 U	1.6	5.5	1.1	1.1 U	1.1	1.5	1.1	1.1 U	1.1	3.1	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		8.5	2.3	4.0	2.3	4.0	2.1	3.1	2.1	2.1 U	2.1	2.1 U	2.1	7.1	2.3
Zinc	5000	7.2	3.8	3.8 U	3.8	21.8	1.9	10.1	1.9	3.9	1.9	4.2	1.9	11.1	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M14		M14		M14		M18		M18		M18		M18	
Sample		MP14-MW21-A01 SOL		MP14-MW21-A02		MP14-MW21-A02 SOL		MP18-MW03-A01		MP18-MW03-A01 SOL		MP18-MW03-A02		MP18-MW03-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G403		9503G660		9503G660		9505G825		9505G825		9505G139		9505G139	
Prep#		95GI460		95GI488		95GI488		95GI713		95GI713		95GI761		95GI761	
RFW#		013		019		020		001		002		001		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		3/9/95		3/9/95		5/10/95		5/10/95		5/25/95		5/25/95	
Analysis Date		3/8/95		3/13/95		3/13/95		5/24/95		5/24/95		6/7/95		6/7/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Aluminum	200	24.0 U	24.0	1630	24.0	24.0 U	24.0	6410	15.7	368	15.7	8980	15.7	251	15.7
Arsenic	8	1.9 U	1.9	3.7	1.3	1.8	1.3	4.5	1.4	1.4 U	1.4	5.1	1.7	1.7 U	1.7
Barium	2000	23.3	1.7	43.4	1.7	22.4	1.7	12.1	0.80	2.3	0.80	15.2	0.80	1.5	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.77 U	0.30	0.30 U	0.30	1.2	0.30	0.30 U	0.30
Calcium		32600	10.4	33200	10.4	33900	10.4	5650	13.4	5270	13.4	5290	13.4	4320	13.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	3.9 U	3.9	3.9 U	3.9	3.9 U	3.9	4.7	3.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.3	1.4	2.5	1.4	5.0	1.4	3.1	1.4
Chromium	100	36.6	2.9	14.5	2.9	2.9 U	2.9	75.7 U	3.8	7.9	3.8	107.0	3.8	12.5	3.8
Copper	1000	1.9 U	1.9	2.7	1.9	1.9 U	1.9	2.7	1.8	3.1	1.8	3	1.8	1.8 U	1.8
Iron	300	625	6.4	6490	6.4	407	6.4	33000	3.6	2110	3.6	46900	3.6	1500	3.6
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6610	685	8060	685	7110	685	9770	81.2	3340	81.2	11700	81.2	3280	81.2
Magnesium		3600	18.3	4190	18.3	3780	18.3	5850	37.2	3170	37.2	6440	37.2	2600	37.2
Manganese	50	56.4	1.8	66.4	1.8	56.7	1.8	32.6	0.70	18.6	0.70	44.0	0.70	16.7	0.70
Sodium	50000	6460	30.5	7040	30.5	7850	30.5	58700	11.8	58600	11.8	53200	11.8	53500	11.8
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	6.4	5.4	5.4	5.4	8.2	5.4	6.0	5.4
Lead	10	1.6 U	1.6	3.8	1.6	1.6	1.6	6.1	0.80	0.80 U	0.80	10.3	0.90	0.90 U	0.90
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	12.0 U	12.0	12.0 U	12.0	12.0 U	12.0	14.6	12.0
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	10.4	2.3	4.6	2.3	35.9	1.5	2.2	1.5	53.6	1.5	5.3	1.5
Zinc	5000	3.8 U	3.8	15.9	3.8	3.8 U	3.8	78.2	2.2	33.9	2.2	99.6	2.2	28.4	2.2
Cyanide	200			10 U	10										
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

I POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW03-E01		MP18-MW03-E01 SOL		MP18-MW24-A01		MP18-MW24-A01 SOL		MP18-MW24-A02		MP18-MW24-A02 SOL	
Sample Type		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total		Soluble	
Batch#		9505G825		9505G825		9502G238		9502G238		9503G681		9503G681	
Prep#		95GI713		95GI713		95GI397		95GI397		95GI494		95GI494	
RFW#		004		005		001		002		009		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95		3/10/95	
Analysis Date		5/24/95		5/24/95		2/22/95		2/22/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	1.9 U	1.9	1.9 U	1.9	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	33.2	15.7	20.5	15.7	3790	24.0	46.2	24.0	7440	16.8	50.2	16.8
Arsenic	8	1.4 U	1.4	1.4 U	1.4	13.0	1.9	3.7	1.9	20.3	1.7	4.9	1.7
Barium	2000	0.92	0.80	0.80 U	0.80	272	1.7	183	1.7	262	0.80	169	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	1.6	0.90	1.2	0.90	1.4	0.30	0.56	0.30
Calcium		65.6	13.4	45.4	13.4	714000	10.4	680000	10.4	787000	42.0 *	748000	42.0 *
Cadmium	4	3.9 U	3.9	3.9 U	3.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		2.2	1.4	2.2	1.4	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3
Chromium	100	3.8 U	3.8	4.1	3.8	33.8	2.9	3.6	2.9	62.5	4.7	4.7 U	4.7
Copper	1000	2.9	1.8	1.8 U	1.8	9.4	1.9	4.6	1.9	7.5	4.0	4.0 U	4.0
Iron	300	19.3	3.6	13.1	3.6	37900	6.4	15300	6.4	42100	2.5	16300	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		81.2 U	81.2	81.2 U	81.2	18900	685	16800	685	19500	67.9	16200	67.9
Magnesium		37.2 U	37.2	37.2 U	37.2	54300	18.3	51400	18.3	45200	34.3	47900	34.3
Manganese	50	1.1	0.70	0.72	0.70	756	1.8	697	1.8	668	0.90	666	0.90
Sodium	50000	101	11.8	94.1	11.8	47100	30.5	45700	30.5	36900	19.1	38400	19.1
Nickel	100	5.4 U	5.4	5.4 U	5.4	10.8 U	10.8	10.8 U	10.8	11.4	4.2	4.2 U	4.2
Lead	10	0.80 U	0.80	0.80 U	0.80	28.6	1.6	1.6 U	1.6	40.8	2.4 **	1.2 U	1.2
Antimony	20	12.0 U	12.0	12.0 U	12.0	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	2.4	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		1.5 U	1.5	1.5 U	1.5	22.3	2.3	2.3 U	2.3	36.0	2.1	2.4	2.1
Zinc	5000	2.2 U	2.2	2.2 U	2.2	80.5	3.8	4.2	3.8	101	1.9	12.6	1.9
Cyanide	200												
Ammonia as Nitrogen													
Sulfate													
Dilution Factor										* = 5, ** = 2		* = 5	
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW24-C02		MP18-MW24-C02 SOL		MP18-MW24-E01		MP18-MW24-E01 SOL		MP18-MW24-E02		MP18-MW24-E02 SOL		MP18-MW25-A01	
Sample Type		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9503G681		9503G681		9502G238		9502G238		9503G681		9503G681		9502G238	
Prep#		95GI494		95GI494		95GI397		95GI397		95GI494		95GI494		95GI397	
RFW#		011		012		004		005		014		015		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		3/10/95		2/17/95		2/17/95		3/10/95		3/10/95		2/17/95	
Analysis Date		3/15/95		3/15/95		2/22/95		2/22/95		3/15/95		3/15/95		2/22/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	7330	16.8	36.2	16.8	25.0	24.0	28.4	24.0	20.0	16.8	16.8 U	16.8	293	24.0
Arsenic	8	20.6	3.4 **	6.4	1.7	1.9 U	1.9	1.9 U	1.9	1.7 U	1.7	1.7 U	1.7	6.3	1.9
Barium	2000	262	0.80	158	0.80	1.7 U	1.7	1.7 U	1.7	0.80 U	0.80	0.80 U	0.80	64.4	1.7
Beryllium	20	1.7	0.30	0.57	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		780000	42.0 *	727000	42.0 *	282	10.4	161	10.4	460	8.4	106	8.4	167000	10.4
Cadmium	4	4.1	2.9	2.9	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		2.8	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	64.7	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	3.9	2.9
Copper	1000	9.2	4.0	4.0 U	4.0	1.9 U	1.9	2.7	1.9	5.4	4.0	4.0	4.0	2.1	1.9
Iron	300	43800	2.5	15200	2.5	13.4	6.4	13.5	6.4	24.5	2.5	15.7	2.5	7540	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		19100	67.9	15100	67.9	685 U	685	685 U	685	67.9 U	67.9	67.9 U	67.9	26500	685
Magnesium		45100	34.3	44300	34.3	20.0	18.3	23.9	18.3	34.3 U	34.3	34.3 U	34.3	63100	18.3
Manganese	50	680	0.90	634	0.90	1.8 U	1.8	1.8 U	1.8	0.90 U	0.90	0.90 U	0.90	1050	1.8
Sodium	50000	35800	19.1	35600	19.1	160	30.5	118	30.5	75.8	19.1	97.2	19.1	293000	30.5
Nickel	100	11.3	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8
Lead	10	44.6	2.4 **	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	1.6 U	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	21	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.8	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		37.1	2.1	2.1 U	2.1	2.3 U	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	6.7	2.3
Zinc	5000	103	1.9	13.7	1.9	3.8 U	3.8	3.8 U	3.8	1.9 U	1.9	1.9 U	1.9	4.0	3.8
Cyanide	200														
Ammonia as Nitrogen															
Sulfate															
Dilution Factor		* = 5, ** = 2		* = 5											
Method:TAL Metals, Cyanide															

POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-MW25-A01 SOL		MP18-MW25-A02		MP18-MW25-A02 SOL		MP18-MW25-C01		MP18-MW25-C01 SOL	
Sample Type		Soluble		Total		Soluble		Duplicate - Total		Duplicate - Soluble	
Batch#		9502G238		9503G681		9503G681		9502G238		9502G238	
Prep#		95GI397		95GI494		95GI494		95GI397		95GI397	
RFW#		007		016		015		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/17/95		3/10/95		3/10/95		2/17/95		2/17/95	
Analysis Date		2/22/95		3/15/95		3/15/95		2/22/95		2/22/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	30.8	24.0	7640	16.8	16.8 U	16.8	566	24.0	28.3	24.0
Arsenic	8	6.0	1.9	16.5	1.7	4.8	1.7	5.8	1.9	5.3	1.9
Barium	2000	57.3	1.7	117	0.80	60.2	0.80	68.8	1.7	66.1	1.7
Beryllium	20	0.90 U	0.90	0.91	0.30	0.35	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		163000	10.4	162000	8.4	161000	8.4	176000	10.4	159000	10.4
Cadmium	4	2.8 U	2.8	5.8	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	2.5	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	40.7	4.7	4.7 U	4.7	5.7	2.9	2.9 U	2.9
Copper	1000	2.1	1.9	4.0 U	4.0	4.0 U	4.0	3.2	1.9	2.7	1.9
Iron	300	5100	6.4	49700	2.5	11700	2.5	6650	6.4	11000	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		25000	685	33300	67.9	29400	67.9	26300	685	34700	685
Magnesium		60600	18.3	75000	34.3	70100	34.3	63100	18.3	81000	18.3
Manganese	50	1030	1.8	830	0.90	730	0.90	1030	1.8	874	1.8
Sodium	50000	277000	30.5	434000	19.1	412000	19.1	284000	30.5	488000	30.5
Nickel	100	10.8 U	10.8	14.6	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	21.6	6.0 *	1.2 U	1.2	1.7	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.4	2.3	41.6	2.1	5.3	2.1	8.1	2.3	4.4	2.3
Zinc	5000	3.8 U	3.8	62.4	1.9	3.4	1.9	4.7	3.8	3.8 U	3.8
Cyanide	200										
Ammonia as Nitrogen											
Sulfate											
Dilution Factor				*=5							
Method:TAL Metals, Cyanide											

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B1		B1		B1		B1		B2		B2	
Sample		B1-MW01B-A01		B1-MW01B-A01 SOL		B1-MW01B-A02		B1-MW01B-A02 SOL		B2-MW02B-A01		B2-MW02B-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G169		9502G169		9503G616		9503G616		9502G169		9502G169	
Prep#		95GI422		95GI422		95GI475		95GI475		95GI422		95GI422	
RFW#		001		002		008		009		003		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/14/95		2/14/95		3/7/95		3/7/95		2/15/95		2/15/95	
Analysis Date		2/23/95		2/27/95		3/13/95		3/13/95		2/23/95		2/27/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	2430	16.8	146	16.8	634	16.8	116	16.8	1070	16.8	40.9	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	4.8	1.9	1.9 U	1.9
Barium	2000	68.5	0.80	62.5	0.80	62.9	0.80	60.2	0.80	73.9	0.80	67.3	0.80
Beryllium	20	0.43	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		5130	8.4	5090	8.4	4910	8.4	5040	8.4	40300	8.4	40200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		6.4	2.3	4.6	2.3	4.5	2.3	4.9	2.3	4.0	2.3	2.3 U	2.3
Chromium	100	43.8	4.7	4.7 U	4.7	12.9	4.7	4.7 U	4.7	7.4	4.7	4.7 U	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	12300	2.5	18.0	2.5	2430	2.5	20.9	2.5	40100	2.5	26600	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3640	67.9	2880	67.9	3110	67.9	2910	67.9	9100	67.9	8790	67.9
Magnesium		9050	34.3	8640	34.3	8880	34.3	8850	34.3	7250	34.3	6730	34.3
Manganese	50	56.7	0.90	46.6	0.90	47.2	0.90	45.4	0.90	148	0.90	118	0.90
Sodium	50000	7070	19.1	7120	19.1	7020	19.1	7110	19.1	6170	19.1	6270	19.1
Nickel	100	40.1	4.2	35.4	4.2	32.0	4.2	33.2	4.2	5.8	4.2	6.4	4.2
Lead	10	2.8	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	2.7	1.6	1.6 U	1.6
Antimony	20	16.7	10.9	10.9 U	10.9	10.9 U	10.9	11.0	10.9	12	10.9	15.1	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	3.5 U	3.5	0.70 U	0.70
Vanadium		50.4	2.1	2.1 U	2.1	10.6	2.1	2.1 U	2.1	13.6	2.1	2.1 U	2.1
Zinc	5000	35.8	1.9	24.4	1.9	24.5	1.9	23.4	1.9	13.6	1.9	8.4	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10		
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B2		B2		B3		B3		B3	
Sample		B2-MW02B-A02		B2-MW02B-A02 SOL		B3-MW03B-A01		B3-MW03B-A01 SOL		B3-MW03B-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9503G616		9503G616		9502G169		9502G169		9503G740	
Prep#		95GI475		95GI475		95GI422		95GI422		95GI519	
RFW#		010		011		005		009		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/7/95		3/7/95		2/15/95		2/13/95		3/14/95	
Analysis Date		3/13/95		3/13/95		2/23/95		2/27/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	454	16.8	16.8 U	16.8	5010	16.8	16.8 U	16.8	121000	24.0
Arsenic	8	3.9	1.9	1.9 U	1.9	7.1	1.9	1.9 U	1.9	89.3	9.5 *
Barium	2000	75.2	0.80	72.3	0.80	144	0.80	0.80 U	0.80	556	1.7
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.78	0.30	0.30 U	0.30	15.1	0.90
Calcium		41000	8.4	41100	8.4	27600	8.4	83.8	8.4	45400	10.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	9.5	2.8
Cobalt		2.3 U	2.3	2.3 U	2.3	9.4	2.3	2.3 U	2.3	50.0	3.0
Chromium	100	4.7 U	4.7	4.7 U	4.7	61.6	4.7	4.7 U	4.7	1600	2.9
Copper	1000	4.0 U	4.0	4.0 U	4.0	5.2	4.0	4.0 U	4.0	65.6	1.9
Iron	300	35000	2.5	28000	2.5	18800	2.5	9.4	2.5	431000	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9180	67.9	9300	67.9	18400	67.9	67.9 U	67.9	137000	685
Magnesium		7300	34.3	7200	34.3	8230	34.3	34.3 U	34.3	62700	18.3
Manganese	50	129	0.90	119	0.90	106	0.90	0.90 U	0.90	331	1.8
Sodium	50000	6660	19.1	6820	19.1	21500	19.1	93.3	19.1	19600	30.5
Nickel	100	4.2 U	4.2	4.2 U	4.2	66.3	4.2	4.2 U	4.2	187	10.8
Lead	10	1.2 U	1.2	2.1	1.2	2.9	1.6	1.6 U	1.6	76.6	5.0 *
Antimony	20	10.9	10.9	10.9 U	10.9	14.1	10.9	16.8	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	4.2	1.5	1.5 U	1.5	22	3.0 **
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	5.5	5.5 *
Vanadium		4.7	2.1	2.1 U	2.1	23.1	2.1	2.1 U	2.1	452	2.3
Zinc	5000	9.7	1.9	5.8	1.9	63.0	1.9	4.0	1.9	801	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10.0
Dilution Factor										* = 5, ** = 2	
Method:TAL Metals, Cyanide											

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B3		B3		B3		B3		B3		B4	
Sample		B3-MW03B-A02 SOL		B3-MW03B-E01		B3-MW03B-E01 SOL		B3-MW03B-E02		B3-MW03B-E02 SOL		B4-MW04B-A01	
Sample Type		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9503G740		9502G169		9502G169		9503G616		9503G616		9502G169	
Prep#		95GI519		95GI422		95GI422		95GI475		95GI475		95GI422	
RFW#		002		008		006		006		007		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/14/95		2/14/95		3/7/95		3/7/95		2/13/95	
Analysis Date		3/21/95		2/23/95		2/27/95		3/13/95		3/13/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	84.1	24.0	26.2	16.8	173	16.8	27.1	16.8	17.2	16.8	1890	16.8
Arsenic	8	2.1	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	93.1	1.7	1.0	0.80	113	0.80	0.80 U	0.80	0.80 U	0.80	56.8	0.80
Beryllium	20	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.36	0.30
Calcium		24900	10.4	123	8.4	25400	8.4	368	8.4	163	8.4	4460	8.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.4	3.0	2.3 U	2.3	7.3	2.3	2.3 U	2.3	2.3 U	2.3	2.7	2.3
Chromium	100	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	18.4	4.7
Copper	1000	2.9	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	10000	6.4	16.5	2.5	109	2.5	10.1	2.5	9.3	2.5	4510	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.26	0.20
Potassium		8400	685	67.9 U	67.9	13200	67.9	67.9 U	67.9	67.9 U	67.9	4690	67.9
Magnesium		6390	18.3	34.3 U	34.3	5790	34.3	46.0	34.3	61.3	34.3	7430	34.3
Manganese	50	104	1.8	0.90 U	0.90	90.1	0.90	0.90 U	0.90	0.90 U	0.90	11.8	0.90
Sodium	50000	20100	30.5	820	19.1	20800	19.1	296	19.1	179	19.1	12600	19.1
Nickel	100	33.3	10.8	4.2 U	4.2	61.5	4.2	4.2 U	4.2	4.2 U	4.2	8.5	4.2
Lead	10	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	16.7	10.9	10.9 U	10.9	10.9 U	10.9	12.1	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	6.6	2.1
Zinc	5000	39.4	3.8	2.0	1.9	27.0	1.9	1.9 U	1.9	1.9 U	1.9	51.4	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B4		B4		B4		B5		B5		B5	
Sample		B4-MW04B-A01 SOL		B4-MW04B-A02		B4-MW04B-A02 SOL		B5-MW05B-A01		B5-MW05B-A01 SOL		B5-MW05B-A02	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G169		9503G616		9503G616		9502G169		9502G169		9503G616	
Prep#		95GI422		95GI475		95GI475		95GI422		95GI422		95GI475	
RFW#		011		012		013		012		013		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/13/95		3/7/95		3/7/95		2/13/95		2/13/95		3/7/95	
Analysis Date		2/27/95		3/13/95		3/13/95		2/23/95		2/27/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	605	16.8	3700	16.8	673	16.8	5630	16.8	113	16.8	26000	16.8
Arsenic	8	1.9 U	1.9	2.1	1.9	1.9 U	1.9	15.8	1.9	1.9 U	1.9	56	9.5 *
Barium	2000	43.9	0.80	71.5	0.80	48.2	0.80	299	0.80	147	0.80	699	0.80
Beryllium	20	0.30 U	0.30	0.35	0.30	0.30 U	0.30	0.67	0.30	0.30 U	0.30	2.1	0.30
Calcium		4540	8.4	5160	8.4	5040	8.4	13800	8.4	13600	8.4	16400	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	3.8	2.9	2.9 U	2.9	4.6	2.9
Cobalt		2.3 U	2.3	3.5	2.3	2.3 U	2.3	15.6	2.3	13.3	2.3	18.3	2.3
Chromium	100	4.7 U	4.7	42.2	4.7	4.7 U	4.7	33.9	4.7	4.7 U	4.7	191	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	10.0	4.0	4.0 U	4.0	43.0	4.0
Iron	300	18.5	2.5	10500	2.5	19.3	2.5	15500	2.5	277	2.5	72100	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3580	67.9	6830	67.9	3810	67.9	8730	67.9	6910	67.9	16800	67.9
Magnesium		7030	34.3	9460	34.3	8120	34.3	7050	34.3	5900	34.3	12400	34.3
Manganese	50	10.8	0.90	14.5	0.90	11.0	0.90	166	0.90	145	0.90	233	0.90
Sodium	50000	12900	19.1	13900	19.1	14300	19.1	15900	19.1	16200	19.1	17900	19.1
Nickel	100	9.2	4.2	5.4	4.2	6.2	4.2	96.7	4.2	89.8	4.2	120	4.2
Lead	10	1.6 U	1.6	2.4	1.2	1.2 U	1.2	5.8	1.6	1.6 U	1.6	22.7	1.2
Antimony	20	12.9	10.9	10.9 U	10.9	12.3	10.9	14.5	10.9	15.8	10.9	12.1	10.9
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	8.0	1.5	4.1	1.5	29.6	3.6 **
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	5.5 U	5.5 *
Vanadium		2.1 U	2.1	14.8	2.1	2.1 U	2.1	22.8	2.1	2.1 U	2.1	108	2.1
Zinc	5000	44.8	1.9	63.7	1.9	55.5	1.9	115	1.9	74.3	1.9	233	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10
Dilution Factor												* = 5.0, ** = 2.0	
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B5	
Sample		B5-MW05B-A02 SOL	
Sample Type		Soluble	
Batch#		9503G616	
Prep#		95GI475	
RFW#		002	
Dilution Factor		1.00	
Matrix		water, filtered	
Units	ug/l	ug/l	
Sampling Date		3/7/95	
Analysis Date		3/13/95	
Analysis	Standard	Analytical Result	MDL
Silver	20	2.5 U	2.5
Aluminum	200	108	16.8
Arsenic	8	1.9 U	1.9
Barium	2000	99.6	0.80
Beryllium	20	0.30 U	0.30
Calcium		14100	8.4
Cadmium	4	3.7	2.9
Cobalt		11.6	2.3
Chromium	100	4.7 U	4.7
Copper	1000	4.0 U	4.0
Iron	300	300	2.5
Mercury	2	0.20 U	0.20
Potassium		6280	67.9
Magnesium		6420	34.3
Manganese	50	146	0.90
Sodium	50000	17200	19.1
Nickel	100	76.9	4.2
Lead	10	1.2 U	1.2
Antimony	20	10.9 U	10.9
Selenium	50	4.4	1.8
Thallium	10	1.1 U	1.1
Vanadium		2.1 U	2.1
Zinc	5000	82.4	1.9
Cyanide	200		
Dilution Factor			
Method:TAL Metals, Cyanide			

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M2		M2		M2		M2		M2		M2	
Sample		MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01		MP02-MW03-A02	
Sample Type													
Batch#		9502G197		9503G642		9502G197		9503G642		9502G197		9503G642	
Prep#		95GP0119		95GP0229		95GP0119		95GP0229		95GP0119		95GP0229	
RFW#		001		001		002		003		003		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		2/15/95		3/8/95		2/15/95		3/8/95	
Analysis Date		3/4/95		3/19/95		3/4/95		3/19/95		3/4/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
beta-BHC	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
delta-BHC		0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
gamma-BHC (Lindane)	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Heptachlor	0.4	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Aldrin	0.04	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Heptachlor epoxide	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Endosulfan I	0.4	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Dieldrin	0.03	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.50 U	0.50	0.48 U	0.48	0.47 U	0.47	0.48 U	0.48	0.52 U	0.52	0.56 U	0.56
Endrin ketone		0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
gamma-Chlordane	0.5	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Toxaphene	3	5.0 U	5.0	4.8 U	4.8	4.7 U	4.7	4.8 U	4.8	5.2 U	5.2	5.6 U	5.6
Aroclor-1016	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.0 U	2.0	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.8 P	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M3		M3		M3		M3		M3		M3	
Sample		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01		MP03-MW06-A02	
Sample Type													
Batch#		9502G219		9503G642		9502G219		9503G660		9502G219		9503G660	
Prep#		95GP0127		95GP0229		95GP0127		95GP0233		95GP0127		95GP0233	
RFW#		001		009		003		003		005		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95		3/9/95	
Analysis Date		3/14/95		3/20/95		3/14/95		3/20/95		3/14/95		3/20/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
beta-BHC	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
delta-BHC		0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Heptachlor	0.4	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Aldrin	0.04	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Heptachlor epoxide	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Endosulfan I	0.4	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Methoxychlor	40	0.54 U	0.54	0.52 U	0.52	0.47 U	0.47	0.56 U	0.56	0.49 U	0.49	0.48 U	0.48
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
alpha-Chlordane		0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
gamma-Chlordane	0.5	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Toxaphene	3	5.4 U	5.4	5.2 U	5.2	4.7 U	4.7	5.6 U	5.6	4.9 U	4.9	4.8 U	4.8
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1221	2	2.2 U	2.2	2.1 U	2.1	1.9 U	1.9	2.2 U	2.2	2.0 U	2.0 U	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01		MP04-MW08-A01	
Sample Type						Duplicate		Duplicate		Field Rinsate Blank			
Batch#		9502G219		9503G660		9502G219		9503G660		9502G219		9502G219	
Prep#		95GP0127		95GP0233		95GP0127		95GP0233		95GP0127		95GP0127	
RFW#		007		005		009		007		012		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95		2/16/95	
Analysis Date		3/14/95		3/20/95		3/14/95		3/20/95		3/14/95		3/14/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
beta-BHC	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
delta-BHC		0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Heptachlor	0.4	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Aldrin	0.04	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Heptachlor epoxide	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Endosulfan I	0.4	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDT	0.1	0.19	0.10	0.11 U	0.11	0.32	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Methoxychlor	40	0.52 U	0.52	0.53 U	0.53	0.52 U	0.52	0.53 U	0.53	0.52 U	0.52	0.62 U	0.62
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
alpha-Chlordane		0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
gamma-Chlordane	0.5	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Toxaphene	3	5.2 U	5.2	5.3 U	5.3	5.2 U	5.2	5.3 U	5.3	5.2 U	5.2	6.2 U	6.2
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1221	2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.5 U	2.5
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M4		M4		M4		M5		M5		M5	
Sample		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02		MP05-MW11-A01	
Sample Type													
Batch#		9503G642		9502G219		9503G660		9502G238		9503G660		9502G238	
Prep#		95GP0229		95GP0127		95GP0233		95GP0135		95GP0233		95GP0135	
RFW#		007		016		009		010		011		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95		2/17/95	
Analysis Date		3/20/95		3/14/95		3/26/95		3/11/95		3/26/95		3/11/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.53 U	0.53	0.62 U	0.62	0.52 U	0.52	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.3 U	5.3	6.2 U	6.2	5.2 U	5.2	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.5 U	2.5	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M5		M5		M8		M8		M8		M8	
Sample		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02		MP08-MW12-C02		MP08-MW12-E02	
Sample Type				Field Rinsate Blank						Duplicate		Field Rinsate Blank	
Batch#		9503G660		9503G660		9502G238		9503G767		9503G767		9503G767	
Prep#		95GP0233		95GP0233		95GP0135		94GP0262		94GP0262		94GP0262	
RFW#		013		016		014		001		003		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/9/95		3/9/95		2/17/95		3/15/95		3/15/95		3/15/95	
Analysis Date		3/26/95		3/28/95		3/11/95		4/15/95		4/15/95		4/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW13-A01		MP08-MW13-A02		MP08-MW14-A01		MP08-MW14-A02		MP08-MW15-A01		MP08-MW15-A02	
Sample Type													
Batch#		9502G403		9503G767		9502G219		9503G767		9502G403		9503G767	
Prep#		95GP0164		94GP0262		95GP0127		94GP0262		95GP0164		94GP0262	
RFW#		001		008		018		010		003		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		3/15/95		2/16/95		3/15/95		2/22/95		3/15/95	
Analysis Date		3/14/95		4/15/95		3/14/95		4/15/95		3/14/95		4/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
beta-BHC	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
delta-BHC		0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Heptachlor	0.4	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Aldrin	0.04	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Heptachlor epoxide	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Endosulfan I	0.4	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Dieldrin	0.03	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.52 U	0.52	0.52 U	0.52	0.48 U	0.48	0.46 U	0.46	0.52 U	0.52	0.53 U	0.53
Endrin ketone		0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
gamma-Chlordane	0.5	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Toxaphene	3	5.2 U	5.2	5.2 U	5.2	4.8 U	4.8	4.6 U	4.6	5.2 U	5.2	5.3 U	5.3
Aroclor-1016	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	1.8 U	1.8	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M8		M8		M12		M12		M12		M12	
Sample		MP08-MW15-C01		MP08-MW15-E01		MP12-MW16-A01		MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A02	
Sample Type		Duplicate		Field Rinsate Blank									
Batch#		9502G403		9502G403		9503G299		9503G681		9503G299		9503G681	
Prep#		95GP0164		95GP0164		95GP0154		95GP0247		95GP0154		95GP0247	
RFW#		005		008		001		001		003		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		2/20/95		3/10/95		2/20/95		3/10/95	
Analysis Date		3/14/95		3/15/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.54 U	0.54	0.53 U	0.53	0.53 U	0.53	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	5.4 U	5.4	5.3 U	5.3	5.3 U	5.3	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.2 U	2.2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M12		M12		M14		M14		M14		M14	
Sample		MP12-MW18-A01		MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type													
Batch#		9503G299		9503G681		9503G299		9503G681		9502G403		9503G722	
Prep#		95GP0154		95GP0247		95GP0154		95GP0247		95GP0164		95GP0247	
RFW#		005		005		007		007		010		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date		3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
beta-BHC	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
delta-BHC		0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
gamma-BHC (Lindane)	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Heptachlor	0.4	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Aldrin	0.04	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Heptachlor epoxide	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Endosulfan I	0.4	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Methoxychlor	40	0.56 U	0.56	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.46 U	0.46	0.60 U	0.60
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
alpha-Chlordane		0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
gamma-Chlordane	0.5	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Toxaphene	3	5.6 U	5.6	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	4.6 U	4.6	6.0 U	6.0
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1221	2	2.2 U	2.2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	2.4 U	2.4
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M14		M14		M14		M16		M16		M18	
Sample		MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP16-MW22-A01		MP16-MW22-A02		MP18-MW03-A01	
Sample Type		Field Rinsate Blank											
Batch#		9503G722		9502G403		9503G660		9502G238		9503G660		9505G825	
Prep#		95GP0247		95GP0164		95GP0233		95GP0135		95GP0233		95GP0510	
RFW#		003		012		019		016		018		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/22/95		3/9/95		2/17/95		3/9/95		5/10/95	
Analysis Date		3/29/95		3/15/95		3/28/95		3/11/95		3/28/95		5/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
beta-BHC	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
delta-BHC		0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Heptachlor	0.4	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Aldrin	0.04	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Heptachlor epoxide	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Endosulfan I	0.4	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Dieldrin	0.03	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDE	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endrin	2	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endosulfan II	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDD	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endosulfan sulfate	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDT	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Methoxychlor	40	0.52 U	0.52	0.47 U	0.47	0.54 U	0.54	0.48 U	0.48	0.52 U	0.52	0.54 U	0.54
Endrin ketone		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endrin aldehyde		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
alpha-Chlordane		0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
gamma-Chlordane	0.5	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Toxaphene	3	5.2 U	5.2	4.7 U	4.7	5.4 U	5.4	4.8 U	4.8	5.2 U	5.2	5.4 U	5.4
Aroclor-1016	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1221	2	2.1 U	2.1	1.9 U	1.9	2.2 U	2.2	1.9 U	1.9	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1242	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1248	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1254	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1260	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02		MP18-MW24-C02		MP18-MW24-E01	
Sample Type		Field Rinsate Blank								Duplicate		Field Rinsate Blank	
Batch#		9505G825		9505G139		9502G238		9503G681		9503G681		9502G238	
Prep#		95GP0510		95GP0580		95GP0135		95GP0247		95GP0248		95GP0135	
RFW#		001		001		001		009		011		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/25/95		2/17/95		3/10/95		3/10/95		2/17/95	
Analysis Date		5/19/95		6/1/95		3/10/95		3/29/95		3/29/95		3/10/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
beta-BHC	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
delta-BHC		0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Heptachlor	0.4	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Aldrin	0.04	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Heptachlor epoxide	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Endosulfan I	0.4	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Dieldrin	0.03	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDE	0.1	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endrin	2	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endosulfan II	0.4	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDD	0.1	0.11 U	0.11 U	0.095 U	0.095	0.18	0.093	0.10 U	0.10	0.11 P	0.10	0.094 U	0.094
Endosulfan sulfate	0.4	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDT	0.1	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Methoxychlor	40	0.54 U	0.54	0.48 U	0.48	0.46 U	0.46	0.52 U	0.52	0.52 U	0.52	0.47 U	0.47
Endrin ketone		0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endrin aldehyde		0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
alpha-Chlordane		0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
gamma-Chlordane	0.5	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Toxaphene	3	5.4 U	5.4	4.8 U	4.8	4.6 U	4.6	5.2 U	5.2	5.2 U	5.2	4.7 U	4.7
Aroclor-1016	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1221	2	2.2 U	2.2	1.9 U	1.9	1.9 U	1.9	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1242	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1248	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1254	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1260	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M18		M18		M18		M18		B1	
Sample		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02		MP18-MW25-C01		B1-MW01B-A01	
Sample Type		Field Rinsate Blank						Duplicate			
Batch#		9503G681		9502G238		9503G681		9502G238		9502G169	
Prep#		95GP0247		95GP0135		95GP0247		95GP0135		95GP0119	
RFW#		014		006		016		008		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		2/17/95		3/10/95		2/17/95		2/14/95	
Analysis Date		3/29/95		3/10/95		3/29/95		3/11/95		3/4/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
beta-BHC	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
delta-BHC		0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Heptachlor	0.4	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Aldrin	0.04	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Heptachlor epoxide	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Endosulfan I	0.4	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.041 J	0.052
Dieldrin	0.03	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.56 U	0.56	0.47 U	0.47	0.53 U	0.53	0.51 U	0.51	0.52 U	0.52
Endrin ketone		0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
gamma-Chlordane	0.5	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Toxaphene	3	5.6 U	5.6	4.7 U	4.7	5.3 U	5.3	5.1 U	5.1	5.2 U	5.2
Aroclor-1016	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.2 U	2.2	1.9 U	1.9	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1
Aroclor-1232	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B1		B2		B2		B3		B3	
Sample		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01		B3-MW03B-A02	
Sample Type											
Batch#		9503G616		9502G169		9503G616		9502G169		9503G740	
Prep#		95GP0219		95GP0119		95GP0219		95GP0119		95GP0251	
RFW#		008		003		010		005		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/7/95		2/14/95		3/7/95		2/14/95		3/14/95	
Analysis Date		3/17/95		3/4/95		3/17/95		3/4/95		4/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
beta-BHC	0.2	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
delta-BHC		0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
gamma-BHC (Lindane)	0.2	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Heptachlor	0.4	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Aldrin	0.04	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Heptachlor epoxide	0.2	0.041 J	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Endosulfan I	0.4	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.050 JP	0.10
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Methoxychlor	40	0.51 U	0.51	0.56 U	0.56	0.52 U	0.52	0.47 U	0.47	0.50 U	0.5
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
alpha-Chlordane		0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
gamma-Chlordane	0.5	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Toxaphene	3	5.1 U	5.1	5.6 U	5.6	5.2 U	5.2	4.7 U	4.7	5.0 U	5.0
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1221	2	2.0 U	2.0	2.2 U	2.2	2.1 U	2.1	1.9 U	1.9	2.0 U	2.0
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B3		B3		B4		B4		B5		B5	
Sample		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02		B5-MW05B-A01		B5-MW05B-A02	
Sample Type		Field Rinsate Blank		Field Rinsate Blank									
Batch#		9502G169		9503G616		9502G169		9503G616		9502G169		9503G616	
Prep#		95GP0119		95GP0219		95GP0119		95GP0219		95GP0119		95GP0219	
RFW#		008		006		010		012		012		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/13/95		3/7/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date		3/4/95		3/17/95		3/4/95		3/17/95		3/4/95		3/17/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
beta-BHC	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
delta-BHC		0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
gamma-BHC (Lindane)	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Heptachlor	0.4	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Aldrin	0.04	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Heptachlor epoxide	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Endosulfan I	0.4	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Dieldrin	0.03	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDE	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endrin	2	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endosulfan II	0.4	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDD	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endosulfan sulfate	0.4	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDT	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Methoxychlor	40	0.48 U	0.48	0.48 U	0.48	0.62 U	0.62	0.52 U	0.52	0.52 U	0.52	0.58 U	0.58
Endrin ketone		0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endrin aldehyde		0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
alpha-Chlordane		0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
gamma-Chlordane	0.5	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Toxaphene	3	4.8 U	4.8	4.8 U	4.8	6.2 U	6.2	5.2 U	5.2	5.2 U	5.2	5.8 U	5.8
Aroclor-1016	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1221	2	1.9 U	1.9	1.9 U	1.9	2.5 U	2.5	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3
Aroclor-1232	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1242	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1248	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1254	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1260	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Building 292		Building 686		Building 718		Building 1002		Building 1002		Building 1004	
Sample		MPT5-TR01-A01		MPT6-TR01-A01		MPT4-TR01-A01		MPT7-CC01-A01		MPT7-CC01-C01		MPT8-TR01-A01	
Sample Type		Transformer		Transformer		Transformer		Concrete		Duplicate		Transformer	
Batch#		9411G832		9411G832		9411G832		9412G922		9412G922		9411G832	
Prep#		94GP1024		94GP1024		94GP1024						94GP1024	
RFW#		007		008		006		010		011		009	
Sample Depth													
Dilution Factor		2.5		0.5		0.5		25000		25000		5.0	
Matrix		soil		soil		soil		Concrete		Concrete		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94						11/29/94	
Analysis Date		12/21/94		12/21/94		12/22/94		12/31/94		12/31/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		81.3	0.10	89.4	0.10	77.7	0.10					88.2	0.10
Aroclor-1016	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1221	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1232	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1242	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1248	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	8400	2000	6300	1900	0.45 U	0.45
Aroclor-1254	0.055	0.48 U	0.48	0.089 U	0.089	0.1 U	0.1	3900 U	3900	3900 U	3900	0.89 U	0.89
Aroclor-1260	0.055	0.68		0.18		0.059 J	0.1	3900 U	3900	3900 U	3900	0.89 U	0.89
Method:TCL PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Building 1208		Building 1208		Building 1209		Bulding 1220		Bulding 1220		Bulding 1220	
Sample		MPT2-CC01-A01		MPT2-CC01-A01DL		MPT1-CC01-A01		MPT3-TR01-A01		MPT3-TR02-A01		MPT3-TR03-A01	
Sample Type		Concrete		Concrete		Concrete		Transformer		Transformer		Transformer	
Batch#		9412G922		9412G922		9412G922		9411G832		9411G832		9411G832	
Prep#								94GP1024		94GP1024		94GP1024	
RFW#		009DL		009		008		001		002		003	
Sample Depth													
Dilution Factor		25000		50000		5000		0.5		0.5		0.5	
Matrix		Concrete		Concrete		Concrete		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date						NA		11/29/94		11/29/94		11/29/94	
Analysis Date		12/31/94		12/31/94		12/31/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids								88.3	0.10	96.4	0.10	84.9	0.10
Aroclor-1016	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1221	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1232	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1242	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1248	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1254	0.055	4000 U	4000	NA	NA	790 U	790	0.089 U	0.089	0.082 U	0.082	0.094 U	0.094
Aroclor-1260	0.055	E		19000	8000	1500	790	0.015 J	0.089	0.082 U	0.082	0.063 J	0.094
Method:TCL PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Bulding 1220		Bulding 1220		Building 1220	
Sample		MPT3-TR04-A01		MPT3-TR04-C01		MPT3-CC01-A01	
Sample Type		Transformer		Duplicate		Concrete	
Batch#		9411G832		9411G832		9412G922	
Prep#		94GP1024		94GP1024			
RFW#		004		005		007	
Sample Depth							
Dilution Factor		0.5		0.5		0.50	
Matrix		soil		soil		Concrete	
Units	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		NA	
Analysis Date		12/21/94		12/22/94		12/31/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit
% Solids		87.9	0.10	88.0	0.10		
Aroclor-1016	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1221	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1232	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1242	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1248	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1254	0.055	0.090 U	0.09	0.089 U	0.089	0.08 U	0.079
Aroclor-1260	0.055	0.087 J	0.09	0.07 J	0.089	0.026	0.079
Method:TCL PCBs							

CHARLES WOOD

CHARLES WOOD
SEDIMENT VOLATILES

Geographical Location			Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923	
Prep#			94GVT028		94GVT028		94GVT028	
RFW#			005		006		006	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94		12/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		0.0073	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromomethane		0.0067	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Vinyl Chloride		0.0079	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chloroethane		0.0091	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Methylene Chloride		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Acetone		0.0069	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Carbon Disulfide		0.0044	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1-Dichloroethene		0.0049	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1-Dichloroethane		0.003	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloroethene (total)		0.0044	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chloroform		0.0029	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloroethane		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
2-Butanone		0.0041	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,1-Trichloroethane		0.0017	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Carbon Tetrachloride		0.0015	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromodichloromethane		0.002	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloropropane		0.0017	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
cis-1,3-Dichloropropene		0.003	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Trichloroethene		0.002	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Dibromochloromethane		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,2-Trichloroethane		0.0043	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Benzene		0.0033	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
trans-1,3-Dichloropropene		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromoform		0.0031	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
4-Methyl-2-pentanone		0.0055	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
2-Hexanone		0.0039	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Tetrachloroethene		0.004	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,2,2-Tetrachloroethane		0.0042	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Toluene		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chlorobenzene		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Ethylbenzene		0.0031	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Styrene		0.0038	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Xylene (total)		0.0038	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Total Est. Conc. of TIC.					0.02			
Method:TCL Volatiles								

CHARLES WOOD
SEDIMENT SEMIVOLATILES

Geographical Location			Background		Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01R		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923		9412G923	
Prep#			94GBO800		94GBO800		94GBO800		94GBO800	
RFW#			005		006		006		007	
Sample Depth			0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol		0.234	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
bis(2-Chloroethyl) ether		0.32	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Chlorophenol		0.241	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,3-Dichlorobenzene		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,4-Dichlorobenzene		0.158	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,2-Dichlorobenzene		0.188	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Methylphenol		0.221	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Methylphenol		0.426	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
N-Nitroso-di-n-propylamine		0.264	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachloroethane		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Nitrobenzene		0.244	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Isophorone		0.129	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Nitrophenol		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dimethylphenol		0.158	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.201	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dichlorophenol		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,2,4-Trichlorobenzene		0.317	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Naphthalene		0.277	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chloroaniline		0.096	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorobutadiene		0.152	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chloro-3-methylphenol		0.102	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Methylnaphthalene		0.287	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorocyclopentadiene		0.119	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4,6-Trichlorophenol		0.185	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4,5-Trichlorophenol		0.155	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
2-Chloronaphthalene		0.271	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Nitroaniline		0.201	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Dimethylphthalate		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.4 J	0.42
Acenaphthylene		0.198	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,6-Dinitrotoluene		0.172	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
3-Nitroaniline		0.172	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Acenaphthene		0.221	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dinitrophenol		0.152	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1

CHARLES WOOD
SEDIMENT SEMIVOLATILES

Geographical Location			Background		Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01R		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923		9412G923	
Prep#			94GBO800		94GBO800		94GBO800		94GBO800	
RFW#			005		006		006		007	
Sample Depth			0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		0.248	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Dibenzofuran		0.215	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dinitrotoluene		0.191	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Diethylphthalate		0.178	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chlorophenyl-phenylether		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Fluorene		0.208	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Nitroaniline		0.211	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
4,6-Dinitro-2-methylphenol		0.175	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
N-Nitrosodiphenylamine (1)		0.139	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Bromophenyl-phenylether		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorobenzene		0.182	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Pentachlorophenol		0.132	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Phenanthrene	0.225	0.165	0.47 U	0.47	0.079 J	0.61	0.074 J	0.61	0.098 J	0.42
Anthracene		0.152	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Carbazole		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Di-n-butylphthalate		0.215	0.47 U	0.47	0.12 J	0.61	0.12 JB	0.61	0.081 J	0.42
Fluoranthene	0.6	0.198	0.47 U	0.47	0.12 J	0.61	0.12 J	0.61	0.16 J	0.42
Pyrene	0.35	0.178	0.47 U	0.47	0.24 J	0.61	0.41 J	0.61	0.19 J	0.42
Butylbenzylphthalate		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
3,3'-Dichlorobenzidine		0.092	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(a)anthracene	0.23	0.162	0.47 U	0.47	0.09 J	0.61	0.083 J	0.61	0.079 J	0.42
Chrysene	0.4	0.145	0.47 U	0.47	0.11 J	0.61	0.14 J	0.61	0.087 J	0.42
bis(2-Ethylhexy)phthalate		0.32	0.47 U	0.47	0.21 J	0.61	0.23 J	0.61	0.45	0.42
Di-n-octyl phthalate		0.185	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.11 J	0.42
Benzo(b)fluoranthene		0.188	0.47 U	0.47	0.16 J	0.61	0.16 J	0.61	0.1 J	0.42
Benzo(k)fluoranthene		0.205	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(a)pyrene	0.4	0.162	0.47 U	0.47	0.61 U	0.61	0.1 J	0.61	0.42 U	0.42
Indeno(1,2,3-cd)pyrene		0.234	0.47 U	0.47	0.17 J	0.61	0.19 J	0.61	0.42 U	0.42
Dibenzo(a,h)anthracene		0.198	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(g,h,i)perylene		0.224	0.47 U	0.47	0.15 J	0.61	0.21 J	0.61	0.42 U	0.42
Organic Carbon %					1.3	0.06				
% solids					76.3	0.10				
Total Est. Conc. of TIC			10.1 J		28.2 J		39.7 J		9.39 J	
Method:TCL Semivolatiles										

CHARLES WOOD
SEDIMENT INORGANICS

Geographical Location		Background		Background		Background		CW5	
Sample		CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01		CW06-SD01-A01	
Batch#		9412G923		9505G138		9412G923		9412G923	
Prep#		94GTS473		95GTS327		94GTS473		94GTS473	
RFW#		005		001		006		007	
Sample Depth		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/1/94		5/25/95		12/1/94		12/1/94	
Analysis Date		12/9/94		6/1/95		12/9/94		12/9/94	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
% Solids		71.3	0.10	76.3	0.10	54.5	0.10	79.3	0.10
Silver	1	0.63 U	0.63			1.1 U	1.1	0.70 U	0.7
Aluminum		1910	5.5			6660	9.1	866	6.1
Arsenic	33	1.1	0.38			5.8	0.54	0.74	0.35
Barium		8.4	0.43			45.7	0.71	9.6	0.48
Beryllium		0.31 U	0.31			0.51 U	0.51	0.34 U	0.34
Calcium		343	2.5			2960	4.1	509	2.7
Cadmium	5	0.70 U	0.70			1.2 U	1.2	0.77 U	0.77
Cobalt		0.88	0.57			4.2	0.95	1.3	0.64
Chromium	80	24.4	1.3			36.9	2.2	7.8	1.5
Copper	70	2.2	0.49			24.5	0.82	7.4	0.55
Iron		5860	0.96			19600	1.6	6910	1.1
Mercury	0.15	0.10 U	0.10			0.15 U	0.15	0.084 U	0.084
Potassium		1700	168			1410	279	256	186
Magnesium		640	7.8			2560	13.0	320	8.7
Manganese		5.4	0.41			65.1	0.68	25.8	0.45
Sodium		37.4	3.2			271	5.2	54.0	3.5
Nickel	30	2.6 U	2.6			11.3	4.3	2.9 U	2.9
Lead	35	6.4	1.5 *			142	10.8 *	9.3	1.8 *
Antimony		4.4 U	4.4			7.3 U	7.3	4.9 U	4.9
Selenium		0.21 U	0.21			0.68	0.30	0.20 U	0.2
Thallium		0.26 U	0.26			0.37 U	0.37	0.24 U	0.24
Vanadium		11.3	0.59			39.5	0.99	5.4	0.66
Zinc	120	14.3	0.57			126	0.95	22.5	0.64
Cyanide		1.1	0.63			0.87 U	0.87	0.47 U	0.47
Dilution Factor		* = 4.00				* = 20.0		* = 5.00	
Method:TAL Metals, Cyanide									

CHARLES WOOD
SEDIMENT PESTICIDES/PCBS

Geographical Location		Background		Background		Background		CW5	
Sample		CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01DL		CW06-SD01-A01	
Batch#		9412G923		9412G923		9412G923		9412G923	
Prep#		94GP1049		94GP1049		94GP1049		94GP1049	
RFW#		005		006		006DL		007	
Sample Depth		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		2.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
alpha-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
beta-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
delta-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
gamma-BHC (Lindane)		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Heptachlor		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Aldrin		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Heptachlor epoxide		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0042 P	0.0021
Endosulfan I		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Dieldrin		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDE	0.002	0.0028 J	0.0047	0.096	0.006	.085 D	0.012	0.0067	0.0042
Endrin		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
Endosulfan II		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDD	0.002	0.0065	0.0047	0.013 P	0.006	.015 PD	0.012	0.005 P	0.0042
Endosulfan sulfate		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDT	0.00183	0.007	0.0047	0.11	0.006	.11 D	0.012	0.0029 JP	0.0042
Methoxychlor		0.023 U	0.023	0.03 U	0.03	0.06 U	0.06	0.021 U	0.021
Endrin ketone		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
Endrin aldehyde		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
alpha-Chlordane		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
gamma-Chlordane		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Toxaphene		0.23 U	0.23	0.3 U	0.3	0.6 U	0.6	0.21 U	0.21
Aroclor-1016		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1221		0.093 U	0.093	0.12 U	0.12	0.24 U	0.24	0.084 U	0.084
Aroclor-1232		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1242		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1248		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1254		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1260		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Method:TCL Pesticides/PCBs									

CHARLES WOOD
SURFACE WATER VOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GVE348		94GVE348	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	5.7	7.3	10 U	10	10 U	10
Bromomethane	48.4	6.7	10 U	10	10 U	10
Vinyl Chloride	0.083	7.9	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10
Methylene Chloride	2.49	2.7	10 U	10	10 U	10
Acetone		6.9	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10
1,1-Dichloroethene	4.81	4.9	10 U	10	10 U	10
1,1-Dichloroethane		3.0	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10
Chloroform	5.67	2.9	10 U	10	10 U	10
1,2-Dichloroethane	0.291	2.4	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10
1,1,1-Trichloroethane	127	1.7	10 U	10	10 U	10
Carbon Tetrachloride	0.363	1.5	10 U	10	10 U	10
Bromodichloromethane	0.266	2.0	10 U	10	10 U	10
1,2-Dichloropropane		1.7	10 U	10	10 U	10
cis-1,3-Dichloropropene		3.0	10 U	10	10 U	10
Trichloroethene	1.09	2.0	10 U	10	10 U	10
Dibromochloromethane	72.6	2.4	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5	4.3	10 U	10	10 U	10
Benzene	0.15	3.3	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	2.4	10 U	10	10 U	10
Bromoform	4.38	3.1	10 U	10	10 U	10
4-Methyl-2-pentanone		5.5	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10
Tetrachloroethene	0.388	4.0	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72	4.2	10 U	10	10 U	10
Toluene	7440	2.7	10 U	10	10 U	10
Chlorobenzene	22	2.7	10 U	10	10 U	10
Ethylbenzene	3030	3.1	10 U	10	10 U	10
Styrene		3.8	10 U	10	10 U	10
Xylene (total)		3.8	10 U	10	10 U	10
Method:TCL Volatiles						

CHARLES WOOD
SURFACE WATER SEMIVOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GBO800		94GBO800	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	20900	7.1	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	9.7	10 U	10	10 U	10
2-Chlorophenol	122	7.3	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	5.3	10 U	10	10 U	10
1,4-Dichlorobenzene	343	4.8	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	5.7	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10
N-Nitroso-di-n-propylamine		8.0	10 U	10	10 U	10
Hexachloroethane	2.73	5.3	10 U	10	10 U	10
Nitrobenzene	16	7.4	10 U	10	10 U	10
Isophorone	552	3.9	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10
2,4-Dimethylphenol		4.8	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	4.4	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	9.6	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10
Hexachlorobutadiene	6.94	4.6	10 U	10	10 U	10
4-Chloro-3-methylphenol		3.1	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	3.6	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	5.6	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	4.7	25 U	25	25 U	25
2-Chloronaphthalene		8.2	10 U	10	10 U	10
2-Nitroaniline		6.1	25 U	25	25 U	25
Dimethylphthalate	313000	4.4	10 U	10	10 U	10
Acenaphthylene		6.0	10 U	10	10 U	10
2,6-Dinitrotoluene		5.2	10 U	10	10 U	10
3-Nitroaniline		5.2	25 U	25	25 U	25
Acenaphthene		6.7	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	4.6	25 U	25	25 U	25
4-Nitrophenol		7.5	25 U	25	25 U	25

CHARLES WOOD
SURFACE WATER SEMIVOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GBO800		94GBO800	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		6.5	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	5.8	10 U	10	10 U	10
Diethylphthalate	21200	5.4	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10
Fluorene	1340	6.3	25 U	25	25 U	25
4-Nitroaniline		6.4	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol		5.3	10 U	10	10 U	10
N-Nitrosodiphenylamine (1)		4.2	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10
Hexachlorobenzene	0.000748	5.5	25 U	25	25 U	25
Pentachlorophenol	0.282	4.0	10 U	10	10 U	10
Phenanthrene		5.0	10 U	10	10 U	10
Anthracene	9570	4.6	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10
Di-n-butylphthalate	3530	6.5	10 U	10	10 U	10
Fluoranthene	310	6.0	10 U	10	10 U	10
Pyrene	797	5.4	10 U	10	10 U	10
Butylbenzylphthalate	239	5.3	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	2.8	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	4.9	10 U	10	10 U	10
Chrysene	0.0028	4.4	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	9.7	1 J	10	1 J	10 JB
Di-n-octyl phthalate		5.6	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	5.7	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	6.2	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	4.9	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	7.1	10 U	10	10 U	10
Dibenzo(a,h)anthracene	0.0028	6.0	10 U	10	10 U	10
Benzo(g,h,i)perylene		6.8	10 U	10	10 U	10
Total Est. Conc. of TIC			70			
Method:TCL Semivolatiles						

CHARLES WOOD
SURFACE WATER INORGANICS

Geographical Location		Background		Background		Background		Background	
Sample		CW02-SW01-A01		CW02-SW01-A01 SOL		CW05-SW01-A01		CW05-SW01-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble	
Batch#		9412G923		9412G923		9412G923		9412G923	
Prep#		94GCN264		94GI186		94GCN264		94GI186	
RFW#		001		002		003		004	
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date		12/14/94		12/21/94		12/14/94		12/21/94	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	164	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum		134	26.7	86.6	26.7	265	26.7	160	26.7
Arsenic	0.017	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000	77.1	2.1	78.2	2.1	60.6	2.1	60.3	2.1
Beryllium		1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium		15100	12.0	15700	12.0	22900	12.0	24000	12
Cadmium	10	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt		2.8	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper		2.4 U	2.4	4.8	2.4	8.0	2.4	10.2	2.4
Iron		608	4.7	352	4.7	715	4.7	435	4.7
Mercury	0.144	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3590	821	4040	821	1110	821	1030	821
Magnesium		7050	38.2	7390	38.2	4150	38.2	4280	38.2
Manganese	100	97.4	2.0	100	2.0	43.0	2.0	44.4	2.0
Sodium		156000	15.4	164000	15.4	10700	15.4	11200	15.4
Nickel	516	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8
Lead	5	2.2	1.6	1.8	1.6	4.7	0.8	3.9	0.8
Antimony	12.2	26.8	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium		2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc		55.1	2.8	58.8	2.8	204	2.8	215	2.8
Cyanide	5.2	10.0 U	10.0			10.0 U	10.0		
Method:TAL Metals, Cyanide									

CHARLES WOOD
SURFACE WATER PESTICIDES/PCBS

Geographical Location		Background		Background	
Sample		CW02-SW01-A01		CW05-SW01-A01	
Batch#		9412G923		9412G923	
Prep#		94GP1038		94GP1038	
RFW#		001		003	
Dilution Factor		1.00		1.00	
Matrix		water		water	
Units	ug/l	ug/l		ug/l	
Sampling Date		12/1/94		12/1/94	
Analysis Date		12/17/94		12/17/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
alpha-BHC	0.00391	0.050 U	0.050	0.040 U	0.040
beta-BHC	0.137	0.050 U	0.050	0.040 U	0.040
delta-BHC		0.050 U	0.050	0.040 U	0.040
gamma-BHC (Lindane)	0.08	0.050 U	0.050	0.040 U	0.040
Heptachlor	0.000208	0.050 U	0.050	0.040 U	0.040
Aldrin	0.000135	0.050 U	0.050	0.040 U	0.040
Heptachlor epoxide	0.000103	0.050 U	0.050	0.040 U	0.040
Endosulfan I		0.050 U	0.050	0.040 U	0.040
Dieldrin	0.000135	0.1 U	0.10	0.080 U	0.080
4,4'-DDE	0.000588	0.1 U	0.10	0.080 U	0.080
Endrin	0.0023	0.1 U	0.10	0.080 U	0.080
Endosulfan II		0.1 U	0.10	0.080 U	0.080
4,4'-DDD	0.000832	0.1 U	0.10	0.080 U	0.080
Endosulfan sulfate	0.93	0.1 U	0.10	0.080 U	0.080
4,4'-DDT	0.000588	0.1 U	0.10	0.080 U	0.080
Methoxychlor	0.03	0.5 U	0.50	0.40 U	0.4
Endrin ketone		0.1 U	0.10	0.080 U	0.080
Endrin aldehyde	0.76	0.1 U	0.10	0.080 U	0.080
alpha-Chlordane	0.000277	0.050 U	0.050	0.040 U	0.040
gamma-Chlordane		0.050 U	0.050	0.040 U	0.040
Toxaphene	0.00073	5 U	5	4 U	4
Aroclor-1016	0.000244	1 U	1	0.80 U	0.8
Aroclor-1221	0.000244	2 U	2	1.6 U	1.6
Aroclor-1232	0.000244	1 U	1	0.80 U	0.80
Aroclor-1242	0.000244	1 U	1	0.80 U	0.80
Aroclor-1248	0.000244	1 U	1	0.80 U	0.80
Aroclor-1254	0.000244	1 U	1	0.80 U	0.80
Aroclor-1260	0.000244	1 U	1	0.80 U	0.80
Method:TCL Pesticides/PCBs					

CHARLES WOOD
SURFACE SOIL VOLATILES

Geographical Location			CW6		CW9		CW9	
Sample			CW06-SS01-A01		CW09-SS01-D01		CW09-SS01-E01	
Sample Type					Duplicate		Field Rinsate Blank	
Batch#			9412G854		9412G854		9412G854	
Prep#			94GVT027		94GVE343		94GVE343	
RFW#			014		001		002	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		water		water	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l	
Sampling Date			11/30/94		11/30/94		11/30/94	
Analysis Date			12/5/94		12/7/94		12/7/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromomethane	79	0.0067	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chloroethane		0.0091	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Methylene Chloride	49	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Acetone	1000	0.0069	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Carbon Disulfide		0.0044	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chloroform	19	0.0029	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
2-Butanone	1000	0.0041	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromodichloromethane	11	0.002	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Trichloroethene	23	0.002	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Benzene	3	0.0033	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromoform	86	0.0031	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
2-Hexanone		0.0039	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Tetrachloroethene	4	0.004	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Toluene	1000	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chlorobenzene	37	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Styrene	23	0.0038	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Xylene (total)	410	0.0038	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Method:TCL Volatiles								

CHARLES WOOD
SURFACE SOIL SEMIVOLATILES

Geographical Location			CW6	
Sample			CW06-SS01-A01	
Batch#			9412G854	
Prep#			94GB0796	
RFW#			014	
Sample Depth			0-6"	
Dilution Factor			10.00	
Matrix			soil	
Units	mg/kg	mg/kg	mg/kg	
Sampling Date			11/30/94	
Analysis Date			12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL
Phenol	10000	0.234	7.2 U	7.2
bis(2-Chloroethyl) ether	0.66	0.32	7.2 U	7.2
2-Chlorophenol	280	0.241	7.2 U	7.2
1,3-Dichlorobenzene	5100	0.175	7.2 U	7.2
1,4-Dichlorobenzene	570	0.158	7.2 U	7.2
1,2-Dichlorobenzene	5100	0.188	7.2 U	7.2
2-Methylphenol	2800	0.221	7.2 U	7.2
2,2'-oxybis(1-Chloropropane)		0.231	7.2 U	7.2
4-Methylphenol	2800	0.426	7.2 U	7.2
N-Nitroso-di-n-propylamine	0.66	0.264	7.2 U	7.2
Hexachloroethane	6	0.175	7.2 U	7.2
Nitrobenzene	28	0.244	7.2 U	7.2
Isophorone	1100	0.129	7.2 U	7.2
2-Nitrophenol		0.231	7.2 U	7.2
2,4-Dimethylphenol	1100	0.158	7.2 U	7.2
bis(2-Chloroethoxy) methane		0.201	7.2 U	7.2
2,4-Dichlorophenol	170	0.145	7.2 U	7.2
1,2,4-Trichlorobenzene	68	0.317	7.2 U	7.2
Naphthalene	230	0.277	7.2 U	7.2
4-Chloroaniline	230	0.096	7.2 U	7.2
Hexachlorobutadiene	1	0.152	7.2 U	7.2
4-Chloro-3-methylphenol	10000	0.102	7.2 U	7.2
2-Methylnaphthalene		0.287	7.2 U	7.2
Hexachlorocyclopentadiene	400	0.119	7.2 U	7.2
2,4,6-Trichlorophenol	62	0.185	7.2 U	7.2
2,4,5-Trichlorophenol	5600	0.155	18 U	18
2-Chloronaphthalene		0.271	7.2 U	7
2-Nitroaniline		0.201	18 U	18
Dimethylphthalate	10000	0.145	7.2 U	7
Acenaphthylene		0.198	7.2 U	7
2,6-Dinitrotoluene	1	0.172	7.2 U	7
3-Nitroaniline		0.172	18 U	18
Acenaphthene	3400	0.221	7.2 U	7
2,4-Dinitrophenol	110	0.152	18 U	18

CHARLES WOOD
SURFACE SOIL SEMIVOLATILES

Geographical Location			CW6	
Sample			CW06-SS01-A01	
Batch#			9412G854	
Prep#			94GB0796	
RFW#			014	
Sample Depth			0-6"	
Dilution Factor			10.00	
Matrix			soil	
Units	mg/kg	mg/kg	mg/kg	
Sampling Date			11/30/94	
Analysis Date			12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL
4-Nitrophenol		0.248	18 U	18
Dibenzofuran		0.215	7.2 U	7.2
2,4-Dinitrotoluene	1	0.191	7.2 U	7.2
Diethylphthalate	10000	0.178	7.2 U	7.2
4-Chlorophenyl-phenylether		0.231	7.2 U	7.2
Fluorene	2300	0.208	7.2 U	7.2
4-Nitroaniline		0.211	18 U	18
4,6-Dinitro-2-methylphenol		0.175	18 U	18
N-Nitrosodiphenylamine (1)	140	0.139	7.2 U	7.2
4-Bromophenyl-phenylether		0.175	7.2 U	7.2
Hexachlorobenzene	0.66	0.182	7.2 U	7.2
Pentachlorophenol	6	0.132	18 U	18
Phenanthrene		0.165	7.2 U	7.2
Anthracene	10000	0.152	7.2 U	7.2
Carbazole		0.145	7.2 U	7.2
Di-n-butylphthalate	5700	0.215	7.2 U	7.2
Fluoranthene	2300	0.198	7.2 U	7.2
Pyrene	1700	0.178	7.2 U	7.2
Butylbenzylphthalate	1100	0.175	7.2 U	7.2
3,3'-Dichlorobenzidine	2	0.092	7.2 U	7.2
Benzo(a)anthracene	0.9	0.162	7.2 U	7.2
Chrysene	9	0.145	7.2 U	7.2
bis(2-Ethylhexy)phthalate	49	0.32	0.76 J	
Di-n-octyl phthalate	1100	0.185	7.2 U	7.2
Benzo(b)fluoranthene	0.9	0.188	7.2 U	7.2
Benzo(k)fluoranthene	0.9	0.205	7.2 U	7.2
Benzo(a)pyrene	0.66	0.162	7.2 U	7.2
Indeno(1,2,3-cd)pyrene	0.9	0.234	7.2 U	7.2
Dibenzo(a,h)anthracene	0.66	0.198	7.2 U	7.2
Benzo(g,h,i)perylene		0.224	7.2 U	7.2
Method:TCL Semivolatiles				

CHARLES WOOD
SURFACE SOIL INORGANICS

Geographical Location		CW4		CW6		CW9		CW9		CW9		CW9	
Sample		CW04-SS01-A01		CW06-SS01-A01		CW09-SS01-A01		CW09-SS01-C01		CW09-SS02-A01		CW09-SS03-A01	
Sample Type								Duplicate					
Batch#		9412G854		9412G854		9412G854		9412G854		9412G854		9412G854	
Prep#		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467	
RFW#		013		014		003		004		005		006	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94	
Analysis Date		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.1	0.10	46.0	0.10	77.4	0.10	78.8	0.10	80.5	0.10	78.6	0.10
Silver	110	0.76	0.5	1.5	1.3	2.5	0.72	2.4	0.64	2.8	0.53	0.65 U	0.65
Aluminum		6870	4.3	5130	11	7350	6.2	7470	5.6	5730	4.6	3600	5.6
Arsenic	20	7.8	0.58 *	11.6	0.61	13.6	1.9 *	14.1	0.76 *	12.1	0.69 *	6.9	0.33
Barium	700	17.7	0.34	72.2	0.86	23.4	0.49	24.1	0.44	28.9	0.36	65.4	0.44
Beryllium	1	0.76	0.24	0.62 U	0.62	0.73	0.35	0.91	0.31	0.68	0.26	0.57	0.32
Calcium		699	1.9	4430	5	2680	2.8	2620	2.5	2650	2.1	1960	2.5
Cadmium	1	0.45 U	0.45	4.4	1.1	0.65 U	0.65	0.58 U	0.58	0.48 U	0.48	0.59 U	0.59
Cobalt		0.62	0.43	1.1 U	1.1	0.63 U	0.63	1.2	0.56	0.46 U	0.46	0.57 U	0.57
Chromium		58.3	0.48	65.8	1.2	56.7	0.7	60.6	0.62	57.2	0.51	24.9	0.63
Copper	600	3.2	0.37	69.8	0.94	9.6	0.54	9.7	0.48	10.3	0.39	5	0.48
Iron		19700	0.76	10900	1.9	20600	1.1	22100	0.98	18200	0.81	10800	0.99
Mercury	14	0.10 U	0.1	6	0.35 *	0.2	0.12	0.19	0.091	0.23	0.099	0.094 U	0.094
Potassium		2720	132	1420	337	1600	191	1630	171	2620	141	1460	173
Magnesium		1450	3.9	1260	10	1910	5.7	1920	5.1	2010	4.2	815	5.1
Manganese		26.2	0.32	78.8	0.82	85.1	0.47	91	0.42	46.8	0.34	22.3	0.42
Sodium		16	2.5	103	6.3	35.6	3.6	33.1	3.2	33.9	2.6	77.4	3.2
Nickel	250	2.3	2.1	5.30 U	5.3	6	3	4.6	2.7	3.3	2.2	2.7 U	2.7
Lead	400	8.9	0.58 *	203	10.3	19.9	3.8 **	20.1	3.8 **	30.1	4.3	13.5	1.6 *
Antimony	14	3.50 U	3.5	8.8 U	8.8	5.0 U	5	4.5 U	4.5	3.7 U	3.7	4.5 U	4.5
Selenium	63	0.33	0.16	0.7	0.34	0.56	0.21	0.97	0.21	0.62	0.19	0.75	0.18
Thallium	2	0.20 U	0.2	0.42 U	0.42	0.26 U	0.26	0.26 U	0.26	0.24 U	0.24	0.22 U	0.22
Vanadium	370	37.3	0.47	21.8	1.2	45.7	0.68	48.5	0.6	34	0.5	15.7	0.61
Zinc	1500	24.6	0.45	463	1.1	53.7	0.65	45.9	0.58	61.2	0.48	25.8	0.59
Dilution Factor		* = 2.00		* = 2.00		* = 5.0, ** = 10.0		* = 2.00, ** = 10.0		* = 2.00		* = 5.00	
Method:TAL Metals													

CHARLES WOOD
SURFACE SOIL INORGANICS

Geographical Location		CW9		CW9		CW9		CW9		CW9		CW9	
Sample		CW09-SS04-A01		CW09-SS05-A01		CW09-SS06-A01		CW09-SS07-A01		CW09-SS08-A01		CW09-SS09-A01	
Sample Type													
Batch#		9412G854		9412G854		9412G854		9412G854		9412G854		9412G854	
Prep#		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467	
RFW#		007		008		009		010		011		012	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94	
Analysis Date		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		71.9	0.10	79.7	0.10	82.3	0.10	68.5	0.10	83.2	0.10	86.4	0.10
Silver	110	0.58 U	0.58	0.77	0.57	0.71	0.59	1.2	0.85	3.3	0.56	1.3	0.51
Aluminum		4380	5	6930	4.9	5450	5.1	3910	7.4	4070	4.9	7700	4.4
Arsenic	20	6.3	0.52 *	15.6	1.4	9.3	0.62 *	10.5	0.46	7.2	0.67 *	7.7	0.36
Barium	700	51.2	0.39	32.5	0.38	33	0.4	40.7	0.58	19.2	0.38	40.8	0.34
Beryllium	1	0.55	0.28	0.9	0.27	0.72	0.29	0.58	0.41	0.56	0.27	1	0.24
Calcium		19600	2.3	3570	2.2	3610	2.3	4370	3.3	1630	2.2	3440	2
Cadmium	1	0.53 U	0.53	0.51 U	0.51	0.54 U	0.54	2.6	0.77	0.51 U	0.51	0.46 U	0.46
Cobalt		1.3	0.51	1.9	0.49	1.7	0.52	0.74 U	0.74	0.49 U	0.49	1.8	0.44
Chromium		28.3	0.56	60.5	0.55	46.9	0.57	164	0.83	56.2	0.55	70	0.49
Copper	600	17.7	0.43	8.8	0.42	11.1	0.44	17.4	0.63	9	0.42	9.6	0.37
Iron		12200	0.88	22200	0.86	17900	0.9	9880	1.3	11300	0.86	25600	0.77
Mercury	14	0.11 U	0.11	0.14	0.1	0.09 U	0.09	7.9	1.2 *	0.69	0.12	0.093 U	0.093
Potassium		2060	154	3950	150	3180	157	1720	226	1250	149	5130	134
Magnesium		2260	4.6	2280	4.5	1720	4.7	1620	6.7	893	4.4	2590	4
Manganese		106	0.38	59.2	0.37	56	0.38	140	0.55	37	0.36	69.5	0.33
Sodium		118	2.9	49.7	2.8	49.7	2.9	40.6	4.2	34.5	2.8	60.9	2.5
Nickel	250	5.7	2.4	6.9	2.3	4.9	2.4	4.3	3.5	2.4	2.3	5.8	2.1
Lead	400	56.8	4.7	27.4	2.7 *	17	3.1 **	82.3	6.9	35.5	4.6	20.1	3.6 *
Antimony	14	4.0 U	4	3.90 U	3.9	4.10 U	4.1	5.90 U	5.9	3.90 U	3.9	3.5 U	3.5
Selenium	63	0.28	0.15	0.63	0.15	0.41	0.17	0.57	0.26	0.6	0.19	0.48	0.2
Thallium	2	0.18 U	0.18	0.19 U	0.19	0.21 U	0.21	0.32 U	0.32	0.23 U	0.23	0.24 U	0.24
Vanadium	370	22.9	0.54	33.1	0.53	30.3	0.55	15.6	0.8	29.3	0.53	32	0.47
Zinc	1500	92.5	0.53	47.8	0.51	62.3	0.54	77	0.77	36	0.51	48.1	0.46
Dilution Factor		* = 2.00		* = 10.0		* = 2.00, ** = 10.0		* = 10.0		* = 2.00		* = 10.0	
Method:TAL Metals													

CHARLES WOOD
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		CW6		CW6	
Sample		CW06-SS01-A01		CW06-SS01-A01DL	
Batch#		9412G854		9412G854	
Prep#		94GP1033		94GP1033	
RFW#		014		014 DL	
Sample Depth		0-6"		0-6"	
Dilution Factor		5.00		50.00	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94	
Analysis Date		12/18/94		12/14/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
alpha-BHC		0.018 U	0.018	0.18 U	0.18
beta-BHC		0.018 U	0.018	0.18 U	0.18
delta-BHC		0.018 U	0.018	0.18 U	0.18
gamma-BHC (Lindane)	0.52	0.018 U	0.018	0.18 U	0.18
Heptachlor	0.15	0.018 U	0.018	0.18 U	0.18
Aldrin	0.04	0.018 U	0.018	0.18 U	0.18
Heptachlor epoxide		0.032		0.18 U	0.18
Endosulfan I	340	0.018 U	0.018	0.18 U	0.18
Dieldrin	0.042	0.036 U	0.036	0.36 U	0.36
4,4'-DDE	2	0.13		0.36 U	0.36
Endrin	17	0.036 U	0.036	0.36 U	0.36
Endosulfan II	340	0.036 U	0.036	0.36 U	0.36
4,4'-DDD	3	0.86 C		.66 CD	
Endosulfan sulfate		0.036 U	0.036	0.36 U	0.36
4,4'-DDT	2	0.81 C		.79 CD	
Methoxychlor	280	0.180 U	0.18	1.8 U	1.8
Endrin ketone		0.036 U	0.036	0.36 U	0.36
Endrin aldehyde		0.036 U	0.036	0.36 U	0.36
alpha-Chlordane		0.85 C		.87 CD	
gamma-Chlordane		0.81 C		.8 CD	
Toxaphene	0.1	1.8 U	1.8	18 U	18
Aroclor-1016	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1221	0.49	0.72 U	0.72	7.2 U	7.2
Aroclor-1232	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1242	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1248	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1254	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1260	0.49	0.36 U	0.36	3.6 U	3.6
Method:Pesticides/PCBs					

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample			CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB04-D02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type											Trip Blank					
Batch#			9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#			94GVT034 & 35		94GVT034		94GVT034 & 35		94GVT034		94GVB441		94GVT034		94GVT034	
RFW#			001		003		002		006		007		004		005	
Sample Depth (bgs)			10 - 12'		10 - 12'		6 - 8'		8 -10'				8 -10'		12 - 14'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		water		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/l		mg/kg		mg/kg	
Sampling Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date			12/27/94		12/27/94		12/27/94		12/27/94		12/28/94		12/27/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Acetone	1000	0.0069	0.68 B	0.11 *	0.063 B	0.011	0.11 B	0.022	0.019 B	0.011	0.01 U	0.01	0.060 B	0.011	0.043 B	0.011
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
2-Butanone	1000	0.0041	0.011 U	0.011	0.002 J	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Total Est. Conc. of TIC.			0.006		0.007		.006, .01 *						0.006			
Dilution Factor			* = 10.0				* = 2.00									
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-SB26-A02		CW01-SB26-D02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02	
Sample Type					Trip Blank											
Batch#			9412G922		9412G922		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#			94GVT033		94GVE365		94GVT033		94GVT033		94GVT033		94GVT031		94GVT031	
RFW#			004		005		002		003		001		002		003	
Sample Depth (bgs)			7 - 9'				7 - 9'		7 - 9'		7 - 9'		7 - 9'		7 - 9'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/19/94		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date			12/22/94		12/21/94		12/22/94		12/22/94		12/22/94		12/20/94		12/20/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromomethane	79	0.0067	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Vinyl Chloride	2	0.0079	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chloroethane		0.0091	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Methylene Chloride	49	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.088	0.012	0.086	0.014
Acetone	1000	0.0069	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.057 B	0.012	0.120 B	0.013	98 B	12 *	0.74 B	0.68 *
Carbon Disulfide		0.0044	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1-Dichloroethene	8	0.0049	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1-Dichloroethane	570	0.003	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloroethene (total)	79	0.0044	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chloroform	19	0.0029	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloroethane	6	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
2-Butanone	1000	0.0041	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.012 J	0.014
1,1,1-Trichloroethane	210	0.0017	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Carbon Tetrachloride	2	0.0015	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromodichloromethane	11	0.002	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloropropane	10	0.0017	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
cis-1,3-Dichloropropene	4	0.003	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Trichloroethene	23	0.002	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Dibromochloromethane	110	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1,2-Trichloroethane	22	0.0043	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Benzene	3	0.0033	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
trans-1,3-Dichloropropene	4	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromoform	86	0.0031	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
4-Methyl-2-pentanone	1000	0.0055	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
2-Hexanone		0.0039	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Tetrachloroethene	4	0.004	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1,2,2-Tetrachloroethane	34	0.0042	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Toluene	1000	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chlorobenzene	37	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Ethylbenzene	1000	0.0031	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Styrene	23	0.0038	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Xylene (total)	410	0.0038	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Total Est. Conc. of TIC.							0.007						.008, 6 *		.9 *	
Dilution Factor													* = 1000		* = 50.0	
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2		CW4	
Sample			CW02-SB31-D02		CW02-SB31-E02		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02		CW02-SB33-D02		CW04-SB01-A02	
Sample Type			Trip Blank		Field Rinsate Blank								Trip Blank			
Batch#			9412G182		9412G182		9412G182		9412G154		9412G154		9412G154		9412G264	
Prep#			94GVT365		94GVT365		94GVT031		94GVT030 & 31		94GVT030 & 35		94GVB439		94GVT034 & 35	
RFW#			004		005		001		001		002		003		008	
Sample Depth (bgs)							7 - 9'		7 - 9'		7 - 9'				4 -6'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		soil		soil		soil		water		soil	
Units	mg/kg	mg/kg	mg/l		mg/l		mg/kg		mg/kg		mg/kg		mg/l		mg/kg	
Sampling Date			12/16/94		12/16/94		12/16/94		12/15/94		12/15/94		12/16/94		12/21/94	
Analysis Date			12/21/94		12/12/94		12/20/94		12/19/94		12/19/94		12/20/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.01 U	0.01	0.01 U	0.01	0.017	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.01 U	0.01	0.11	0.01	5.9 B	1.2	0.98 B	.24 *	2.1 B	0.12	0.01 U	0.01	1.4 B	.12 *
Carbon Disulfide		0.0044	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.01 U	0.01	0.01 U	0.01	0.008 J	0.012	0.012 U	0.012	0.031	0.012	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.																
Dilution Factor							* = 100.0		* = 20.0		* = 10.0				.06 *	
Method:TCL Volatiles															* = 10.0	

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW5		CW5		CW5		CW6		CW6		CW6		CW6	
Sample			CW05-SB01-A02		CW05-SB01-D02		CW05-SB02-A02		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW06-SB34-D02	
Sample Type					Trip Blank										Trip Blank	
Batch#			9412G245		9412G923		9412G245		9505G840		9501G423		9501G423		9501G423	
Prep#			94GVT035 & 99		94GVB441		94GVT035 & 99		95GVB138		95GVT002		95GVT002		95GVT006	
RFW#			001		003		001		001		001		002		003	
Sample Depth (bgs)			6 - 8'				6 - 8'		0.5 - 1'		0-2'		2-4'			
Dilution Factor			1.00		5.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		soil		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			12/20/94		12/20/94		12/20/94		5/10/95		1/3/95		1/3/95		1/3/95	
Analysis Date			12/28/94		12/28/94		12/28/94		5/24/95		1/5/95		1/5/95		1/6/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	2.7 B	0.23	0.01 U	0.01	0.57 B	0.06	0.016 B	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.013	0.012	0.01 U	0.01	0.01 J	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.			0.016				0.007									
Dilution Factor			* = 20.0				* = 5.00									
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6		B7	
Sample			CW09-SB01-A02		CW09-SB01-D02		CW09-SB01-E02		CW09-SB01-E02DL		B6-SB01-A01		B6-SB01-A02		B7-SB01-A01	
Sample Type					Trip Blank		Field Rinsate Blank		Field Rinsate Blank							
Batch#			9501G450		9501G450		9501G450		9501G450		9501G553		9501G553		9501G553	
Prep#			95GVF011		95GVE009		95GVE009		95GVF009		95GVF013		95GVF013		95GVF012	
RFW#			001		003		002DL		002		008		019		006	
Sample Depth (bgs)			2 - 4'								1 - 2'		2 - 4'		1 - 2'	
Dilution Factor			1.00		1.00		50.0		1.00		1.00		1.00		1.00	
Matrix			soil		water		water		water		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date			1/4/95		1/4/95		1/4/95		1/4/95		1/10/95		1/10/95		1/10/95	
Analysis Date			1/13/95		1/10/95		1/10/95		1/10/95		1/16/95		1/16/95		1/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Acetone	1000	0.0069	1.2	*	0.01 U	0.01	E	0.01	5.2		0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01	0.003 J	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
2-Butanone	1000	0.0041	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Total Est. Conc. of TIC.											0.006					
Dilution Factor			* = 10.0													
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			B7		B8		B8		B9		B9		B9		B9	
Sample			B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01		B9-SB01-A02		B9-SB01-C02		B9-SB01-D02	
Sample Type													Duplicate		Trip Blank	
Batch#			9501G553		9501G553		9501G553		9501G831		9501G831		9501G831		9501G831	
Prep#			95GVF013		95GVF012		95GVF012		95GVT020		95GVT020		95GVT020		95GVC014	
RFW#			007		004		005		001		002		003		005	
Sample Depth (bgs)			4 - 6'		1 - 2'		4 - 6'		1 - 2'		6 - 8'					
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			1/10/95		1/10/95		1/10/95		1/23/95		1/23/95		1/23/95		1/23/95	
Analysis Date			1/16/95		1/15/95		1/15/95		2/1/95		2/1/95		2/1/95		2/1/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Chloromethane	520	0.0073	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 B	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.015 B	0.012	0.011 U	0.011	0.13	0.012	0.9 B	.3 *	0.012 U	0.012	0.012 U	0.012	8300	1000 *
Carbon Disulfide		0.0044	0.012 U	0.012	0.011 U	0.011	0.002 J	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.006 J	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.									.008, .8 *							
Dilution Factor									* = 25.0						* = 100000	
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			B9		B10		B10		B10		B10	
Sample			B9-SB01-E02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-D02	
Sample Type			Field Rinsate Blank								Trip Blank	
Batch#			9501G831		9501G553		9501G553		9501G553		9501G553	
Prep#			95GVC014		95GVF012		95GVF013		95GVF012		95GVF012	
RFW#			004		001		001RE		002		003	
Sample Depth (bgs)					1 - 2'				2 - 4'			
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/l		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date			2/1/95		1/15/95		1/16/95		1/15/95		1/12/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.13	.02 *	0.012 U	0.012	0.016 B	0.012	0.24	0.012	0.022	0.01
Carbon Disulfide		0.0044	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.												
Dilution Factor			* = 2.00									
Method:TCL Volatiles												

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		CW1	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03		CW01-SB26-A02	
Sample Type															
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G216	
Prep#		94GBO847		94GBO847		94GBO847		94GBO852		94GBO847		94GBO847		94GB0835	
RFW#		001		003		002		006		004		005		004	
Sample Depth (bgs)															
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/19/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/5/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Chloroethyl) ether	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Chlorophenol	280	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,3-Dichlorobenzene	5100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,4-Dichlorobenzene	570	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,2-Dichlorobenzene	5100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Methylphenol	2800	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Methylphenol	2800	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
N-Nitroso-di-n-propylamine	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachloroethane	6	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Nitrobenzene	28	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Isophorone	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Nitrophenol		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dimethylphenol	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dichlorophenol	170	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,2,4-Trichlorobenzene	68	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Naphthalene	230	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chloroaniline	230	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorobutadiene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chloro-3-methylphenol	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Methylnaphthalene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorocyclopentadiene	400	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4,6-Trichlorophenol	62	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4,5-Trichlorophenol	5600	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
2-Chloronaphthalene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Dimethylphthalate	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.40 U	0.42
Acenaphthylene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,6-Dinitrotoluene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
3-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Acenaphthene	3400	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dinitrophenol	110	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
4-Nitrophenol		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		CW1	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03		CW01-SB26-A02	
Sample Type															
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G216	
Prep#		94GBO847		94GBO847		94GBO847		94GBO852		94GBO847		94GBO847		94GB0835	
RFW#		001		003		002		006		004		005		004	
Sample Depth (bgs)															
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/19/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/5/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dinitrotoluene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Diethylphthalate	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chlorophenyl-phenylether		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Fluorene	2300	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
4,6-Dinitro-2-methylphenol		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
N-Nitrosodiphenylamine (1)	140	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Bromophenyl-phenylether		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorobenzene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Pentachlorophenol	6	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Phenanthrene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Anthracene	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Carbazole		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Di-n-butylphthalate	5700	0.23 JB	0.37	1.5 B	0.37	0.48 B	0.36	0.09 J	0.37	2 B	0.36	1.8 B	0.36	0.081	0.42
Fluoranthene	2300	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Pyrene	1700	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Butylbenzylphthalate	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
3,3'-Dichlorobenzidine	2	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(a)anthracene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Chrysene	9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Ethylhexy)phthalate	49	0.075 J	0.37	0.37 U	0.37	0.34 J	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.075 J	0.42
Di-n-octyl phthalate	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(b)fluoranthene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(k)fluoranthene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(a)pyrene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Indeno(1,2,3-cd)pyrene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Dibenzo(a,h)anthracene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(g,h,i)perylene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Petroleum hydrocarbons															
Total Est. Conc. of TIC		6.62		5.44		6.44		5.63		3.68		4.87		6.39	
Method:TCL Semivolatiles															

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW1		CW1		CW1		CW2		CW2		CW2	
Sample		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02		CW02-SB32-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G182		9412G182		9412G182	
Prep#		94GB0835		94GB0835		94GBO835		94GBO835		94GBO835		94GBO835	
RFW#		002		003		001		002		003		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94		12/16/94	
Analysis Date		1/5/95		1/5/95		1/5/95		12/28/94		12/28/94		12/28/94	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Chloroethyl) ether	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Chlorophenol	280	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,3-Dichlorobenzene	5100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,4-Dichlorobenzene	570	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,2-Dichlorobenzene	5100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Methylphenol	2800	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,2'-oxybis(1-Chloropropane)		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Methylphenol	2800	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
N-Nitroso-di-n-propylamine	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachloroethane	6	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Nitrobenzene	28	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Isophorone	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Nitrophenol		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dimethylphenol	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Chloroethoxy) methane		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dichlorophenol	170	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,2,4-Trichlorobenzene	68	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Naphthalene	230	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.15 J	0.39	0.44 U	0.44	0.4 U	0.4
4-Chloroaniline	230	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorobutadiene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Chloro-3-methylphenol	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Methylnaphthalene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.1 J	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorocyclopentadiene	400	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4,6-Trichlorophenol	62	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4,5-Trichlorophenol	5600	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
2-Chloronaphthalene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Dimethylphthalate	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Acenaphthylene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,6-Dinitrotoluene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.98 U	0.39	0.44 U	0.44	0.4 U	0.4
3-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Acenaphthene	3400	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.17 J	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dinitrophenol	110	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
4-Nitrophenol		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW1		CW1		CW1		CW2		CW2		CW2	
Sample		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02		CW02-SB32-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G182		9412G182		9412G182	
Prep#		94GB0835		94GB0835		94GBO835		94GBO835		94GBO835		94GBO835	
RFW#		002		003		001		002		003		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94		12/16/94	
Analysis Date		1/5/95		1/5/95		1/5/95		12/28/94		12/28/94		12/28/94	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.093 J	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dinitrotoluene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Diethylphthalate	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Chlorophenyl-phenylether		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Fluorene	2300	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.21 J	0.39	0.44 U	0.44	0.4 U	0.4
4,6-Dinitro-2-methylphenol		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
N-Nitrosodiphenylamine (1)	140	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Bromophenyl-phenylether		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorobenzene	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Pentachlorophenol	6	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Phenanthrene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.3	0.39	0.44 U	0.44	0.4 U	0.4
Anthracene	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.33 J	0.39	0.44 U	0.44	0.4 U	0.4
Carbazole		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.18 J	0.39	0.44 U	0.44	0.4 U	0.4
Di-n-butylphthalate	5700	0.086	0.44	0.077	0.41	0.13 JB	0.43	0.081	0.39	0.12 JB	0.44	0.079	0.4
Fluoranthene	2300	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.5	0.39	0.44 U	0.44	0.4 U	0.4
Pyrene	1700	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.1	0.39	0.44 U	0.44	0.4 U	0.4
Butylbenzylphthalate	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
3,3'-Dichlorobenzidine	2	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(a)anthracene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.69	0.39	0.44 U	0.44	0.4 U	0.4
Chrysene	9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.71	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Ethylhexy)phthalate	49	0.09 J	0.44	0.41 U	0.41	0.43 U	0.43	0.16 J	0.39	0.1 J	0.44	0.059 J	0.4
Di-n-octyl phthalate	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(b)fluoranthene	0.9	0.44 U	0.44	0.41 U	0.41	0.07 J	0.43	0.79	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(k)fluoranthene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.28 J	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(a)pyrene	0.66	0.44 U	0.44	0.41 U	0.41	0.073 J	0.43	0.62	0.39	0.13 J	0.44	0.053 J	0.4
Indeno(1,2,3-cd)pyrene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.37 J	0.39	0.44 U	0.44	0.4 U	0.4
Dibenzo(a,h)anthracene	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.089 J	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(g,h,i)perylene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.35 J	0.39	0.44 U	0.44	0.4 U	0.4
Petroleum hydrocarbons													
Total Est. Conc. of TIC		6.7		6.19		9.19		11.4		22.8		18.1	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW2		CW4		CW4		CW5		CW5		CW5	
Sample		CW02-SB33-A02		CW04-SB01-A02		CW04-SB04-A02		CW05-SB01-A02		CW05-SB01-A02RE		CW05-SB02-A02	
Sample Type													
Batch#		9412G154		9412G264		9412G264		9412G245		9412G245		9412G245	
Prep#		94GBS0835		94GBO847		95GIR002		94GBO847		94GBO847		94GBO847	
RFW#		002		008				001		001		001	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00				1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/21/94		NA		12/20/94		12/20/94		12/20/94	
Analysis Date		12/27/94		1/3/95		1/5/95		1/3/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Chlorophenol	280	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,4-Dichlorobenzene	570	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Methylphenol	2800	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Methylphenol	2800	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachloroethane	6	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Nitrobenzene	28	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Isophorone	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Nitrophenol		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dimethylphenol	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dichlorophenol	170	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Naphthalene	230	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chloroaniline	230	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorobutadiene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Methylnaphthalene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4,5-Trichlorophenol	5600	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
2-Chloronaphthalene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Dimethylphthalate	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Acenaphthylene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,6-Dinitrotoluene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
3-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Acenaphthene	3400	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dinitrophenol	110	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
4-Nitrophenol		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW2		CW4		CW4		CW5		CW5		CW5	
Sample		CW02-SB33-A02		CW04-SB01-A02		CW04-SB04-A02		CW05-SB01-A02		CW05-SB01-A02RE		CW05-SB02-A02	
Sample Type													
Batch#		9412G154		9412G264		9412G264		9412G245		9412G245		9412G245	
Prep#		94GBS0835		94GBO847		95GIR002		94GBO847		94GBO847		94GBO847	
RFW#		002		008				001		001		001	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00				1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/21/94		NA		12/20/94		12/20/94		12/20/94	
Analysis Date		12/27/94		1/3/95		1/5/95		1/3/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dinitrotoluene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Diethylphthalate	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chlorophenyl-phenylether		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Fluorene	2300	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
4,6-Dinitro-2-methylphenol		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Bromophenyl-phenylether		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorobenzene	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Pentachlorophenol	6	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Phenanthrene		0.075 J	0.41	0.39 U	0.39			0.085 J	0.38	0.086 J	0.38	0.39 U	0.39
Anthracene	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Carbazole		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Di-n-butylphthalate	5700	0.42 B	0.41	2.5 B	0.39			0.16 JB	0.38	0.17 JB	0.38	0.18 JB	0.39
Fluoranthene	2300	0.073 J	0.41	0.39 U	0.39			0.21 J	0.38	0.22 J	0.38	0.39 U	0.39
Pyrene	1700	0.067 J	0.41	0.39 U	0.39			0.25 J	0.38	0.24 J	0.38	0.39 U	0.39
Butylbenzylphthalate	1100	0.41 U	0.41	0.23 J	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(a)anthracene	0.9	0.41 U	0.41	0.39 U	0.39			0.14 J	0.38	0.13 J	0.38	0.39 U	0.39
Chrysene	9	0.043 J	0.41	0.39 U	0.39			0.15 J	0.38	0.15 J	0.38	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.41 U	0.41	0.39 U	0.39			0.21 J	0.38	0.21 J	0.38	0.39 U	0.39
Di-n-octyl phthalate	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.41 U	0.41	0.39 U	0.39			0.2 J	0.38	0.22 J	0.38	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.41 U	0.41	0.39 U	0.39			0.084 J	0.38	0.089 J	0.38	0.39 U	0.39
Benzo(a)pyrene	0.66	0.094 J	0.41	0.39 U	0.39			0.11 J	0.38	0.1 J	0.38	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.41 U	0.41	0.39 U	0.39			0.066 J	0.38	0.38 U	0.38	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(g,h,i)perylene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Petroleum hydrocarbons						29 U	29						
Total Est. Conc. of TIC				5				9.38		10.08		10.65	
Method:TCL Semivolatiles						From inorganics list.							

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW6		CW6		CW6		CW9		B6		B6	
Sample		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A01RE	
Sample Type													
Batch#		9505G840		9501G423		9501G423		9501G450		9412G553		9412G553	
Prep#		95GB0323		95GB0017		95GB0017		95GB0017		94GTS0035		94GTS0083	
RFW#		001		001		002		001		008		008	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		5/10/95		1/3/95		1/3/95		1/4/95		1/10/95		1/10/95	
Analysis Date		5/30/95		1/20/95		1/20/95		1/21/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Chlorophenol	280	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,4-Dichlorobenzene	570	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Methylphenol	2800	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Methylphenol	2800	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachloroethane	6	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Nitrobenzene	28	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Isophorone	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Nitrophenol		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dimethylphenol	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dichlorophenol	170	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Naphthalene	230	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chloroaniline	230	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorobutadiene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Methylnaphthalene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4,5-Trichlorophenol	5600	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
2-Chloronaphthalene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Dimethylphthalate	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Acenaphthylene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,6-Dinitrotoluene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
3-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Acenaphthene	3400	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrophenol	110	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
4-Nitrophenol		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW6		CW6		CW6		CW9		B6		B6	
Sample		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A01RE	
Sample Type													
Batch#		9505G840		9501G423		9501G423		9501G450		9412G553		9412G553	
Prep#		95GB0323		95GB0017		95GB0017		95GB0017		94GTS0035		94GTS0083	
RFW#		001		001		002		001		008		008	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		5/10/95		1/3/95		1/3/95		1/4/95		1/10/95		1/10/95	
Analysis Date		5/30/95		1/20/95		1/20/95		1/21/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrotoluene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Diethylphthalate	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chlorophenyl-phenylether		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Fluorene	2300	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
4,6-Dinitro-2-methylphenol		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Bromophenyl-phenylether		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorobenzene	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Pentachlorophenol	6	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Phenanthrene		0.47 U	0.47	0.4 U	0.4	0.24 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Anthracene	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Carbazole		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Di-n-butylphthalate	5700	0.55 B	0.47	0.081	0.4	0.066	0.38	0.076	0.38	0.14 JB	0.38	1.2 B	0.38
Fluoranthene	2300	0.47 U	0.47	0.049 J	0.4	0.18 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Pyrene	1700	0.47 U	0.47	0.056 J	0.4	0.27 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Butylbenzylphthalate	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(a)anthracene	0.9	0.47 U	0.47	0.4 U	0.4	0.16 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Chrysene	9	0.47 U	0.47	0.4 U	0.4	0.15 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Ethylhexy)phthalate	49	0.07 JB	0.47	0.21 J	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.042 J	0.38
Di-n-octyl phthalate	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.47 U	0.47	0.4 U	0.4	0.11 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(k)fluoranthene	0.9	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(a)pyrene	0.66	0.47 U	0.47	0.4 U	0.4	0.087 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Indeno(1,2,3-cd)pyrene	0.9	0.47 U	0.47	0.4 U	0.4	0.054 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Dibenzo(a,h)anthracene	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(g,h,i)perylene		0.47 U	0.47	0.057	0.4	0.066	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Petroleum hydrocarbons													
Total Est. Conc. of TIC		35.9		12.2		10.3		9.58		7.02		6.03	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B6		B6		B7		B7		B7		B7	
Sample		B6-SB01-A02		B6-SB01-A02RE		B7-SB01-A01		B7-SB01-A01RE		B7-SB01-A02		B7-SB01-A02RE	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9412G553		9412G553	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		009		009		006		006		007		007	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Chlorophenol	280	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,4-Dichlorobenzene	570	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylphenol	2800	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Methylphenol	2800	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachloroethane	6	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Nitrobenzene	28	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Isophorone	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitrophenol		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dimethylphenol	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dichlorophenol	170	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Naphthalene	230	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloroaniline	230	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobutadiene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylnaphthalene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
2-Chloronaphthalene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Dimethylphthalate	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Acenaphthylene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,6-Dinitrotoluene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Acenaphthene	3400	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrophenol	110	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
4-Nitrophenol		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B6		B6		B7		B7		B7		B7	
Sample		B6-SB01-A02		B6-SB01-A02RE		B7-SB01-A01		B7-SB01-A01RE		B7-SB01-A02		B7-SB01-A02RE	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9412G553		9412G553	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		009		009		006		006		007		007	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrotoluene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Diethylphthalate	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chlorophenyl-phenylether		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Fluorene	2300	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Bromophenyl-phenylether		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobenzene	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Pentachlorophenol	6	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Phenanthrene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Anthracene	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Carbazole		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Di-n-butylphthalate	5700	0.17 JB	0.39	1.7 B	0.39	0.37 JB	0.39	0.75 B	0.39	0.28 JB	0.4	1 B	0.39
Fluoranthene	2300	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.042 J	0.39	0.4 U	0.4	0.39 U	0.39
Pyrene	1700	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.048 J	0.39	0.4 U	0.4	0.39 U	0.39
Butylbenzylphthalate	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)anthracene	0.9	0.39 U	0.39	0.046 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Chrysene	9	0.044 J	0.39	0.083 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.076 J	0.4	0.39 U	0.39
Di-n-octyl phthalate	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.078 J	0.39	0.06 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.041 J	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)pyrene	0.66	0.39 U	0.39	0.047 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(g,h,i)perylene		0.39 U	0.39	0.042 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Petroleum hydrocarbons													
Total Est. Conc. of TIC		6.19		9.64		6.74		6.59		6.54		7.19	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B8		B8		B8		B8		B9		B9	
Sample		B8-SB01-A01		B8-SB01-A01RE		B8-SB01-A02		B8-SB01-A02RE		B9-SB01-A01		B9-SB01-A02	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9501G831		9501G831	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		95GB0064		95GB0064	
RFW#		004		004		005		005		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/11/95		2/22/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Chloroethyl) ether	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Chlorophenol	280	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,3-Dichlorobenzene	5100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,4-Dichlorobenzene	570	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,2-Dichlorobenzene	5100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Methylphenol	2800	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,2'-oxybis(1-Chloropropane)		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Methylphenol	2800	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
N-Nitroso-di-n-propylamine	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachloroethane	6	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Nitrobenzene	28	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Isophorone	1100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Nitrophenol		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dimethylphenol	1100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Chloroethoxy) methane		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dichlorophenol	170	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,2,4-Trichlorobenzene	68	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Naphthalene	230	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chloroaniline	230	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorobutadiene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chloro-3-methylphenol	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Methylnaphthalene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorocyclopentadiene	400	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4,6-Trichlorophenol	62	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4,5-Trichlorophenol	5600	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
2-Chloronaphthalene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Dimethylphthalate	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Acenaphthylene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,6-Dinitrotoluene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
3-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Acenaphthene	3400	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dinitrophenol	110	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
4-Nitrophenol		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B8		B8		B8		B8		B9		B9	
Sample		B8-SB01-A01		B8-SB01-A01RE		B8-SB01-A02		B8-SB01-A02RE		B9-SB01-A01		B9-SB01-A02	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9501G831		9501G831	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		95GB0064		95GB0064	
RFW#		004		004		005		005		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/11/95		2/22/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dinitrotoluene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Diethylphthalate	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chlorophenyl-phenylether		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Fluorene	2300	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
4,6-Dinitro-2-methylphenol		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
N-Nitrosodiphenylamine (1)	140	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Bromophenyl-phenylether		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorobenzene	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Pentachlorophenol	6	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Phenanthrene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Anthracene	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Carbazole		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Di-n-butylphthalate	5700	0.72 B	0.36	0.14 JB	0.36	0.59 B	0.39	0 JB	0.39	0.12 JB	0.38	0.1 JB	0.4
Fluoranthene	2300	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Pyrene	1700	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Butylbenzylphthalate	1100	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
3,3'-Dichlorobenzidine	2	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(a)anthracene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Chrysene	9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Ethylhexy)phthalate	49	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Di-n-octyl phthalate	1100	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.11 J	0.38	0.073 J	0.4
Benzo(b)fluoranthene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(k)fluoranthene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(a)pyrene	0.66	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Indeno(1,2,3-cd)pyrene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Dibenzo(a,h)anthracene	0.66	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(g,h,i)perylene		0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Petroleum hydrocarbons													
Total Est. Conc. of TIC		5.08		11.26		7.06		7.27		0.56		10.09	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B9		B10		B10		B10		B10	
Sample		B9-SB01-C02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-A02RE	
Sample Type		Duplicate									
Batch#		9501G831		9412G553		9412G553		9412G553		9412G553	
Prep#		95GB0064		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		003		001		001		002		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/22/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Chlorophenol	280	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,4-Dichlorobenzene	570	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Methylphenol	2800	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Methylphenol	2800	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachloroethane	6	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Nitrobenzene	28	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Isophorone	1100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Nitrophenol		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dimethylphenol	1100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dichlorophenol	170	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Naphthalene	230	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chloroaniline	230	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorobutadiene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Methylnaphthalene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4,5-Trichlorophenol	5600	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
2-Chloronaphthalene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Dimethylphthalate	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Acenaphthylene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,6-Dinitrotoluene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
3-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Acenaphthene	3400	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dinitrophenol	110	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
4-Nitrophenol		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B9		B10		B10		B10		B10	
Sample		B9-SB01-C02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-A02RE	
Sample Type		Duplicate									
Batch#		9501G831		9412G553		9412G553		9412G553		9412G553	
Prep#		95GB0064		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		003		001		001		002		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/22/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dinitrotoluene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Diethylphthalate	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chlorophenyl-phenylether		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Fluorene	2300	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
4,6-Dinitro-2-methylphenol		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Bromophenyl-phenylether		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorobenzene	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Pentachlorophenol	6	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Phenanthrene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Anthracene	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Carbazole		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Di-n-butylphthalate	5700	0.088	0.4	2 B	0.39	0 JB	0.4	1.6 B	0.39	0.2 JB	0.39
Fluoranthene	2300	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Pyrene	1700	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Butylbenzylphthalate	1100	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(a)anthracene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Chrysene	9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.043 J	0.4	0.057 J	0.39	0 U	0.4	0.39 U	0.39	0.17 J	0.39
Di-n-octyl phthalate	1100	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(a)pyrene	0.66	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(g,h,i)perylene		0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Petroleum hydrocarbons											
Total Est. Conc. of TIC		8.97		4.57		13.06		4.74		9.4	
Method:TCL Semivolatiles											

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type													
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#		94GI211		94GI211		94GI211		94GI211		94GI211		94GI211	
RFW#		001		003		002		006		004		005	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.0	0.10	90.6	0.10	90.8	0.10	89.8	0.10	90.5	0.10	89.8	0.10
Silver	110	0.49 U	0.49	0.50 U	0.50	0.46 U	0.46	0.51 U	0.51	0.47 U	0.47	0.48 U	0.48
Aluminum		3650	2.1	4340	2.1	3820	1.9	5170	2.2	3490	2.0	3610	2.0
Arsenic	20	8.6	1.5 *	1.7	0.29	8.4	0.34	12.7	1.0 *	2.8	0.28	5.9	0.32
Barium	700	2.5	0.16	4.5	0.17	4.5	0.15	6.2	0.17	3.6	0.16	2.4	0.16
Beryllium	1	0.31	0.082	0.29	0.084	0.28	0.076	0.45	0.086	0.30	0.079	0.26	0.080
Calcium		69	1.8	91.9	1.8	134	1.7	275	1.9	63.9	1.7	43.7	1.7
Cadmium	1	0.70 U	0.7	0.71 U	0.71	0.65 U	0.65	0.73 U	0.73	0.67 U	0.67	0.68 U	0.68
Cobalt		0.58 U	0.58	0.94	0.59	0.68	0.53	0.60 U	0.6	0.55 U	0.55	0.56 U	0.56
Chromium		61.1	1.3	61.6	1.3	73.6	1.2	83.4	1.4	64.7	1.3	61.1	1.3
Copper	600	1.6	0.49	1.6	0.5	1.8	0.46	2.2	0.51	1.4	0.47	1.3	0.48
Iron		10800	0.47	12400	0.48	11100	0.44	15900	0.49	11400	0.45	11000	0.46
Mercury	14	0.10 U	0.10	0.085 U	0.085	0.09 U	0.09	0.10 U	0.10	0.10 U	0.10	0.09 U	0.09
Potassium		2060	21.1	2360	21.5	1740	19.4	2570	21.9	2200	20.2	2280	20.5
Magnesium		694	7.9	852	8	602	7.3	919	8.2	720	7.5	766	7.7
Manganese		3.6	0.12	8.2	0.13	12.7	0.11	11.3	0.13	2.8	0.12	1.8	0.12
Sodium		18.8	2.7	12.0	2.8	11.7	2.5	13.8	2.8	14.7	2.6	11.5	2.6
Nickel	250	1.8	0.66	2.6	0.67	1.9	0.61	2.1	0.69	1.6	0.63	1.3	0.64
Lead	400	6.3	0.27	6.9	0.26	4.5	0.3	8.5	1.5 **	6.3	1.2 *	4.9	0.28
Antimony	14	2.3 U	2.3	2.4 U	2.4	2.2 U	2.2	2.4 U	2.4	2.2 U	2.2	2.3 U	2.3
Selenium	63	0.26	0.17	0.18	0.17	0.19 U	0.19	0.3	0.19	0.26	0.16	0.18 U	0.18
Thallium	2	0.21 U	0.21	0.20 U	0.2	0.23 U	0.23	0.23 U	0.23	0.19 U	0.19	0.22 U	0.22
Vanadium	370	93.5	0.43	79.8	0.44	78.4	0.4	95.1	0.45	92.8	0.41	81.7	0.42
Zinc	1500	8.9	0.43	12.0	0.44	10.5	0.4	15.8	0.45	9.0	0.41	9.1	0.42
Cyanide	1100												
Dilution Factor		* = 5.00						* = 3.00, ** = 5.00		* = 5.00			
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-SB26-A02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484	
RFW#		004		002		003		001		002		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		77.9	0.10	75.5	0.10	81.2	0.1	76.7	0.10	83.1	0.1	74.2	0.10
Silver	110	0.46 U	0.46	0.53 U	0.53	0.47 U	0.47	0.50 U	0.50	0.54 U	0.54	0.60 U	0.6
Aluminum		4070	1.9	5120	2.3	4850	2.0	4010	2.1	6450	2.3	5430	2.6
Arsenic	20	4.1	0.30	4.5	0.35	5.6	0.31	2.2	0.36	5.7	0.31	8.5	0.76 *
Barium	700	3.4	0.15	4.4	0.18	4.2	0.16	2.7	0.17	36.2	0.18	58.6	0.20
Beryllium	1	0.41	0.076	0.45	0.088	0.84	0.079	0.33	0.084	0.58	0.090	0.51	0.10
Calcium		236	1.7	283	1.9	229	1.7	669	1.8	655	2.0	976	2.2
Cadmium	1	0.65 U	0.65	0.75 U	0.75	0.67 U	0.67	0.71 U	0.71	0.76 U	0.76	0.86 U	0.86
Cobalt		0.53 U	0.53	0.73	0.62	0.86	0.55	0.59 U	0.59	0.95	0.63	4.20	0.71
Chromium		52.2	1.2	71.7	1.4	59.7	1.3	46.4	1.3	69.9	1.4	48.6	1.6
Copper	600	1.8	0.46	2	0.53	1.1	0.47	1.2	0.50	2.7	0.54	2.9	0.60
Iron		10800	0.44	14500	0.51	12900	0.45	9440	0.48	20400	0.52	19200	0.58
Mercury	14	0.10 U	0.10	0.11 U	0.11	0.21	0.091	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11
Potassium		2700	19.5	3540	22.6	3660	20.2	2700	21.5	4210	23.0	2610	25.8
Magnesium		960	7.3	1310	8.4	1310	7.5	943	8.0	1720	8.6	1270	9.6
Manganese		7.2	0.11	10.6	0.13	8.0	0.12	5.4	0.13	25.1	0.13	24.8	0.15
Sodium		33.4	2.5	29.7	2.9	20.4	2.6	15.5	2.8	34.8	2.9	45.8	3.3
Nickel	250	1.5	0.61	3.1	0.71	2.7	0.63	1.4	0.67	4.9	0.72	11.2	0.81
Lead	400	3.9	0.26	5.9	0.30	3.9	0.27	3.2	0.31	8.1	0.54 *	7.5	0.33
Antimony	14	2.2 U	2.2	2.5 U	2.5	2.2 U	2.2	2.4 U	2.4	2.6 U	2.6	2.9 U	2.9
Selenium	63	0.19	0.17	0.20 U	0.20	0.17 U	0.17	0.20 U	0.20	0.29	0.17	0.70	0.21
Thallium	2	0.20 U	0.20	0.24 U	0.24	0.21 U	0.21	0.25 U	0.25	0.21 U	0.21	0.26 U	0.26
Vanadium	370	28.8	0.40	42.4	0.46	31.8	0.41	26.7	0.44	36.6	0.47	29.1	0.53
Zinc	1500	12.8	0.40	16.2	0.46	15.2	0.41	11.7	0.44	27.8	0.47	44.2	0.53
Cyanide	1100												
Dilution Factor										* = 2.00		* = 2.00	
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW2		CW2		CW2		CW4		CW5		CW5	
Sample		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02		CW04-SB01-A02		CW05-SB01-A02		CW05-SB02-A02	
Sample Type													
Batch#		9412G182		9412G154		9412G154		9412G264		9412G245		9412G245	
Prep#		94GTS484		95GTS001		95GTS001		94GI211					
RFW#		001		001		002		008		001		002	
Sample Depth (bgs)				2-4'		7-9'							
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/16/94		12/15/94		12/15/94		12/21/94					
Analysis Date		12/22/94		1/3/95		1/3/95		1/4/95					
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		80.7	0.1	84.4	0.10	80.0	0.10	83.2	0.10	86.1	0.10	83.9	0.10
Silver	110	0.52 U	0.52			0.5 U	0.5	0.52 U	0.52	7.4	0.47	0.40 U	0.40
Aluminum		2920	2.2			7310	2.1	5030	2.2	3920	2.0	3400	1.7
Arsenic	20	2.6	0.34			15.7	1.9 *	1.5	0.31	3.8	0.34	1.5	0.29
Barium	700	23.6	0.17			326	0.17	2.7	0.17	36.2	0.16	21.0	0.13
Beryllium	1	0.28	0.087			1.5	0.083	0.47	0.087	0.14	0.079	0.32	0.067
Calcium		502	1.9			1270	1.8	302	1.9	1000	1.7	851	1.5
Cadmium	1	0.74 U	0.74			0.9	0.71	0.74 U	0.74	0.67 U	0.67	0.57 U	0.57
Cobalt		0.91	0.61			5.9	0.58	0.61 U	0.61	1.0	0.55	0.47 U	0.47
Chromium		32.2	1.4			56.5	1.3	63.5	1.4	42.2	1.3	38.3	1.1
Copper	600	2.7	0.52			5.5	0.5	379	0.52	21.5	0.47	2.0	0.40
Iron		11100	0.50			17600	0.48	11500	0.50	8950	0.45	5930	0.39
Mercury	14	0.083 U	0.083			0.12 U	0.12	0.09 U	0.09	0.63	0.12	0.09 U	0.09
Potassium		1980	22.2			3350	21.3	3490	22.2	944	20.1	1880	17.2
Magnesium		776	8.3			1880	8	1320	8.3	527	7.5	717	6.4
Manganese		12.5	0.13			35.1	0.12	8.8	0.13	19.7	0.12	7.2	0.10
Sodium		40.8	2.8			42.7	2.7	15.3	2.8	28.9	2.6	13.5	2.2
Nickel	250	2.6	0.70			23.2	0.67	1.5	0.69	2.7	0.63	1.6	0.54
Lead	400	3.1	0.29			5.6	1.7 *	1440	5.8	20.7	3.0 *	3.3	0.25
Antimony	14	2.5 U	2.5			2.4 U	2.4	2.5	2.5	2.2 U	2.2	1.9 U	1.9
Selenium	63	0.20	0.19			4.2	0.44 *	0.17 U	0.17	0.40	0.19	0.35	0.16
Thallium	2	0.23 U	0.23			0.27 U	0.27	0.21 U	0.21	0.24 U	0.24	0.33	0.20
Vanadium	370	19.4	0.46			23.6	0.44	20.6	0.45	20.7	0.41	21.4	0.35
Zinc	1500	19.3	0.46			63.9	0.44	46.2	0.45	40.4	0.41	11.4	0.35
Cyanide	1100									0.43 U	0.43	0.33 U	0.33
Dilution Factor		* = 10.0				* = 5.00				* = 10.0			
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW6		CW6		CW6		CW9		B6	
Sample		CW06-SB34-A01		CW06-SB34-A02		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01	
Sample Type											
Batch#		9501G423		9501G423		9505G840		9501G450		9501G553	
Prep#		95GTS006		95GTS006		95GTS285		95GTS006		95GTS013	
RFW#		001		002		001		003		008	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/3/95		1/3/95		5/10/95		1/4/95		1/10/95	
Analysis Date		1/9/95		1/9/95		5/16/95		1/9/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.8	0.10	86.6	0.10	70.9	0.10	86.9	0.10	88.0	0.1
Silver	110							0.93	0.50	0.45 U	0.45
Aluminum								3830	2.1	4220	3.1
Arsenic	20							2.6	0.33	4.6	0.35
Barium	700							6.6	0.17	6.3	0.15
Beryllium	1							0.39	0.084	0.055 U	0.055
Calcium								366	1.8	303	1.5
Cadmium	1							0.71 U	0.71	0.53 U	0.53
Cobalt								1.0	0.59	0.59	0.42
Chromium								44.0	1.3	51.8	0.85
Copper	600							2.3	0.50	1.4	0.73
Iron								9720	0.48	11000	0.45
Mercury	14							0.12	0.11	0.095 U	0.095
Potassium								1480	21.4	2570	12.3
Magnesium								698	8.0	1040	6.2
Manganese								11.9	0.13	5.6	0.16
Sodium								21.4	2.7	24.2	3.5
Nickel	250							2.8	0.67	1.9	0.76
Lead	400							3.9	0.29	1.9	0.18
Antimony	14							2.4 U	2.4	2.0 U	2.0
Selenium	63							0.19 U	0.19	0.4	0.27
Thallium	2							0.36 U	0.36	0.13 U	0.13
Vanadium	370							27.4	0.44	25.6	0.38
Zinc	1500							12.8	0.44	18.4	0.35
Cyanide	1100									0.42 U	0.42
Dilution Factor											
Method:TAL Metals											

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		B6		B7		B7		B8		B8		B9	
Sample		B6-SB01-A02		B7-SB01-A01		B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01	
Sample Type													
Batch#		9501G553		9501G553		9501G553		9501G553		9501G553		9501G831	
Prep#		95GTS013		95GTS013		95GTS013		95GTS013		95GTS013			
RFW#		009		006		007		004		005		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95			
Analysis Date		1/13/95		1/13/95		1/13/95		1/13/95		1/13/95			
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		84.6	0.1	85.5	0.1	83.4	0.10	91.2	0.1	84.8	0.10	84.7	0.10
Silver	110	0.49 U	0.49	0.49 U	0.49	0.48 U	0.48	0.44 U	0.44	0.48 U	0.48	0.58 U	0.58
Aluminum		6800	3.3	15700	3.3	2220	3.2	4510	3.0	5800	3.2	7800	3.9
Arsenic	20	4.3	0.38	10.3	0.72 *	1.3	0.38	3.5	0.35	7.5	0.73 *	19.5	2.0 **
Barium	700	5.0	0.16	25.9	0.16	2.3	0.15	3.3	0.14	8.8	0.15	40.1	0.19
Beryllium	1	0.72	0.059	1.1	0.059	0.06 U	0.06	0.053 U	0.053	0.76	0.058	0.85	0.070
Calcium		235	1.7	653	1.7	76.2	1.6	44.8	1.5	76	1.6	746	2.0
Cadmium	1	0.57 U	0.57	0.57 U	0.57	0.56 U	0.56	0.51 U	0.51	0.56 U	0.56	0.58 U	0.68
Cobalt		1.1	0.45	4.5	0.45	0.54	0.44	0.65	0.41	1.1	0.44	3.0	0.54
Chromium		77.5	0.93	66.1	0.92	33.6	0.90	48.0	0.83	64.7	0.91	76.5	1.1
Copper	600	1.8	0.79	6.6	0.79	0.77 U	0.77	1.2	0.71	1.7	0.77	5.1	0.94
Iron		16700	0.49	32000	0.49	6100	0.48	11800	0.44	16000	0.48	28300	0.58
Mercury	14	0.11 U	0.11	0.1 U	0.1	0.09 U	0.09	0.081 U	0.081	0.12 U	0.12	0.14	0.10
Potassium		3900	13.4	2780	13.3	1710	13.0	2410	12.0	3740	13.1	4080	15.9
Magnesium		1710	6.8	2390	6.7	622	6.6	932	6.1	1450	6.6	1890	8.0
Manganese		9.4	0.18	122	0.18	2.8	0.17	3.4	0.16	6.8	0.17	48.7	0.21
Sodium		56.8	3.8	37.7	3.8	39.9	3.7	22.4	3.4	18.7	3.7	29.8	4.5
Nickel	250	3.1	0.83	8.3	0.83	1.4	0.81	2.2	0.74	3	0.81	5.6	0.98
Lead	400	3.5	0.20	11.1	0.95 **	1.7	0.20	2.7	0.18	4.1	0.19	12.1	0.56 *
Antimony	14	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	2.5 U	2.5
Selenium	63	0.30 U	0.30	0.85	0.29	0.30 U	0.30	0.49	0.28	0.55	0.29	0.90	0.35
Thallium	2	0.14 U	0.14	0.13 U	0.13	0.14 U	0.14	0.13 U	0.13	0.14 U	0.14	0.26 U	0.26
Vanadium	370	35.0	0.41	59.6	0.41	17.3	0.40	25.0	0.37	35.1	0.41	23.5	0.49
Zinc	1500	20.3	0.37	34.3	0.37	6.9	0.36	11.6	0.34	17.5	0.37	47.7	0.44
Cyanide	1100	0.51 U	0.51	0.41	0.41	0.39 U	0.39	0.38 U	0.38	0.55 U	0.55	0.47 U	0.47
Dilution Factor				* = 2.00, ** = 5.00						* = 2.00		* = 2.00, ** = 5.00	
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		B9		B9		B10		B10	
Sample		B9-SB01-A02		B9-SB01-C02		B10-SB01-A01		B10-SB01-A02	
Sample Type									
Batch#		9501G831		9501G831		9501G553		9501G553	
Prep#						95GTS013		95GTS013	
RFW#		002		003		001		002	
Sample Depth (bgs)									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date						1/10/95		1/10/95	
Analysis Date						1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.4	0.10	81.9	0.10	84.1	0.1	84.9	0.1
Silver	110	0.58 U	0.58	0.47 U	0.47	0.49 U	0.49	0.48 U	0.48
Aluminum		6250	3.9	6520	3.1	9790	3.3	10200	3.2
Arsenic	20	22.7	2.6 *	20.4	1.6 *	31.6	3.8 *	24.9	3.7 *
Barium	700	39.2	0.18	35.3	0.15	22.3	0.16	26.0	0.15
Beryllium	1	0.68	0.069	0.74	0.056	1.7	0.058	1.6	0.058
Calcium		297	1.9	244	1.6	517	1.6	501	1.6
Cadmium	1	0.67 U	0.67	0.54 U	0.54	0.57 U	0.57	0.56 U	0.56
Cobalt		2.9	0.53	2.8	0.43	3.3	0.45	3.4	0.44
Chromium		69.2	1.1	70.0	0.88	126	0.92	128	0.91
Copper	600	3.5	0.92	3.4	0.75	3.3	0.78	3.1	0.77
Iron		25200	0.58	23800	0.47	45500	0.49	43200	0.48
Mercury	14	0.32	0.092	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10
Potassium		3300	15.7	4080	12.7	10600	13.2	10400	13.1
Magnesium		1490	7.9	1830	6.4	3920	6.7	3960	6.6
Manganese		25.1	0.21	25.9	0.17	31.0	0.18	23.6	0.17
Sodium		19.8	4.4	20.3	3.6	55.2	3.7	44.6	3.7
Nickel	250	5.6	0.97	6.0	0.78	7.1	0.82	7.4	0.81
Lead	400	6.1	0.19	5.6	0.23	5.1	0.20	4.5	0.19
Antimony	14	2.5 U	2.5	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Selenium	63	0.49	0.23	0.50	0.29	0.56	0.30	0.61	0.29
Thallium	2	0.17 U	0.17	0.21 U	0.21	0.14 U	0.14	0.14 U	0.14
Vanadium	370	25.6	0.48	20.6	0.39	42.9	0.41	40.9	0.41
Zinc	1500	49.4	0.44	49.8	0.35	55.6	0.37	53.6	0.37
Cyanide	1100	0.42 U	0.42	0.40 U	0.40	0.56 U	0.56	0.49 U	0.49
Dilution Factor		* = 10.00		* = 5.00		* = 10.0		* = 10.0	
Method:TAL Metals									

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type													
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#		94GP1108		94GP1108		94GP1108		94GP1108		94GP1108		94GP1108	
RFW#		001		003		002		006		004		005	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
beta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
delta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
gamma-BHC (Lindane)	0.52	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Heptachlor	0.15	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Aldrin	0.04	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Heptachlor epoxide		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Endosulfan I	340	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Dieldrin	0.042	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDE	2	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endrin	17	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endosulfan II	340	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDD	3	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endosulfan sulfate		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDT	2	0.0037 U	0.0037	0.0036 U	0.0036	0.004	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Methoxychlor	280	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018
Endrin ketone		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endrin aldehyde		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
alpha-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
gamma-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Toxaphene	0.1	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18
Aroclor-1016	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1221	0.49	0.073 U	0.073	0.073 U	0.073	0.072 U	0.072	0.073 U	0.073	0.073 U	0.073	0.073 U	0.073
Aroclor-1232	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1242	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1248	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1254	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1260	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-SB26-A02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB30-A02DL	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#		94GP1108		94GP1108		94GP1108		94GP1108		94GP1090		94GP1090	
RFW#		004		002		003		001		002		002DL	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		5.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
beta-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
delta-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
gamma-BHC (Lindane)	0.52	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Heptachlor	0.15	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Aldrin	0.04	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Heptachlor epoxide		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Endosulfan I	340	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Dieldrin	0.042	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDE	2	0.0038 J	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0035 JP	0.0039	0.019 U	0.019
Endrin	17	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
Endosulfan II	340	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDD	3	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.012 P	0.0039	.014 JD	0.019
Endosulfan sulfate		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDT	2	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.062 P	0.0039	.053 DP	0.019
Methoxychlor	280	0.021 U	0.021	0.022 U	0.022	0.02 U	0.02	0.022 U	0.022	0.019 U	0.019	0.097 U	0.097
Endrin ketone		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
Endrin aldehyde		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
alpha-Chlordane		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
gamma-Chlordane		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Toxaphene	0.1	0.21 U	0.21	0.22 U	0.22	0.2 U	0.2	0.22 U	0.22	0.19 U	0.19	0.97 U	0.97
Aroclor-1016	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1221	0.49	0.085 U	0.085	0.087 U	0.087	0.082 U	0.082	0.086 U	0.086	0.078 U	0.078	0.39 U	0.39
Aroclor-1232	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1242	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1248	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1254	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.61	0.039	.75 D	0.19
Aroclor-1260	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW2		CW2		CW2		CW2		CW4		CW5	
Sample		CW02-SB31-A02		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02DL		CW04-SB01-A02		CW05-SB01-A02	
Sample Type													
Batch#		9412G182		9412G182		9412G154		9412G154		9412G264		9412G245	
Prep#		94GP1090		94GP1090		94GP1090		94GP1090		94GP1108		94GP1108	
RFW#		003		001		002		002DL		008		001	
Sample Depth (bgs)						7-9'		7-9'					
Dilution Factor		1.00		1.00		1.00		10.0		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/16/94		12/16/94		12/15/94		NA		12/21/94		12/20/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
beta-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
delta-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Heptachlor	0.15	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Aldrin	0.04	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Heptachlor epoxide		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Endosulfan I	340	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Dieldrin	0.042	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDE	2	0.0044 U	0.0044	0.0041 U	0.0041	0.0083 P	0.0041	0.041 U	0.041	0.004 U	0.004	0.21 P	0.0038
Endrin	17	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
Endosulfan II	340	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDD	3	0.0098	0.0044	0.0073	0.0041	0.26	0.0041	.2 D	0.041	0.004 U	0.004	0.087	0.0038
Endosulfan sulfate		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDT	2	0.0058	0.0044	0.0041 U	0.0041	0.046	0.0041	.043 D	0.041	0.004 U	0.004	0.087	0.0038
Methoxychlor	280	0.022 U	0.022	0.02 U	0.02	0.021 U	0.021	0.21 U	0.21	0.02 U	0.02	0.0038 U	0.0038
Endrin ketone		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
Endrin aldehyde		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
alpha-Chlordane		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0084 P	0.0019
gamma-Chlordane		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0092	0.0019
Toxaphene	0.1	0.22 U	0.22	0.2 U	0.2	0.21 U	0.21	2.1 U	2.1	0.2 U	0.2	0.19 U	0.19
Aroclor-1016	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1221	0.49	0.089 U	0.089	0.082 U	0.082	0.083 U	0.083	0.83 U	0.83	0.079 U	0.079	0.077 U	0.077
Aroclor-1232	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1242	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1248	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1254	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.17	0.038
Aroclor-1260	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.15	0.038
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW5		CW5		CW6		CW6		CW6		CW6	
Sample		CW05-SB01-A02DL		CW05-SB02-A02		CW06-SB02-A01		CW06-SB02-A01DL		CW06-SB34-A01		CW06-SB34-A01DL	
Sample Type													
Batch#		9412G245		9412G245		9505G840		9505G840		9501G423		9501G423	
Prep#		94GP1108		94GP1108		95GP0512		95GP0512		95GP0028		95GP0028	
RFW#		001DL		002		001		001 DL		001		001DL	
Sample Depth (bgs)													
Dilution Factor		10.0		1.00		1.00		1.00		1.00		10.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/20/94		12/20/94		5/10/95		5/10/95		1/3/95		1/3/95	
Analysis Date		1/5/95		1/4/95		5/29/95		5/29/95		1/17/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
beta-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
delta-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
gamma-BHC (Lindane)	0.52	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Heptachlor	0.15	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Aldrin	0.04	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Heptachlor epoxide		0.019 U	0.019	0.0019 U	0.0019	0.0078 P	0.0023	0.23 U	0.23	0.018 P	0.002	0.02 U	0.02
Endosulfan I	340	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.039 U	0.039
Dieldrin	0.042	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0047 P	0.0039	.061 DP	0.039
4,4'-DDE	2	.18 D	0.038	0.0058	0.0039	0.11 CP	0.0046	.34 JCD	0.46	0.074 P	0.0039	0.039 U	0.039
Endrin	17	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
Endosulfan II	340	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
4,4'-DDD	3	.069 D	0.038	0.0035 J	0.0039	0.21 CP	0.0046	2.9 CD	0.46	0.0095 P	0.0039	0.039 U	0.039
Endosulfan sulfate		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
4,4'-DDT	2	.067 D	0.038	0.0039 U	0.0039	0.46 UZ	0.0046	0.46 UZ	0.46	0.16 P	0.0039	.18 DP	0.039
Methoxychlor	280	0.19 U	0.19	0.019 U	0.019	0.023 U	0.023	2.3 U	2.3	0.02 U	0.02	0.2 U	0.2
Endrin ketone		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
Endrin aldehyde		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
alpha-Chlordane		0.019 U	0.019	0.0019 U	0.0019	0.043	0.0023	.07 JD	0.23	0.14 P	0.002	.14 DP	0.02
gamma-Chlordane		0.019 U	0.019	0.0019 U	0.0019	0.047	0.0023	.068 JD	0.23	0.11 P	0.002	.11 DP	0.02
Toxaphene	0.1	1.9 U	1.9	0.19 U	0.19	0.23 U	0.23	23 U	23	0.2 U	0.2	2 U	2
Aroclor-1016	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1221	0.49	0.77 U	0.77	0.077 U	0.077	0.092 U	0.092	9.2 U	9.2	0.079 U	0.079	0.79 U	0.79
Aroclor-1232	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1242	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1248	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1254	0.49	.2 JD	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1260	0.49	.18 JD	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW6		CW9		B6		B6		B6		B7	
Sample		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A02		B6-SB01-A02DL		B7-SB01-A01	
Sample Type													
Batch#		9501G423		9501G450		9501G553		9501G553		9501G553		9501G553	
Prep#		95GP0028		95GP0028		95GP0050		95GP0050		95GP0050		95GP0050	
RFW#		002		001		008		009		009DL		006	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		5.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/3/95		1/4/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		1/17/95		1/17/95		1/26/95		1/26/95		2/6/95		1/26/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
beta-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
delta-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Heptachlor	0.15	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Aldrin	0.04	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Heptachlor epoxide		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Endosulfan I	340	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Dieldrin	0.042	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDE	2	0.0038 U	0.0038	0.0076 P	0.0038	0.028	0.0037	0.071	0.0039	.066 D	0.02	0.023	0.0038
Endrin	17	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endosulfan II	340	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDD	3	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endosulfan sulfate		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDT	2	0.011 P	0.0038	0.008 P	0.0038	0.032	0.0037	0.053	0.0039	.047 D	0.02	0.013	0.0038
Methoxychlor	280	0.019 U	0.019	0.019 U	0.019	0.018 U	0.018	0.02 U	0.02	0.098 U	0.098	0.019 U	0.019
Endrin ketone		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endrin aldehyde		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
alpha-Chlordane		0.0034 P	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
gamma-Chlordane		0.0027 P	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Toxaphene	0.1	0.19 U	0.19	0.19 U	0.19	0.18 U	0.18	0.2 U	0.2	0.98 U	0.98	0.19 U	0.19
Aroclor-1016	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1221	0.49	0.076 U	0.076	0.076 U	0.076	0.074 U	0.074	0.078 U	0.078	0.39 U	0.39	0.077 U	0.077
Aroclor-1232	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1242	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1248	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1254	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1260	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		B7		B8		B8		B9		B9		B9	
Sample		B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01		B9-SB01-A02		B9-SB01-C02	
Sample Type												Duplicate	
Batch#		9501G553		9501G553		9501G553		9501G831		9501G831		9501G831	
Prep#		95GP0050		95GP0050		95GP0050		95GP0079		95GP0079		95GP0079	
RFW#		007		004		005		001		002		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95		1/23/95	
Analysis Date		1/26/95		1/26/95		1/26/95		2/3/95		2/3/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
beta-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
delta-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
gamma-BHC (Lindane)	0.52	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Heptachlor	0.15	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Aldrin	0.04	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Heptachlor epoxide		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Endosulfan I	340	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Dieldrin	0.042	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDE	2	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.011	0.0039	0.004 U	0.004	0.0044	0.004
Endrin	17	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endosulfan II	340	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDD	3	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endosulfan sulfate		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDT	2	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.02	0.0039	0.0024 J	0.004	0.0053	0.004
Methoxychlor	280	0.019 U	0.019	0.018 U	0.018	0.019 U	0.019	0.019 U	0.019	0.02 U	0.02	0.02 U	0.02
Endrin ketone		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endrin aldehyde		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
alpha-Chlordane		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
gamma-Chlordane		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Toxaphene	0.1	0.19 U	0.19	0.18 U	0.18	0.19 U	0.19	0.19 U	0.19	0.2 U	0.2	0.2 U	0.2
Aroclor-1016	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1221	0.49	0.078 U	0.078	0.072 U	0.072	0.077 U	0.077	0.078 U	0.078	0.079 U	0.079	0.081 U	0.081
Aroclor-1232	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1242	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1248	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1254	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1260	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		B10		B10		B10	
Sample		B10-SB01-A01		B10-SB01-A02		B10-SB01-A02RE	
Sample Type							
Batch#		9501G553		9501G553		9501G553	
Prep#		95GP0050		95GP0050		95GP0079	
RFW#		001		002		002RE	
Sample Depth (bgs)							
Dilution Factor		1.00		1.00		1.00	
Matrix		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/94		1/10/95		1/10/95	
Analysis Date		1/26/95		1/26/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
beta-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
delta-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Heptachlor	0.15	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Aldrin	0.04	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Heptachlor epoxide		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Endosulfan I	340	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Dieldrin	0.042	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDE	2	0.0035 J	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endrin	17	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endosulfan II	340	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDD	3	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endosulfan sulfate		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDT	2	0.0024 J	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Methoxychlor	280	0.02 U	0.02	0.019 U	0.019	0.019 U	0.019
Endrin ketone		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endrin aldehyde		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
alpha-Chlordane		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
gamma-Chlordane		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Toxaphene	0.1	0.2 U	0.2	0.19 U	0.19	0.19 U	0.19
Aroclor-1016	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1221	0.49	0.079 U	0.079	0.078 U	0.078	0.077 U	0.077
Aroclor-1232	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1242	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1248	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1254	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1260	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Method:TCL Pesticides/PCBs							

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-D02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Trip Blank		Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GVC041		95GVE071		95GVE071		95GVE071		95GVC039		95GVE071		95GVC039	
RFW#			001		003		005		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/1/95		3/19/95		3/19/95		3/19/95		2/27/95		3/19/95		2/27/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result		Result		Result		Result		Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	23	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-D01		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Trip Blank		Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9502G358		9503G739	
Prep#			95GVE071		95GVC039		95GVE071 & 62		95GVC039		95GVC039		95GVC041		95GVE071	
RFW#			008		007		010		009		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/19/95		2/27/95		3/19/95		2/27/95		2/27/95		3/1/95		3/19/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	20	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	110	10	360	50 *	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	36	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	48	10	780	100 *	990	50 *	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor					* = 10		* = 5									
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2		CW6	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02		CW06-MW01-A01	
Sample Type																
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739		9505G840	
Prep#			95GVC041		95GVE072		95GVC041		95GVE072		95GVC041		95GVE072		95GVC129	
RFW#			014		014		016		016		018		018		002	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95		5/10/95	
Analysis Date			3/1/95		3/20/95		3/1/95		3/20/95		3/1/95		3/20/95		5/16/95	
Analysis	Standard	MDL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	11	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	3 J	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	4 J	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW6	
Sample			CW06-MW01-A02		CW06-MW01-E02		CW06-MW01-D02		CW06-MW34-A01		CW06-MW34-A02		CW06-MW34-D01	
Sample Type					Field Rinsate Blank		Trip Blank						Trip Blank	
Batch#			9505G138		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GVB148		95GVB148		95GVB148		95GVC034		95GVE071		95GVC034	
RFW#			002		003		004		001		001		002	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/25/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			6/1/95		6/1/95		6/1/95		2/23/95		3/19/95		2/23/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	30	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW9		CW9		CW9		CW9		CW9		B6	
Sample			CW09-MW35-A01		CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G300		9503G723		9502G300		9502G300		9503G723		9502G198	
Prep#			95GVC034		95GVE071		95GVC036		95GVC036		95GVE071		95GVC029	
RFW#			003		002		007		005		004		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/20/95		3/13/95		2/20/95		2/20/95		3/13/95		2/15/95	
Analysis Date			2/23/95		3/19/95		2/24/95		2/24/95		3/19/95		2/20/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	12	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	25	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			B6		B7		B7		B8		B8		B9		B9	
Sample			B6-MW06B-A02		B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type																
Batch#			9503G641		9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GVC053		95GVC029		95GVC052		95GVC029		95GVC053		95GVC029		95GVC052	
RFW#			001		005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/10/95		2/20/95		3/9/95		2/20/95		3/10/95		2/20/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			B10		B10		B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-D01		B10-MW10B-D02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Trip Blank		Trip Blank		Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641		9502G198		9503G641	
Prep#			95GVC030		95GVC053		95GVC030		95GVC053		95GVC030		95GVC053	
RFW#			009		005		011		007		012		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95		2/13/95		3/8/95	
Analysis Date			2/21/95		3/10/95		2/21/95		3/10/95		2/21/95		3/10/95	
Analysis	Standard	MDL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	14	10	10 U	10	15	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GB0123		95GB0181		95GB0181		95GB0123		95GB0181		95GB0123	
RFW#			001		003		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/12/95		3/30/95		3/29/95		3/13/95		3/29/95		3/15/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Phenol	4000	7.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
2-Chloronaphthalene		8.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Acenaphthene	400	6.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GB0123		95GB0181		95GB0181		95GB0123		95GB0181		95GB0123	
RFW#			001		003		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/12/95		3/30/95		3/29/95		3/13/95		3/29/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Dibenzofuran		6.5	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
4,6-Dinitro-2-methylphenol		5.3	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Phenanthrene	10	5.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Carbazole		4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	11 U	11	11 U	11	5 J	11	11 U	11
Fluoranthene	300	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	11	10 U	10	11 U	11	2 J	11	2 J	11	2 J	11
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Total Est. Conc. of TIC			8 JB		5 J		5 J		5 J				40 J	
Dilution Factor														
Method:TCL Semivolatiles									6 JB				5 JB	

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9503G739	
Prep#			95GB0181		95GB0123		95GB0181		95GB0123		95GB0123		95GB0181	
RFW#			008		007		010		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/29/95		3/15/95		3/29/95		3/15/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	3 J	10	5 J	10	10 U	10	12 U	12	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4,5-Trichlorophenol	700	4.7	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Nitroaniline		6.1	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
3-Nitroaniline		5.2	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dinitrophenol	40	4.6	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9503G739	
Prep#			95GB0181		95GB0123		95GB0181		95GB0123		95GB0123		95GB0181	
RFW#			008		007		010		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/29/95		3/15/95		3/29/95		3/15/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Nitroaniline		6.4	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
4,6-Dinitro-2-methylphenol		5.3	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Pentachlorophenol	1	4.0	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	2 J	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	1 J	10	1 J	10	10 U	10	10 U	10	2 J	12	2 J	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Total Est. Conc. of TIC					2 J		2 J		99 J		78 J		3 J	
Dilution Factor														
Method:TCL Semivolatiles					5 JB				5 JB		6 JB			

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type														
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739	
Prep#			95GB0123		95GB0181		95GB0123		95GB0181		95GB0123		95GB0181	
RFW#			014		014		016		016		018		018	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date			3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	5 J	10	11 U	11	12 U	12	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Nitroaniline		6.1	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
3-Nitroaniline		5.2	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type														
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739	
Prep#			95GB0123		95GB0181		95GB0123		95GB0181		95GB0123		95GB0181	
RFW#			014		014		016		016		018		018	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date			3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Nitroaniline		6.4	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Pentachlorophenol	1	4.0	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	11	10	11 U	11	2 J	12	11 U	11	2 J	12
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	1 J	11	2 J	12	1 J	11	2 J	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Total Est. Conc. of TIC			4 JB				5 JB				3 J			
Dilution Factor														
Method:TCL Semivolatiles											5 JB			

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW9	
Sample			CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW09-MW35-A01	
Sample Type							Field Rinsate Blank							
Batch#			9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GB0319		95GB0350		95GB0350		95GB0118		95GB0181		95GB0118	
RFW#			002		002		003		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			5/29/95		6/2/95		6/2/95		3/15/95		3/27/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Naphthalene		8.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4,5-Trichlorophenol	700	4.7	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
2-Chloronaphthalene		8.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Nitroaniline		6.1	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
3-Nitroaniline		5.2	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Acenaphthene	400	6.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dinitrophenol	40	4.6	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW9	
Sample			CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW09-MW35-A01	
Sample Type							Field Rinsate Blank							
Batch#			9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GB0319		95GB0350		95GB0350		95GB0118		95GB0181		95GB0118	
RFW#			002		002		003		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			5/29/95		6/2/95		6/2/95		3/15/95		3/27/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Dibenzofuran		6.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Nitroaniline		6.4	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
4,6-Dinitro-2-methylphenol		5.3	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Pentachlorophenol	1	4.0	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Phenanthrene	10	5.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Carbazole		4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	21 B	10	1 JB	11	2 J	10	11 U	11	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Total Est. Conc. of TIC					29 J		42 J		6 J		300 J			
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6	
Sample			CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type					Field Rinsate Blank									
Batch#			9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#			95GB0181		95GB0118		95GB0118		95GB0181		95GB0108		95GB0172	
RFW#			002		007		005		004		003		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date			3/27/95		3/15/95		3/15/95		3/27/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Nitroaniline		6.1	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
3-Nitroaniline		5.2	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6	
Sample			CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type					Field Rinsate Blank									
Batch#			9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#			95GB0181		95GB0118		95GB0118		95GB0181		95GB0108		95GB0172	
RFW#			002		007		005		004		003		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date			3/27/95		3/15/95		3/15/95		3/27/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	1 J	10	1 JB	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Nitroaniline		6.4	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
4,6-Dinitro-2-methylphenol		5.3	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Pentachlorophenol	1	4.0	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	2 J	10	6 J	11	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Total Est. Conc. of TIC			600 J		13 J		4 J		430 J		11 JB			
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B7		B7		B8		B8		B9		B9	
Sample			B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type														
Batch#			9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GB0108		95GB0166		95GB0108		95GB0172		95GB0108		95GB0166	
RFW#			005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/7/95		3/26/95		3/7/95		3/26/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B7		B7		B8		B8		B9		B9	
Sample			B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type														
Batch#			9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GB0108		95GB0166		95GB0108		95GB0172		95GB0108		95GB0166	
RFW#			005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/7/95		3/26/95		3/7/95		3/26/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Diethylphthalate	5000	5.4	1 J	10	10 U	10	11 U	11	2 JB	11	1 J	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	1 J	10	11 U	11	11 U	11	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Total Est. Conc. of TIC			6 JB		2 J		5 JB		3 J		8 JB		3 J	
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172	
RFW#			009		005		012		008	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date			3/7/95		3/25/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	12 U	12	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	12 U	12	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	12 U	12	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	12 U	12	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	12 U	12	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	12 U	12	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	12 U	12	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	12 U	12	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	12 U	12	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	12 U	12	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	12 U	12	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	12 U	12	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	12 U	12	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	12 U	12	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	12 U	12	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	12 U	12	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	12 U	12	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	12 U	12	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	12 U	12	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	30 U	30	26 U	26	28 U	28	28 U	28
2-Chloronaphthalene		8.2	12 U	12	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	30 U	30	26 U	26	28 U	28	28 U	28
Dimethylphthalate	7000	4.4	12 U	12	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	12 U	12	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	12 U	12	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	30 U	30	26 U	26	28 U	28	28 U	28
Acenaphthene	400	6.7	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	30 U	30	26 U	26	28 U	28	28 U	28

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172	
RFW#			009		005		012		008	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date			3/7/95		3/25/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	30 U	30	26 U	26	28 U	28	28 U	28
Dibenzofuran		6.5	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	12 U	12	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	12 U	12	1 JB	11	11 U	11	2 JB	11
4-Chlorophenyl-phenylether		7.0	12 U	12	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	12 U	12	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	30 U	30	26 U	26	28 U	28	28 U	28
4,6-Dinitro-2-methylphenol		5.3	30 U	30	26 U	26	28 U	28	28 U	28
N-Nitrosodiphenylamine (1)	20	4.2	12 U	12	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	12 U	12	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	30 U	30	26 U	26	28 U	28	28 U	28
Phenanthrene	10	5.0	12 U	12	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	12 U	12	11 U	11	11 U	11	11 U	11
Carbazole		4.4	12 U	12	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	12 U	12	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	12 U	12	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	12 U	12	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	12 U	12	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	12 U	12	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	12 U	12	600	110 *	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	12 U	12	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	12 U	12	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	12 U	12	11 U	11	11 U	11	11 U	11
Total Est. Conc. of TIC			9 JB				15 JB			
Dilution Factor					* = 10					
Method:TCL Semivolatiles										

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-A01		CW01-MW26-A01 SOL		CW01-MW26-A02		CW01-MW26-A02		CW01-MW26-A02 SOL	
Sample Type		Total		Soluble		Total		Total		Soluble	
Batch#		9502G358		9502G358		9502G739		9502G739		9502G739	
Prep#		95GI454		95GI454		95GI508		95GI508		95GI508	
RFW#		001		002		002		003		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		3/14/95		3/14/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	6830	24.0	279	24.0	885	16.8	4990	16.8	375	16.8
Arsenic	8	7.8	1.9	1.9 U	1.9	1.9 U	1.9	3.8	1.9	1.9 U	1.9
Barium	2000	81.4	1.7	62.9	1.7	116	0.80	99.3	0.80	86.7	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.56	0.30	0.30 U	0.30
Calcium		25800	10.4	24500	10.4	24900	8.4	32700	8.4	31300	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		6.0	3.0	5.1	3.0	13.2	2.3	8.0	2.3	4.2	2.3
Chromium	100	79.7	2.9	2.9 U	2.9	4.7 U	4.7	54.0	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	1.9 U	1.9	8.1	4.0	8.9	4.0	5.7	4.0
Iron	300	15500	6.4	25.0	6.4	93.3	2.5	10700	2.5	18.6	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		13100	685	9970	685	11800	67.9	14500	67.9	12300	67.9
Magnesium		4810	18.3	3390	18.3	13500	34.3	5340	34.3	4240	34.3
Manganese	50	68.3	1.8	45.2	1.8	114	0.90	71.8	0.90	54.6	0.90
Sodium	50000	55300	30.5	53100	30.5	73800	19.1	58600	19.1	56800	19.1
Nickel	100	24.6	10.8	10.8 U	10.8	15.0	4.2	7.9	4.2	8.7	4.2
Lead	10	5.6	1.6	1.6 U	1.6	2.2	1.2	4.1	1.2	1.2	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium		57.7	2.3	2.3 U	2.3	2.1 U	2.1	39.7	2.1	2.1 U	2.1
Zinc	5000	39.0	3.8	14.4	3.8	32.5	1.9	35.6	1.9	17.2	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-E02		CW01-MW26-E02 SOL		CW01-MW27-A01		CW01-MW27-A01 SOL		CW01-MW27-A02	
Sample Type		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total	
Batch#		9502G739		9502G739		9502G358		9502G358		9502G739	
Prep#		95GI508		95GI508		95GI454		95GI454		95GI508	
RFW#		004		007		003		004		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	20.2	16.8	18.4	16.8	3770	24.0	653	24.0	7620	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	5.0	1.9	1.9 U	1.9	4.4	1.9
Barium	2000	0.80 U	0.80	0.80 U	0.80	112	1.7	95.6	1.7	142	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.99	0.30
Calcium		105	8.4	115	8.4	22000	10.4	21500	10.4	26200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	12.4	3.0	12.2	3.0	16.6	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	34.5	2.9	2.9 U	2.9	76.6	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	10.4	4.0
Iron	300	12.0	2.5	16.8	2.5	7190	6.4	122	6.4	15400	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		67.9	67.9	119	67.9	11400	685	10500	685	14500	67.9
Magnesium		34.3	34.3	47.6	34.3	11700	18.3	10900	18.3	15600	34.3
Manganese	50	0.90 U	0.90	0.90 U	0.90	110	1.8	98.4	1.8	140	0.90
Sodium	50000	132	19.1	156	19.1	64300	30.5	62700	30.5	79100	19.1
Nickel	100	4.2 U	4.2	4.2 U	4.2	11.9	10.8	20.4	10.8	30.0	4.2
Lead	10	2.6	1.2	1.5	1.2	5.6	1.6	1.6 U	1.6	11.0	1.2
Antimony	20	10.9 U	10.9	13.2	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.1 U	2.1	2.1 U	2.1	34.4	2.3	2.3 U	2.3	71.5	2.1
Zinc	5000	1.9 U	1.9	1.9 U	1.9	41.9	3.8	33.4	3.8	56.6	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW27-A02 SOL		CW01-MW28-A01		CW01-MW28-A01 SOL		CW01-MW28-A02		CW01-MW28-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G739		9502G358		9502G358		9502G739		9502G739	
Prep#		95GI508		95GI454		95GI454		95GI508		95GI508	
RFW#		002		005		006		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/21/95		2/21/95		3/14/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	885	16.8	3480	24.0	510	24.0	4150	16.8	498	16.8
Arsenic	8	1.9 U	1.9	4.3	1.9	1.9 U	1.9	3.7	1.9	1.9 U	1.9
Barium	2000	116	0.80	54.3	1.7	49.3	1.7	51.8	0.80	39.7	0.80
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.33	0.30
Calcium		24900	8.4	15300	10.4	15100	10.4	14800	8.4	14500	8.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		13.2	2.3	7.5	3.0	4.7	3.0	6.4	2.3	4.4	2.3
Chromium	100	4.7 U	4.7	27.1	2.9	2.9 U	2.9	29.2	4.7	4.7 U	4.7
Copper	1000	8.1	4.0	1.9 U	1.9	1.9 U	1.9	4.4	4.0	4.0 U	4.0
Iron	300	93.3	2.5	5760	6.4	8.4	6.4	6610	2.5	28.6	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		11800	67.9	12900	685	12100	685	12900	67.9	11600	67.9
Magnesium		13500	34.3	3890	18.3	3380	18.3	4270	34.3	3580	34.3
Manganese	50	114	0.90	44.0	1.8	36.3	1.8	48.7	0.90	39.5	0.90
Sodium	50000	73800	19.1	17000	30.5	17100	30.5	19200	19.1	19000	19.1
Nickel	100	15.0	4.2	11.5	10.8	17.2	10.8	6.0	4.2	7.2	4.2
Lead	10	2.2	1.2	2.7	1.6	1.6 U	1.6	3.6	1.2	1.5	1.2
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.1 U	2.1	23.4	2.3	2.3 U	2.3	24.4	2.1	2.1 U	2.1
Zinc	5000	32.5	1.9	21.9	3.8	13.1	3.8	27.8	1.9	14.4	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW29-A01		CW01-MW29-A01 SOL		CW01-MW29-A02		CW01-MW29-A02 SOL		CW01-MW29-E01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total	
Batch#		9502G358		9502G358		9502G739		9502G739		9502G358	
Prep#		95GI454		95GI454		95GI508		95GI508		95GI454	
RFW#		007		008		010		011		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		3/14/95		3/14/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
		Result		Result		Result		Result		Result	
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	1980	24.0	118	24.0	2760	16.8	143	16.8	24.0 U	24.0
Arsenic	8	2.3	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	46.3	1.7	37.6	1.7	55.3	0.80	46.0	0.80	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		25400	10.4	25000	10.4	31300	8.4	31400	8.4	113	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		4.4	3.0	3.6	3.0	5.2	2.3	4.1	2.3	3.0 U	3.0
Chromium	100	17.5	2.9	2.9 U	2.9	21.9	4.7	4.7 U	4.7	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9
Iron	300	3810	6.4	134	6.4	5300	2.5	238	2.5	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10700	685	9660	685	11300	67.9	11000	67.9	685 U	685
Magnesium		4940	18.3	4520	18.3	6100	34.3	5890	34.3	18.3 U	18.3
Manganese	50	65.8	1.8	60.5	1.8	75.3	0.90	70.3	0.90	1.8 U	1.8
Sodium	50000	28000	30.5	27600	30.5	30800	19.1	33500	19.1	321	30.5
Nickel	100	15.4	10.8	10.8 U	10.8	4.8	4.2	5.8	4.2	10.8 U	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	2.3	1.2	1.2	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		14.5	2.3	2.3 U	2.3	16.7	2.1	2.1 U	2.1	2.3 U	2.3
Zinc	5000	21.4	3.8	15.8	3.8	23.8	1.9	16.3	1.9	3.8 U	3.8
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW2		CW2		CW2		CW2		CW2	
Sample		CW01-MW29-E01 SOL		CW02-MW30-A01		CW02-MW30-A01 SOL		CW02-MW30-A02		CW02-MW30-A02 SOL		CW02-MW31-A01	
Sample Type		Field Rinsate - Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G358		9502G358		9502G358		9502G739		9502G739		9502G358	
Prep#		95GI454		95GI454		95GI454		95GI508		95GI508		95GI454	
RFW#		011		012		013		012		013		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		2/21/95		3/14/95		3/14/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	24.0 U	24.0	127	24.0	24.0 U	24.0	131	16.8	22.2	16.8	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	1.7 U	1.7	227	1.7	219	1.7	240	0.80	235	0.80	170	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		72.3	10.4	61200	10.4	59100	10.4	66000	8.4	66000	8.4	37100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	7.6	4.0	8.2	4.0	1.9 U	1.9
Iron	300	6.4 U	6.4	42800	6.4	40500	6.4	48700	2.5	47500	2.5	34600	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		685 U	685	9460	685	9590	685	10500	67.9	10600	67.9	8270	685
Magnesium		18.3 U	18.3	6770	18.3	6560	18.3	7320	34.3	7300	34.3	4500	18.3
Manganese	50	1.8 U	1.8	352	1.8	340	1.8	378	0.90	375	0.90	212	1.8
Sodium	50000	137	30.5	18000	30.5	17600	30.5	16200	19.1	16200	19.1	9650	30.5
Nickel	100	12.9	10.8	16.7	10.8	21.1	10.8	4.6	4.2	4.2 U	4.2	26.0	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.8	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	12.7	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.3 U	2.3	3.2	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3
Zinc	5000	3.8 U	3.8	6.6	3.8	5.1	3.8	4.8	1.9	6.1	1.9	5.6	3.8
Cyanide	200												
Method:TAL Metals, Cyanide													

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW31-A01 SOL		CW02-MW31-A02		CW02-MW31-A02 SOL		CW02-MW32-A01		CW02-MW32-A01 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G358		9502G739		9502G739		9502G358		9502G358	
Prep#		95GI454		95GI508		95GI508		95GI454		95GI454	
RFW#		015		014		015		016		017	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		3/14/95		2/21/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	35.3	16.8	26.1	16.8	530	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	169	1.7	191	0.80	183	0.80	216	1.7	187	1.7
Beryllium	20	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		37600	10.4	40400	8.4	39500	8.4	45800	10.4	43700	10.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	4.3	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	33300	6.4	38100	2.5	34200	2.5	47700	6.4	38300	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8210	685	9150	67.9	8930	67.9	9480	685	9210	685
Magnesium		4540	18.3	5050	34.3	4960	34.3	5560	18.3	5230	18.3
Manganese	50	214	1.8	233	0.90	228	0.90	266	1.8	250	1.8
Sodium	50000	9790	30.5	11000	19.1	10900	19.1	11500	30.5	11000	30.5
Nickel	100	26.4	10.8	4.2 U	4.2	14.7	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.2 U	1.2	1.7	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	15.8	10.9	20.7 U	20.7	22.3	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	3.9	2.3	2.3 U	2.3
Zinc	5000	3.8 U	3.8	2.2	1.9	5.4	1.9	14.2	3.8	4.1	3.8
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW32-A02		CW02-MW32-A02 SOL		CW02-MW33-A01		CW02-MW33-A01 SOL		CW02-MW33-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9502G739		9502G739		9502G358		9502G358		9502G739	
Prep#		95GI508		95GI508		95GI454		95GI454		95GI508	
RFW#		016		017		018		019		018	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	365	16.8	16.8	16.8	651	24.0	24.0 U	24.0	701	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	3.0	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	206	0.80	189	0.80	235	1.7	184	1.7	233	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30
Calcium		46700	8.4	47100	8.4	49300	10.4	48600	10.4	53200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		2.3 U	2.3	2.5	2.3	3.0 U	3.0	3.0 U	3.0	5.8	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	4.3	2.9	2.9 U	2.9	4.7 U	4.7
Copper	1000	4.0	4.0	4.4	4.0	8.4	1.9	1.9 U	1.9	15.4	4.0
Iron	300	50200	2.5	42700	2.5	54900	6.4	39700	6.4	54000	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9680	67.9	9720	67.9	8030	685	8130	685	8880	67.9
Magnesium		5630	34.3	5670	34.3	5890	18.3	5710	18.3	6310	34.3
Manganese	50	271	0.90	270	0.90	252	1.8	248	1.8	294	0.90
Sodium	50000	12100	19.1	12300	19.1	12800	30.5	12600	30.5	15900	19.1
Nickel	100	23.5	4.2	6.1	4.2	10.8 U	10.8	10.8 U	10.8	5.4	4.2
Lead	10	1.4	1.2	1.2	1.2	1.6 U	1.6	1.6 U	1.6	6.6	1.2
Antimony	20	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.7	2.1	2.1 U	2.1	4.5	2.3	2.3 U	2.3	5.8	2.1
Zinc	5000	13.5	1.9	4.5	1.9	14.0	3.8	6.1	3.8	37.2	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW9		CW9		CW9		CW9	
Sample		CW02-MW33-A02 SOL		CW09-MW35-A01		CW09-MW35-A01 SOL		CW09-MW35-A02		CW09-MW35-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G739		9502G300		9502G300		9503G723		9503G723	
Prep#		95GI508		95GI450		95GI450		95GI503		95GI503	
RFW#		019		003		004		002		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/20/95		2/20/95		3/13/95		3/13/95	
Analysis Date		3/8/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	25.6	16.8	242	16.8	85.2	16.8	210	16.8	91.0	16.8
Arsenic	8	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3
Barium	2000	192	0.80	40.5	0.80	36.8	0.80	34.0	0.80	35.4	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.35	0.30	0.33	0.30
Calcium		51800	8.4	21800	8.4	20700	8.4	25000	8.4	25800	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.0	2.3	4.9	2.3	4.2	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	7.7	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	6.5	4.0
Iron	300	38900	2.5	123	2.5	17.1	2.5	85.4	2.5	30.1	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8700	67.9	2110	67.9	1990	67.9	1960	67.9	2180	67.9
Magnesium		6140	34.3	5770	34.3	5360	34.3	5980	34.3	6200	34.3
Manganese	50	284	0.90	43.9	0.90	40.2	0.90	36.3	0.90	37.9	0.90
Sodium	50000	15900	19.1	7300	19.1	6760	19.1	6660	19.1	7080	19.1
Nickel	100	4.3	4.2	11.3	4.2	9.6	4.2	4.2 U	4.2	9.3	4.2
Lead	10	5.6	1.2	1.6 U	1.6	1.6 U	1.6	1.1 U	1.1	1.1 U	1.1
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Zinc	5000	25.4	1.9	60.1	1.9	55.0	1.9	51.6	1.9	58.4	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW9		CW9		CW9		CW9		CW9	
Sample		CW09-MW35-E01		CW09-MW35-E01 SOL		CW09-MW36-A01		CW09-MW36-A01 SOL		CW09-MW36-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9502G300		9502G300		9502G300		9502G300		9503G723	
Prep#		95GI450		95GI450		95GI450		95GI450		95GI503	
RFW#		007		008		005		006		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		2/20/95		2/20/95		2/20/95		3/13/95	
Analysis Date		3/6/95		3/6/95		3/6/95		3/6/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	231	16.8	16.8 U	16.8	460	16.8	39.5	16.8	645	16.8
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3
Barium	2000	40.8	0.80	0.80 U	0.80	33.2	0.80	28.3	0.80	29.4	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		21100	8.4	191	8.4	37400	8.4	37600	8.4	32700	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.0	2.3	2.3 U	2.3	3.2	2.3	4.2	2.3	2.5	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	6.4	4.7	6.5	4.7	5.0	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	85.8	2.5	3.8	2.5	1120	2.5	44.1	2.5	1420	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2090	67.9	82.5	67.9	4180	67.9	4110	67.9	3820	67.9
Magnesium		5580	34.3	34.3 U	34.3	8200	34.3	8170	34.3	7470	34.3
Manganese	50	43.9	0.90	0.90 U	0.90	239	0.90	240	0.90	195	0.90
Sodium	50000	7230	19.1	654	19.1	5990	19.1	6120	19.1	5810	19.1
Nickel	100	10.8	4.2	4.2 U	4.2	6.4	4.2	8.3	4.2	4.9	4.2
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	4.1	1.1
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.8	2.1	3.5	2.1	2.1 U	2.1	4.2	2.1
Zinc	5000	60.7	1.9	2.6	1.9	25.7	1.9	24.9	1.9	28.3	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW9		B6		B6		B6		B6		B7	
Sample		CW09-MW36-A02 SOL		B6-MW06B-A01		B6-MW06B-A01 SOL		B6-MW06B-A02		B6-MW06B-A02 SOL		B7-MW07B-A01	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9503G723		9502G198		9502G198		9503G641		9503G641		9502G198	
Prep#		95GI503		95GI427		95GI427		95GI479		95GI479		95GI427	
RFW#		005		003		004		001		002		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95	
Analysis Date		3/15/95		2/23/95		2/28/95		3/14/95		3/10/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	36.2	16.8	7500	24.0	152	24.0	8210	24.0	245	24.0	1360	24.0
Arsenic	8	1.3 U	1.3	14.6	1.9	1.9 U	1.9	25.1	1.6	2.3	1.6	1.9 U	1.9
Barium	2000	22.6	0.80	170	1.7	50.8	1.7	192	1.7	34.9	1.7	71.0	1.7
Beryllium	20	0.35	0.30	2.3	0.90	0.90 U	0.90	2.8	0.90	0.94	0.90	0.90 U	0.90
Calcium		31700	8.4	5270	10.4	5050	10.4	4500	10.4	4200	10.4	7610	10.4
Cadmium	4	2.9 U	2.9	3.7	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		2.6	2.3	12.5	3.0	5.2	3.0	10.7	3.0	8.7	3.0	30.6	3.0
Chromium	100	4.7 U	4.7	49.6	2.9	2.9 U	2.9	48.3	2.9	2.9 U	2.9	9.7	2.9
Copper	1000	4.0 U	4.0	6.8	1.9	1.9 U	1.9	9.8	1.9	4.0	1.9	1.9 U	1.9
Iron	300	29.3	2.5	15600	6.4	1800	6.4	19600	6.4	1010	6.4	2150	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3600	67.9	4030	685	2450	685	4630	685	2060	685	2140	685
Magnesium		7080	34.3	4770	18.3	2940	18.3	4430	18.3	2540	18.3	6670	18.3
Manganese	50	186	0.90	59.2	1.8	36.3	1.8	51.5	1.8	27.3	1.8	232	1.8
Sodium	50000	5640	19.1	16600	30.5	16600	30.5	17000	30.5	16900	30.5	36400	30.5
Nickel	100	5.0	4.2	48.3	10.8	23.3	10.8	35.7	10.8	22.8	10.8	12.5	10.8
Lead	10	1.1 U	1.1	2.8	1.6	4.1	1.6	3.9	1.0	1.0 U	1.0	3.3	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	3.8	1.5	1.5 U	1.5	3.7	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.1 U	2.1	27.0	2.3	2.3 U	2.3	28.9	2.3	2.3 U	2.3	9.1	2.3
Zinc	5000	25.4	1.9	133	3.8	70.0	3.8	126	3.8	66.3	3.8	23.5	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Method:TAL Metals, Cyanide													

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		B7		B7		B7		B8		B8		B8	
Sample		B7-MW07B-A01 SOL		B7-MW07B-A02		B7-MW07B-A02 SOL		B8-MW08B-A01		B8-MW08B-A01 SOL		B8-MW08B-A02	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G198		9503G617		9503G617		9502G198		9502G198		9503G641	
Prep#		95GI427		95GI475		95GI475		95GI427		95GI427		95GI479	
RFW#		006		003		004		007		008		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/7/95		3/7/95		2/15/95		2/15/95		3/8/95	
Analysis Date		2/28/95		3/13/95		3/13/95		2/23/95		2/28/95		3/14/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	327	24.0	993	16.8	289	16.8	340	24.0	27.9	24.0	627	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.6 U	1.6
Barium	2000	67.0	1.7	64.9	0.80	62.5	0.80	45.3	1.7	45.3	1.7	45.7	1.7
Beryllium	20	0.90 U	0.90	0.45	0.30	0.57	0.30	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		7420	10.4	7420	8.4	7460	8.4	1890	10.4	1960	10.4	1870	10.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		30.6	3.0	29.3	2.3	29.7	2.3	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	5.7	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9	5.7	2.9
Copper	1000	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	2.9	1.9	3.8	1.9	1.9 U	1.9
Iron	300	6.4 U	6.4	1430	2.5	10.9	2.5	702	6.4	6.4 U	6.4	1240	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		1280	685	1400	67.9	1130	67.9	1740	685	2230	685	2120	685
Magnesium		6260	18.3	6160	34.3	6080	34.3	3260	18.3	3310	18.3	3330	18.3
Manganese	50	223	1.8	205	0.90	203	0.90	16.6	1.8	16.6	1.8	15.8	1.8
Sodium	50000	35500	30.5	34100	19.1	34100	19.1	12000	30.5	12300	30.5	12100	30.5
Nickel	100	10.8 U	10.8	4.2 U	4.2	6.5	4.2	10.8 U	10.8	14.2	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.0 U	1.0	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.0 U	1.0
Antimony	20	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.3 U	2.3	4.3	2.1	2.1 U	2.1	2.3 U	2.3	2.4	2.3	4.4	2.3
Zinc	5000	24.7	3.8	22.3	1.9	22.0	1.9	14.7	3.8	14.7	3.8	16.0	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Method:TAL Metals, Cyanide													

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		B8		B8		B9		B9		B9		B9	
Sample		B8-MW08B-A02 SOL		B8-MW10B-A02 SOL		B9-MW09B-A01		B9-MW09B-A01 SOL		B9-MW09B-A02		B9-MW09B-A02 SOL	
Sample Type		Soluble		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G641		9503G641		9502G198		9502G198		9503G617		9503G617	
Prep#		95GI479		95GI479		95GCN040		95GI427		95GI475		95GI475	
RFW#		004		006		001		002		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		3/8/95		2/15/95		2/15/95		3/7/95		3/7/95	
Analysis Date		3/10/95		3/10/95		2/23/95		2/28/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	29.1	24.0	50.5	24.0	1290	24.0	400	24.0	3880	16.8	399	16.8
Arsenic	8	1.6 U	1.6	2.3	1.6	2.3	1.9	1.9 U	1.9	13.2	1.9	1.9 U	1.9
Barium	2000	35.7	1.7	14.9	1.7	82.8	1.7	71.2	1.7	92.3	0.80	50.0	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.56	0.30	0.45	0.30
Calcium		2010	10.4	3490	10.4	8600	10.4	8700	10.4	7810	8.4	8030	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	4.8	3.0	5.1	3.0	6.3	2.3	4.8	2.3
Chromium	100	2.9 U	2.9	2.9 U	2.9	8.1	2.9	2.9 U	2.9	31.8	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	4.8	1.9	1.9	1.9	3.0	1.9	4.0 U	4.0	4.0 U	4.0
Iron	300	25.5	6.4	28.2	6.4	2650	6.4	13.6	6.4	12800	2.5	33.3	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		1300	685	1520	685	2400	685	1890	685	2940	67.9	1620	67.9
Magnesium		3120	18.3	2090	18.3	6460	18.3	6160	18.3	7160	34.3	6380	34.3
Manganese	50	15.3	1.8	23.3	1.8	58.2	1.8	54.1	1.8	62.2	0.90	47.4	0.90
Sodium	50000	12000	30.5	14900	30.5	3330	30.5	3440	30.5	3390	19.1	3530	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	23.8	10.8	22.3	10.8	18.4	4.2	15.0	4.2
Lead	10	1.0 U	1.0	1.0 U	1.0	2.0	1.6	1.6 U	1.6	3.6	1.2	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	4.4	2.3	2.3 U	2.3	13.2	2.1	2.1 U	2.1
Zinc	5000	18.6	3.8	24.1	3.8	54.8	3.8	53.1	3.8	75.8	1.9	61.3	1.9
Cyanide	200					10 U	10			10 U	10		
Method:TAL Metals, Cyanide													

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		B10		B10		B10		B10		B10	
Sample		B10-MW10B-A01		B10-MW10B-A01 SOL		B10-MW10B-A02		B10-MW10B-A02 SOL		B10-MW10B-E01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total	
Batch#		9502G198		9502G198		9503G641		9503G641		9502G198	
Prep#		95GI427		95GI427		95GI479		95GI479		95GI427	
RFW#		009		010		005		006		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95	
Analysis Date		2/23/95		2/28/95		3/14/95		3/14/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	1690	24.0	71.1	24.0	1250	24.0	50.5	24.0	24.0 U	24.0
Arsenic	8	3.5	1.9	1.9 U	1.9	4.0	1.6	2.3	1.6	1.9 U	1.9
Barium	2000	77.5	1.7	20.3	1.7	63.2	1.7	14.9	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		3980	10.4	3690	10.4	3500	10.4	3490	10.4	33.6	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.5	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	12.1	2.9	2.9 U	2.9	6.7	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	4.8	1.9	1.9 U	1.9
Iron	300	3070	6.4	92.3	6.4	2220	6.4	28.2	6.4	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2060	685	685 U	685	1870	685	1520	685	685 U	685
Magnesium		2790	18.3	2340	18.3	2450	18.3	2090	18.3	18.3 U	18.3
Manganese	50	34.8	1.8	30.4	1.8	27.6	1.8	23.3	1.8	2.7	1.8
Sodium	50000	16400	30.5	16200	30.5	15600	30.5	14900	30.5	95.0	30.5
Nickel	100	20.4	10.8	17.3	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	2.2	1.6	7.3	1.6	1.0 U	1.0	1.0 U	1.0	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		8.5	2.3	2.3 U	2.3	2.8	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	35.9	3.8	32.4	3.8	30.8	3.8	24.1	3.8	3.8 U	3.8
Cyanide	200	10 U	10			10 U	10	10 U	10		
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		B10		B10		B10	
Sample		B10-MW10B-E01 SOL		B10-MW10B-E02		B10-MW10B-E02 SOL	
Sample Type		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble	
Batch#		9502G198		9503G641		9503G641	
Prep#		95GI427		95GI479		95GI479	
RFW#		013		008		009	
Dilution Factor		1.00		1.00		1.00	
Matrix		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		3/8/95	
Analysis Date		2/28/95		3/14/95		3/10/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	24.0 U	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.6 U	1.6	1.6 U	1.6
Barium	2000	1.7 U	1.7	1.7 U	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		111	10.4	141	10.4	130	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Iron	300	6.4 U	6.4	9.3	6.4	9.8	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		685 U	685	685 U	685	685 U	685
Magnesium		18.3 U	18.3	24.0	18.3	18.3 U	18.3
Manganese	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Sodium	50000	70.4	30.5	170	30.5	231	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.0 U	1.0	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	3.8 U	3.8	6.5	3.8	6.4	3.8
Cyanide	200			10 U	10		
Method:TAL Metals, Cyanide							

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type						Field Rinsate Blank							
Batch#		9503G358		9503G739		9503G739		9503G358		9503G739		9503G358	
Prep#		95GP0154		95GP0251		95GP0251		95GP0154		95GP0251		95GP0154	
RFW#		001		003		006		003		001		005	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date		3/15/95		3/12/95		3/12/95		3/15/95		3/12/95		3/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
beta-BHC	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
delta-BHC		0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
gamma-BHC (Lindane)	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Heptachlor	0.4	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Aldrin	0.04	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Heptachlor epoxide	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Endosulfan I	0.4	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Dieldrin	0.03	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDE	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endrin	2	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endosulfan II	0.4	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDD	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endosulfan sulfate	0.4	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDT	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Methoxychlor	40	0.48 U	0.48	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.56 U	0.56	0.47 U	0.47
Endrin ketone		0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endrin aldehyde		0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
alpha-Chlordane		0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
gamma-Chlordane	0.5	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Toxaphene	3	4.8 U	4.8	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	5.6 U	5.6	4.7 U	4.7
Aroclor-1016	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1221	2	1.9 U	1.9	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.2 U	2.2	1.9 U	1.9
Aroclor-1232	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1242	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1248	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1254	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1260	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-MW28A02		CW01-MW29-A01		CW01-MW29-E01		CW01-MW29A02		CW02-MW30-A01		CW02-MW30-A02	
Sample Type						Field Rinsate Blank							
Batch#		9503G739		9503G358		9503G358		9503G739		9503G358		9503G739	
Prep#		95GP0251		95GP0154		95GP0154		95GP0251		95GP0154		95GP0251	
RFW#		008		007		010		010		012		012	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/21/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date		3/12/95		3/16/95		3/16/95		3/12/95		3/16/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.47 U	0.47	0.53 U	0.53	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	4.7 U	4.7	5.3 U	5.3	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW2		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type													
Batch#		9503G358		9503G739		9503G358		9503G739		9503G358		9503G739	
Prep#		95GP0154		95GP0251		95GP0154		95GP0251		95GP0154		95GP0251	
RFW#		014		014		016		016		018		018	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date		3/16/95		3/12/95		3/16/95		3/12/95		3/16/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
beta-BHC	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
delta-BHC		0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
gamma-BHC (Lindane)	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Heptachlor	0.4	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Aldrin	0.04	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Heptachlor epoxide	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Endosulfan I	0.4	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Dieldrin	0.03	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDE	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endrin	2	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endosulfan II	0.4	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDD	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endosulfan sulfate	0.4	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDT	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Methoxychlor	40	0.70 U	0.70	0.52 U	0.52	0.54 U	0.54	0.52 U	0.52	0.62 U	0.62	0.053 U	0.053
Endrin ketone		0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endrin aldehyde		0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
alpha-Chlordane		0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
gamma-Chlordane	0.5	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Toxaphene	3	7.0 U	7.0	5.2 U	5.2	5.4 U	5.4	5.2 U	5.2	6.2 U	6.2	5.3 U	5.3
Aroclor-1016	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1221	2	2.8 U	2.8	2.1 U	2.1	2.2 U	2.2	2.1 U	2.1	2.5 U	2.5	2.1 U	2.1
Aroclor-1232	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1242	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1248	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1254	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1260	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW6		CW6		CW6		CW6		CW6		CW6	
Sample		CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW06-MW35-A01	
Sample Type						Field Rinsate Blank							
Batch#		9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#		95GP0510		95GP0580		95GP0580		95GP0154		95GP0247		95GP0154	
RFW#		002		002		003		001		001		003	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/10/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date		5/19/95		6/1/95		6/1/95		3/15/95		3/29/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
beta-BHC	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
delta-BHC		0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Heptachlor	0.4	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Aldrin	0.04	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Heptachlor epoxide	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Endosulfan I	0.4	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Dieldrin	0.03	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDE	0.1	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endrin	2	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endosulfan II	0.4	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDD	0.1	0.098 J	0.11	0.074 J	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endosulfan sulfate	0.4	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDT	0.1	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Methoxychlor	40	0.54 U	0.54	0.46 U	0.46	0.53 U	0.53	0.47 U	0.47	0.53 U	0.53	0.48 U	0.48
Endrin ketone		0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endrin aldehyde		0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
alpha-Chlordane		0.054	0.054	0.055	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
gamma-Chlordane	0.5	0.033 JP	0.054	0.037 J	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Toxaphene	3	5.4 U	4.7	4.6 U	4.6	5.3 U	5.3	4.7 U	4.7	5.3 U	5.3	4.8 U	4.8
Aroclor-1016	2	1.1 U	1.1	0.92 U	0.92	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1221	2	2.2 U	2.2	1.8 U	1.8	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1242	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1248	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1254	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1260	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW9		CW9		CW6		CW9		B6		B6	
Sample		CW09-MW35-A02		CW09-MW35-E01		CW06-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type				Field Rinsate Blank									
Batch#		9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#		95GP0247		95GP0154		95GP0154		95GP0247		95GP0119		95GP0229	
RFW#		002		007		005		004		003		001	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date		3/29/95		3/15/95		3/15/95		3/29/95		3/4/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
beta-BHC	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
delta-BHC		0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
gamma-BHC (Lindane)	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Heptachlor	0.4	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Aldrin	0.04	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Heptachlor epoxide	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Endosulfan I	0.4	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Methoxychlor	40	0.55 U	0.55	0.50 U	0.50	0.48 U	0.48	0.53 U	0.53	0.48 U	0.48	0.50 U	0.50
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
alpha-Chlordane		0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
gamma-Chlordane	0.5	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Toxaphene	3	5.5 U	5.5	5.0 U	5.0	4.8 U	4.8	5.3 U	5.3	4.8 U	4.8	5.0 U	5.0
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1221	2	2.2 U	2.2	2.0 U	2.0	1.9 U	1.9	2.1 U	2.1	1.9 U	1.9	2.0 U	2.0
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B7		B7		B8		B8		B9		B9	
Sample		B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type													
Batch#		9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#		95GP0119		95GP0219		95GP0119		95GP0229		95GP0119		95GP0219	
RFW#		005		003		007		003		001		001	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date		3/4/95		3/17/95		3/7/95		3/19/95		3/4/95		3/17/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
beta-BHC	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
delta-BHC		0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Heptachlor	0.4	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Aldrin	0.04	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Heptachlor epoxide	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Endosulfan I	0.4	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Dieldrin	0.03	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDE	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endrin	2	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endosulfan II	0.4	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDD	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endosulfan sulfate	0.4	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDT	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Methoxychlor	40	0.60 U	0.60	0.51 U	0.51	0.60 U	0.60	0.52 U	0.52	0.47 U	0.47	0.48 U	0.48
Endrin ketone		0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endrin aldehyde		0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
alpha-Chlordane		0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
gamma-Chlordane	0.5	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Toxaphene	3	6.0 U	6.0	5.1 U	5.1	6.0 U	6.0	5.2 U	5.2	4.7 U	4.7	4.8 U	4.8
Aroclor-1016	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1221	2	2.4 U	2.4	2.0 U	2.0	2.4 U	2.4	2.1 U	2.1	1.9 U	1.9	1.9 U	1.9
Aroclor-1232	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1242	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1248	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1254	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1260	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B10		B10		B10		B10	
Sample		B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type						Field Rinsate Blank		Field Rinsate Blank	
Batch#		9502G198		9503G641		9502G198		9503G641	
Prep#		95GP0119		95GP0229		95GP0119		95GP0229	
RFW#		009		005		012		008	
Sample Depth									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date		3/7/95		3/19/95		3/7/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
beta-BHC	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
delta-BHC		0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
gamma-BHC (Lindane)	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Heptachlor	0.4	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Aldrin	0.04	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Heptachlor epoxide	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Endosulfan I	0.4	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Dieldrin	0.03	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.51 U	0.51	0.61 U	0.61	0.52 U	0.52	0.55 U	0.55
Endrin ketone		0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
gamma-Chlordane	0.5	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Toxaphene	3	5.1 U	5.1	6.1 U	6.1	5.2 U	5.2	5.5 U	5.5
Aroclor-1016	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.0 U	2.0	2.4 U	2.4	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs									

CHARLES WOOD
TRANSFORMERS - PCBs

Geographical Location		Building 2000		Building 2000		Building 2000		Building 2000		Building 2018		Building 2018	
Sample		CW07-TR01-A01		CW07-TR02-A01		CW07-TR03-A01		CW07-TR04-A01		CW07-TR05-A01		CW07-TR06-A01	
Sample Type		Transformer		Transformer		Transformer		Transformer		Transformer		Transformer	
Batch#		9411G831		9411G831		9411G831		9411G831		9412G854		9412G854	
Prep#		94GP1024		94GP1024		94GP1024		94GP1024		94GP1024		94GP1024	
RFW#		001		002		003		004		017		018	
Sample Depth													
Dilution Factor		250		50.0		50.0		10.0		50.0		5.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/30/91		11/30/91	
Analysis Date		12/21/94		12/20/94		12/20/94		12/21/94		12/22/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		85.8	0.10	89.0	0.10	90.3	0.10	85.7	0.10	86.4	0.10	92.5	0.10
Aroclor-1016	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1221	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1232	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1242	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1248	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1254	0.055	46 U	46	8.8 U	8.8	8.7 U	8.8	1.8 U	1.8	9 U	9	0.84 U	0.84
Aroclor-1260	0.055	100		27		26		6.4		9 U	9	0.84 U	0.84
Method:TCL PCBs													

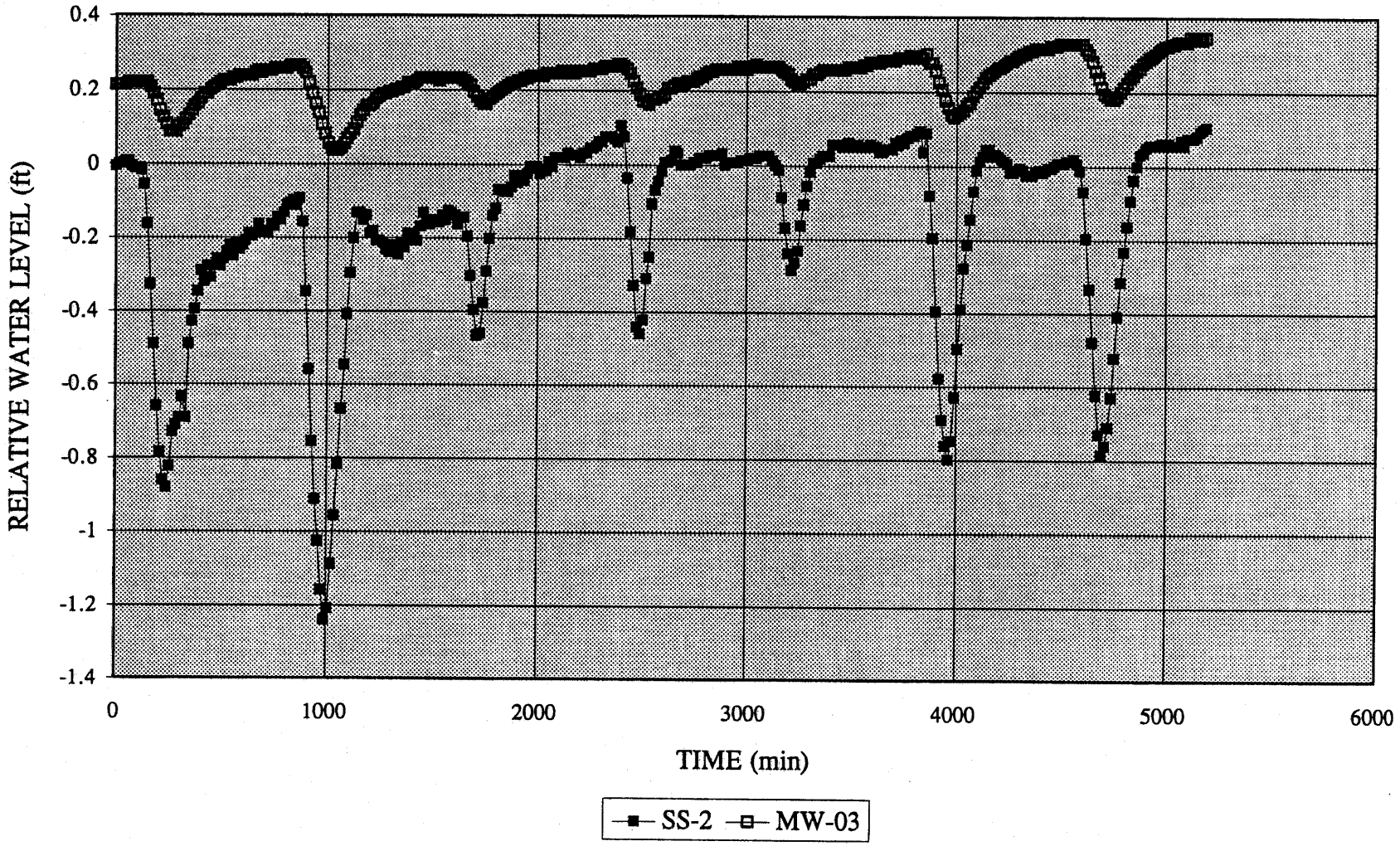
CHARLES WOOD
TRANSFORMERS - PCBs

Geographical Location		Building 2276		Building 2276	
Sample		CWAE-TR01-A01		CWAE-TR01-C01	
Sample Type		Transformer		Duplicate	
Batch#		9412G854		9412G854	
Prep#		94GP1024		94GTS467	
RFW#		015		016	
Sample Depth					
Dilution Factor		2.5		0.5	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94	
Analysis Date		12/22/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
% Solids		92.0	1.0	90.7	1.0
Aroclor-1016	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1221	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1232	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1242	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1248	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1254	0.055	0.43 U	0.43	0.088 U	0.088
Aroclor-1260	0.055	0.43 U	0.43	0.088 U	0.088
Method:TCL PCBs					

APPENDIX E

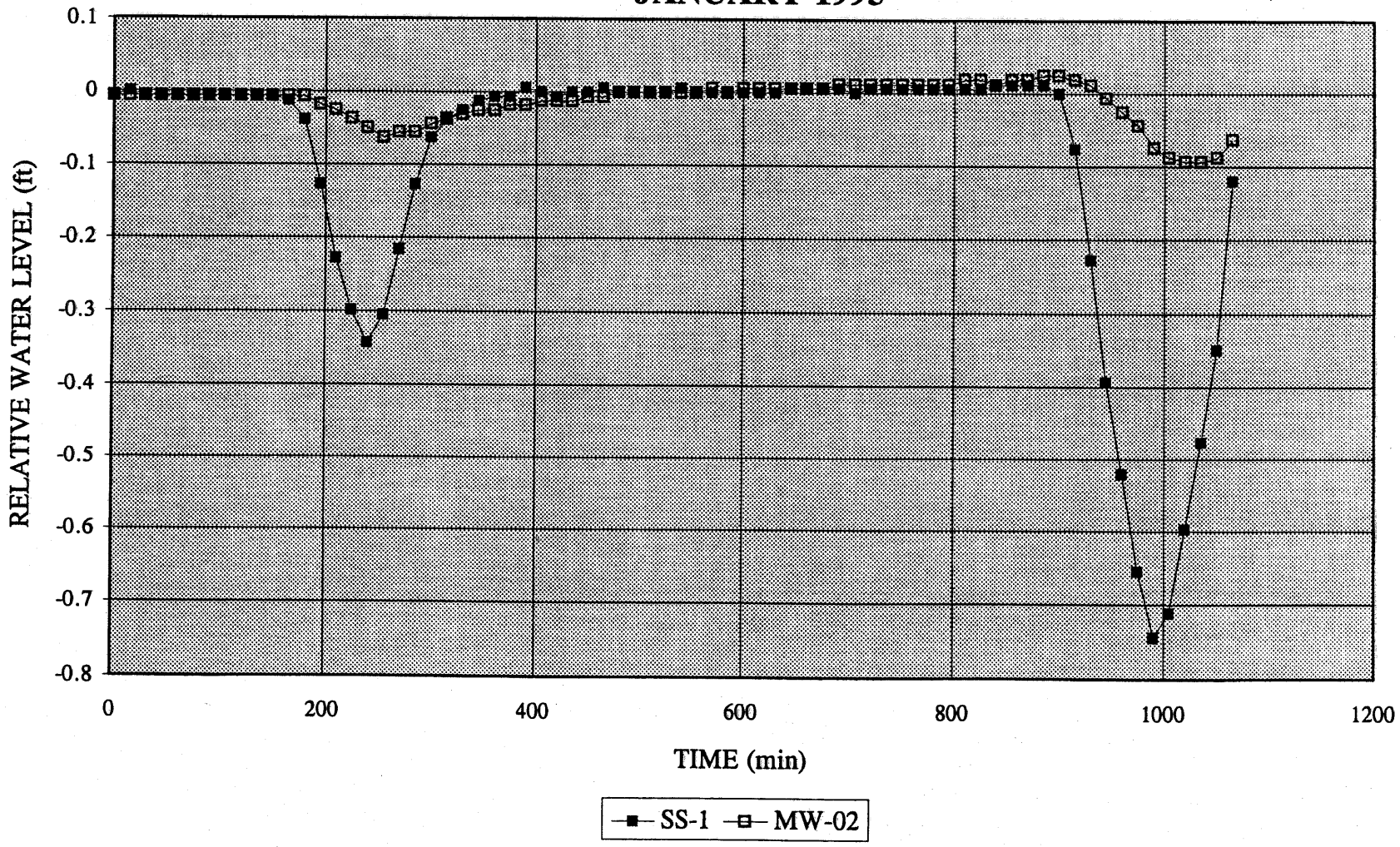
TIDAL MONITORING GRAPHS

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
JANUARY 1995



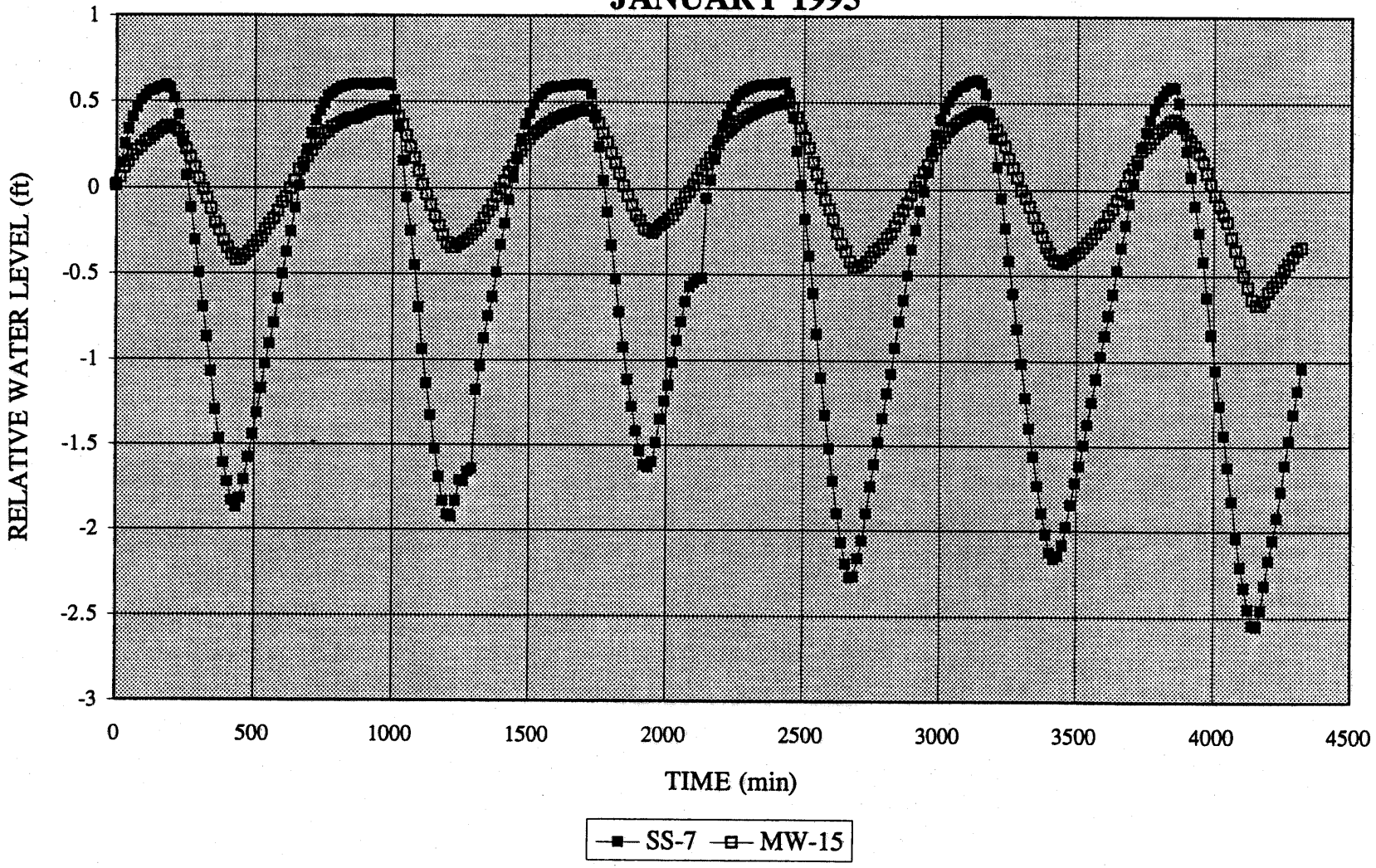
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
JANUARY 1995



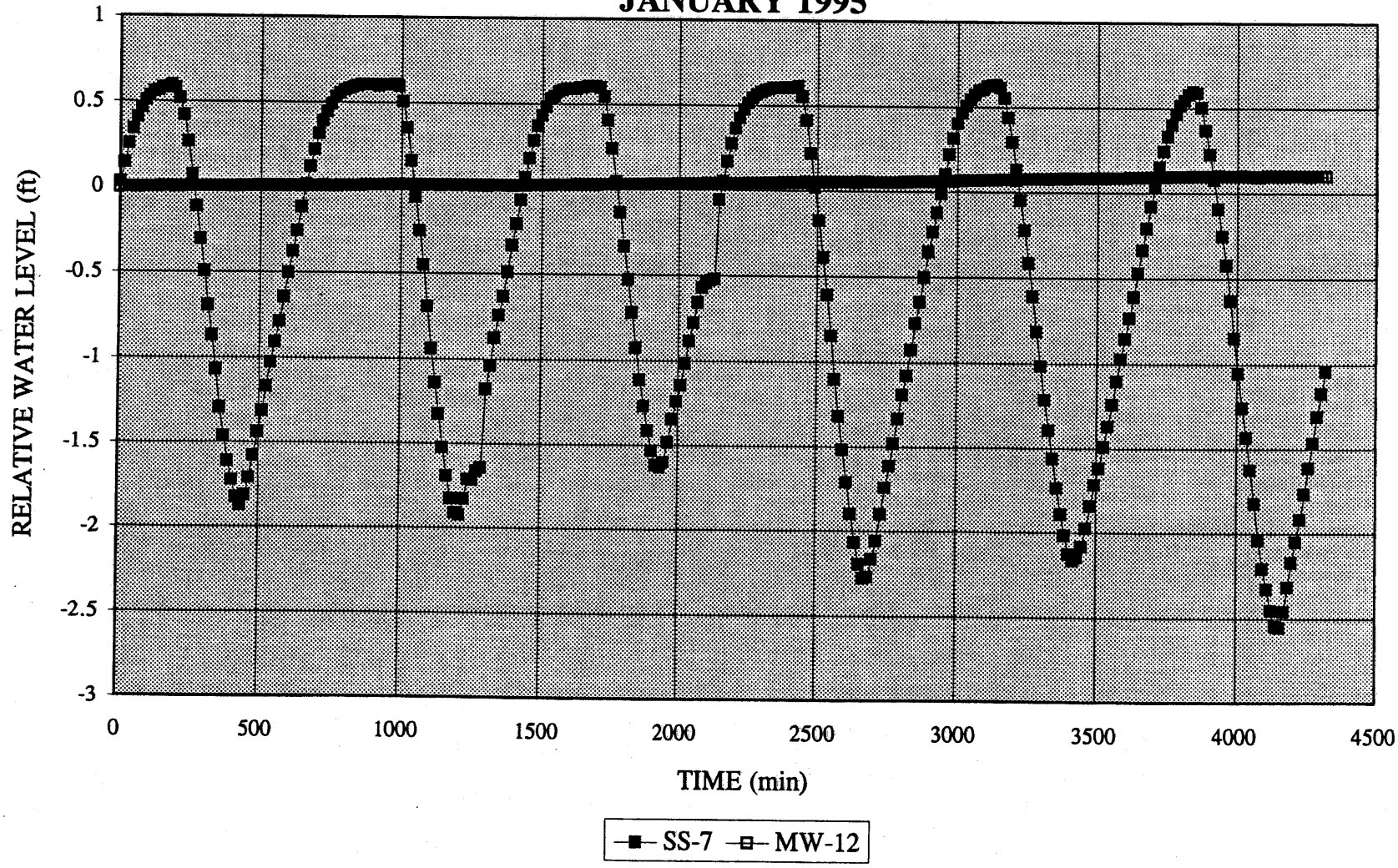
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
JANUARY 1995



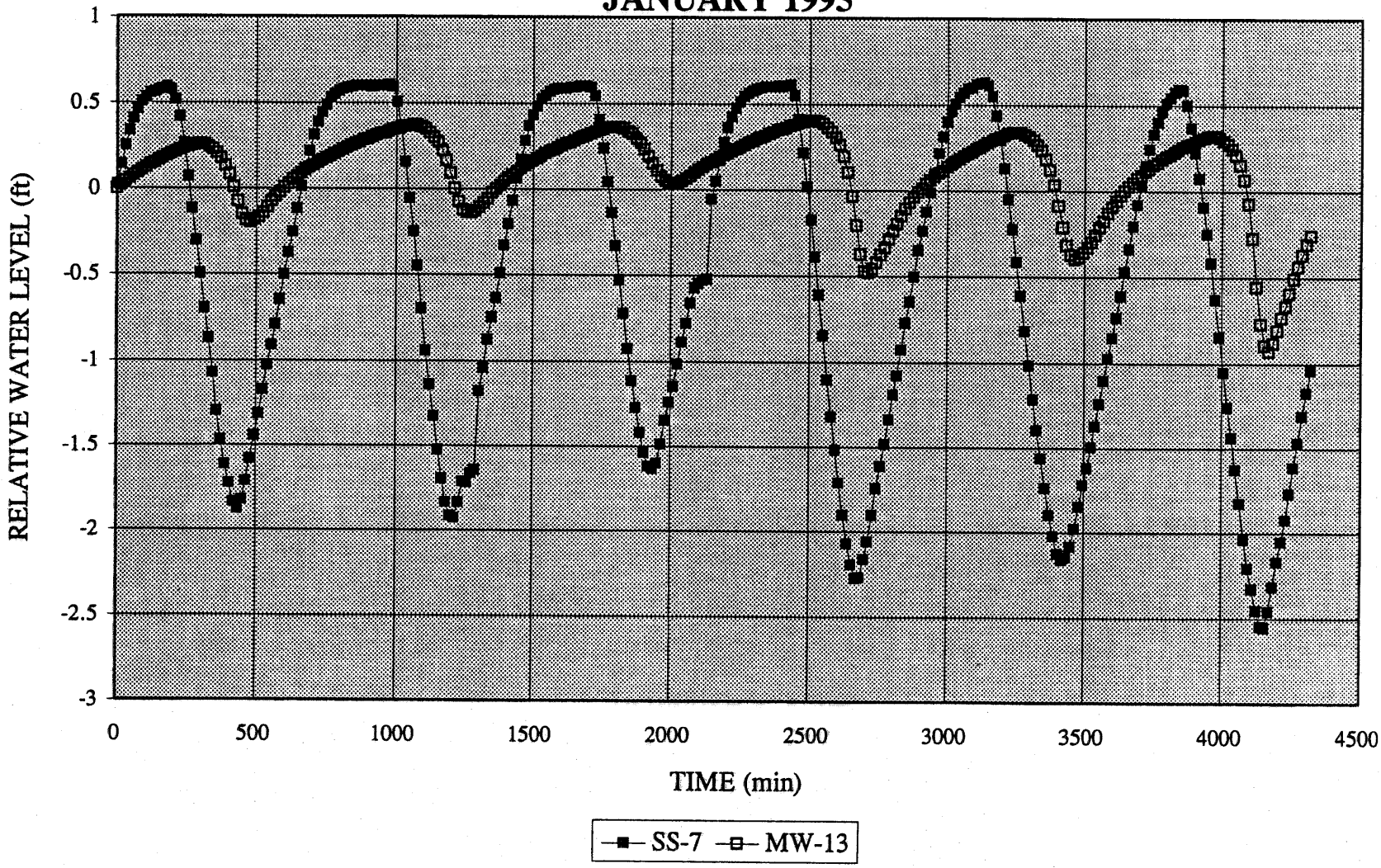
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
JANUARY 1995



(-) negative value shows rise in water level
(+) positive value shows fall in water level

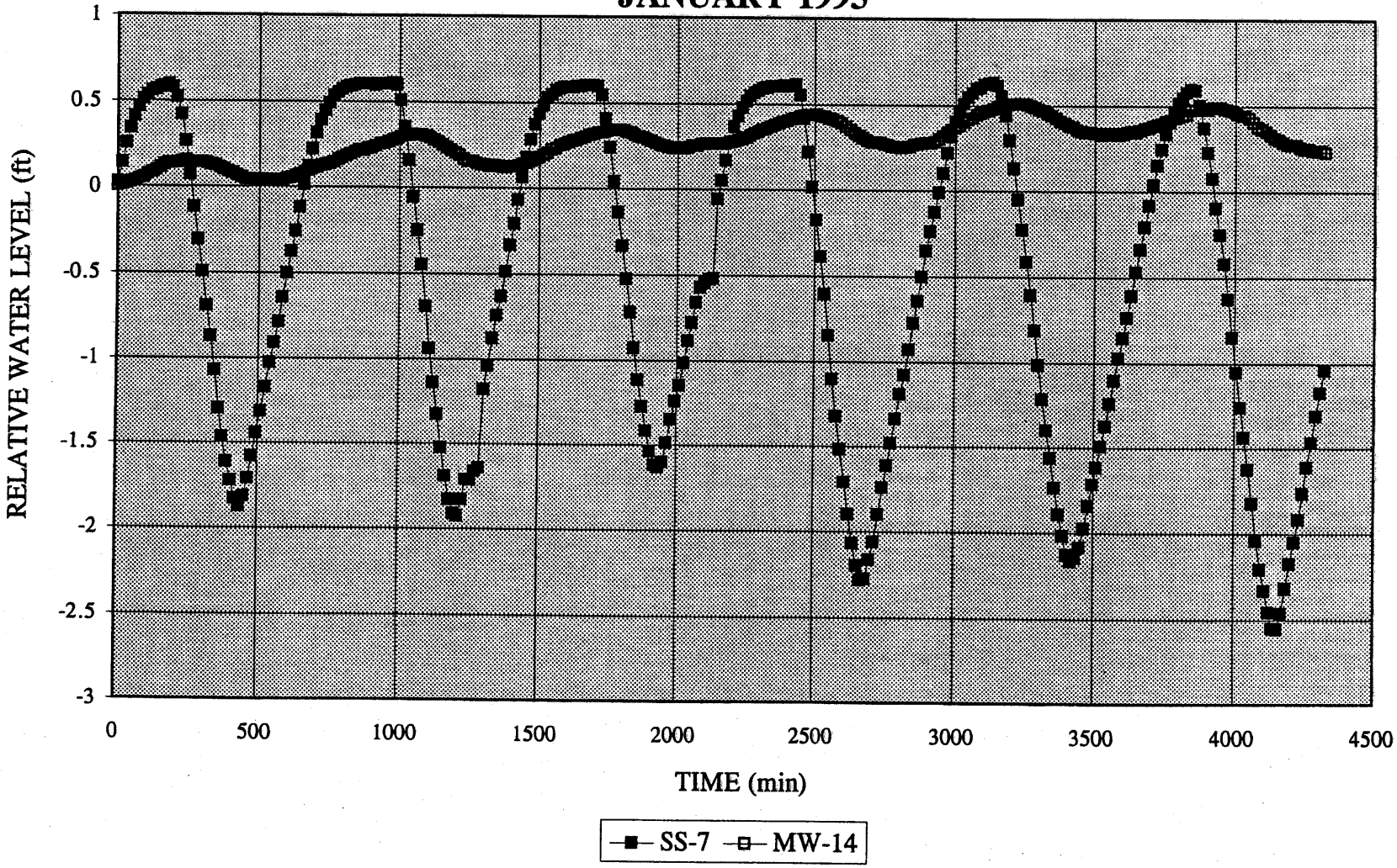
USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
JANUARY 1995



(-) negative value shows rise in water level

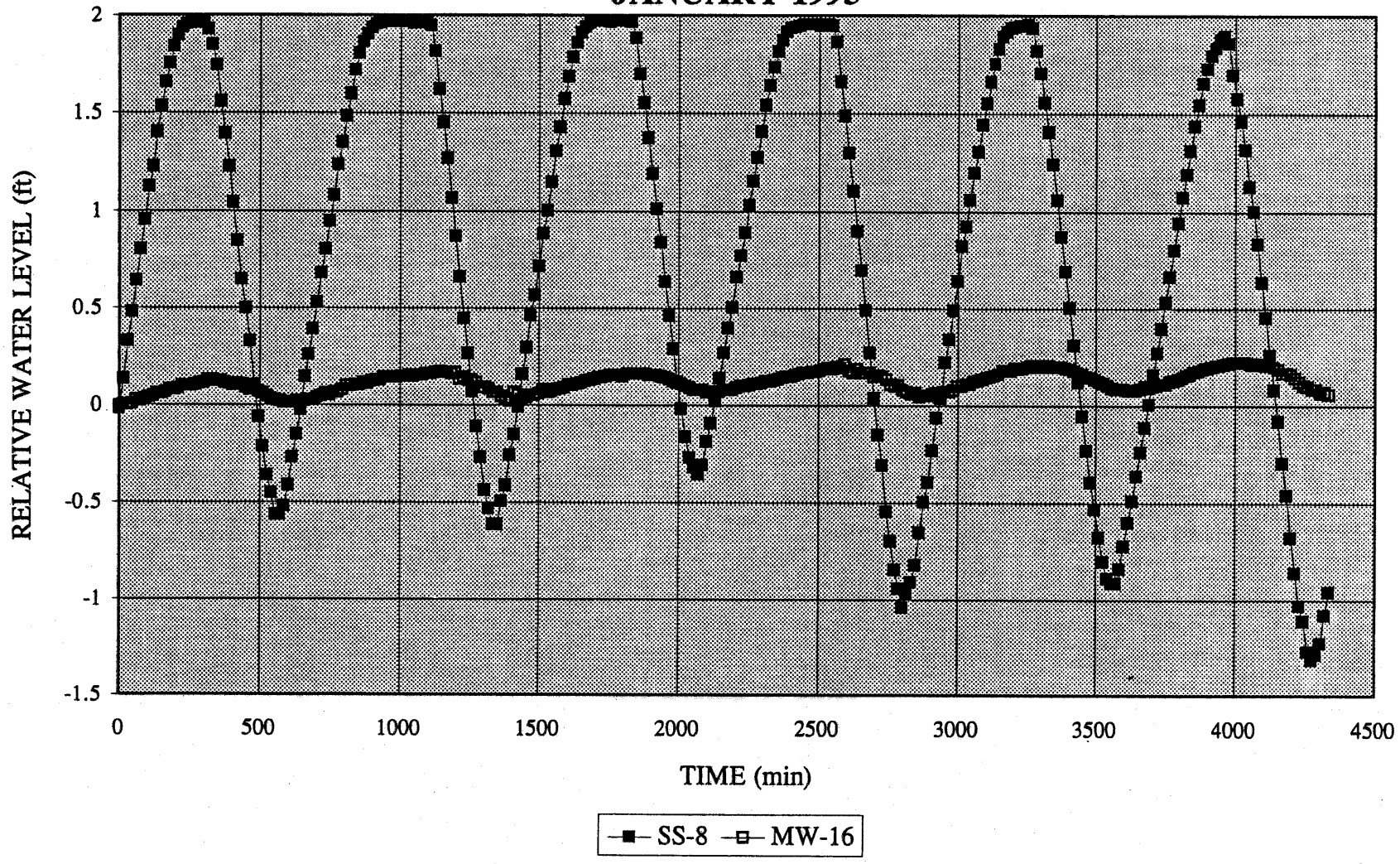
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
JANUARY 1995



(-) negative value shows rise in water level
(+) positive value shows fall in water level

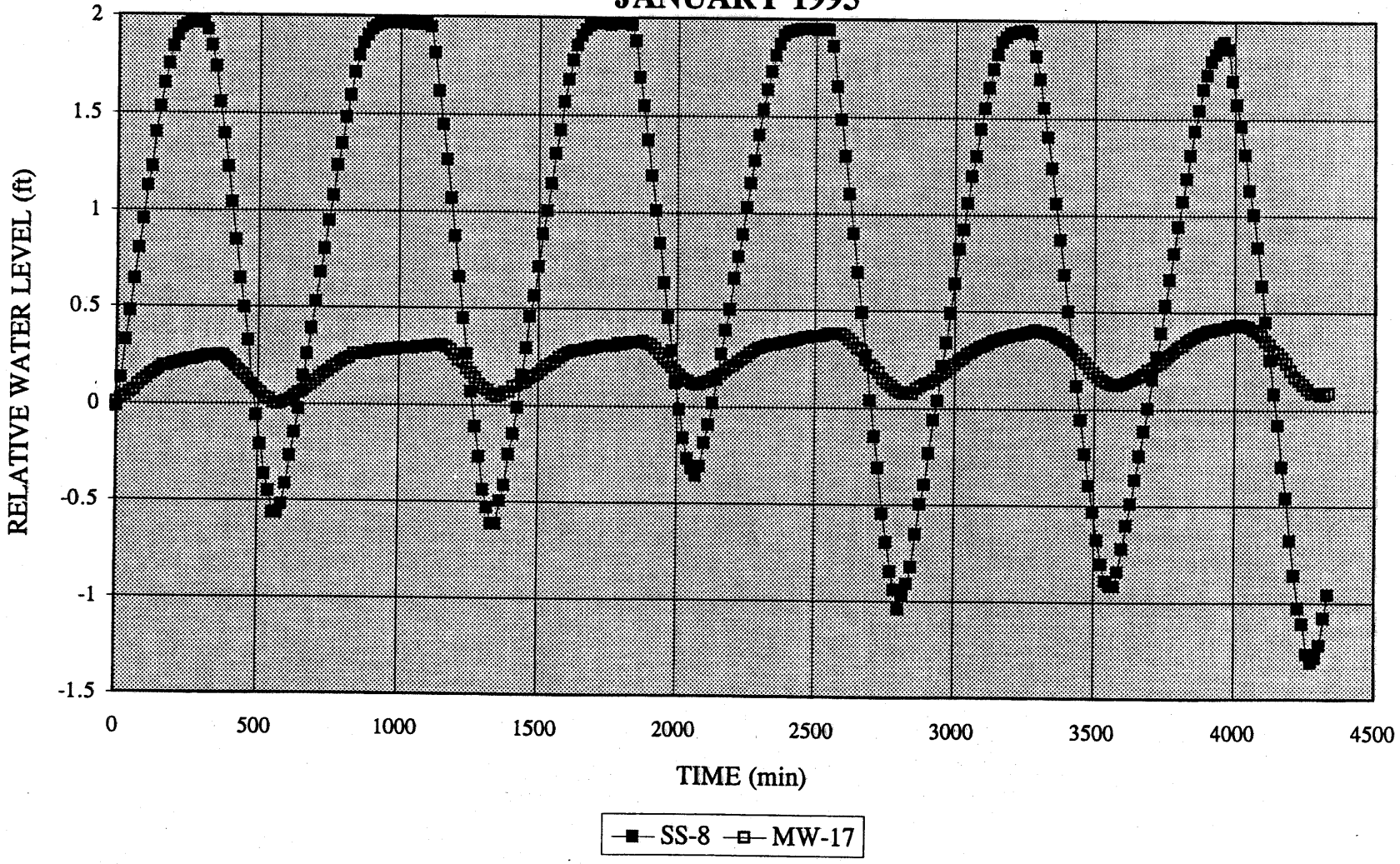
USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
JANUARY 1995



(-) negative value shows rise in water level

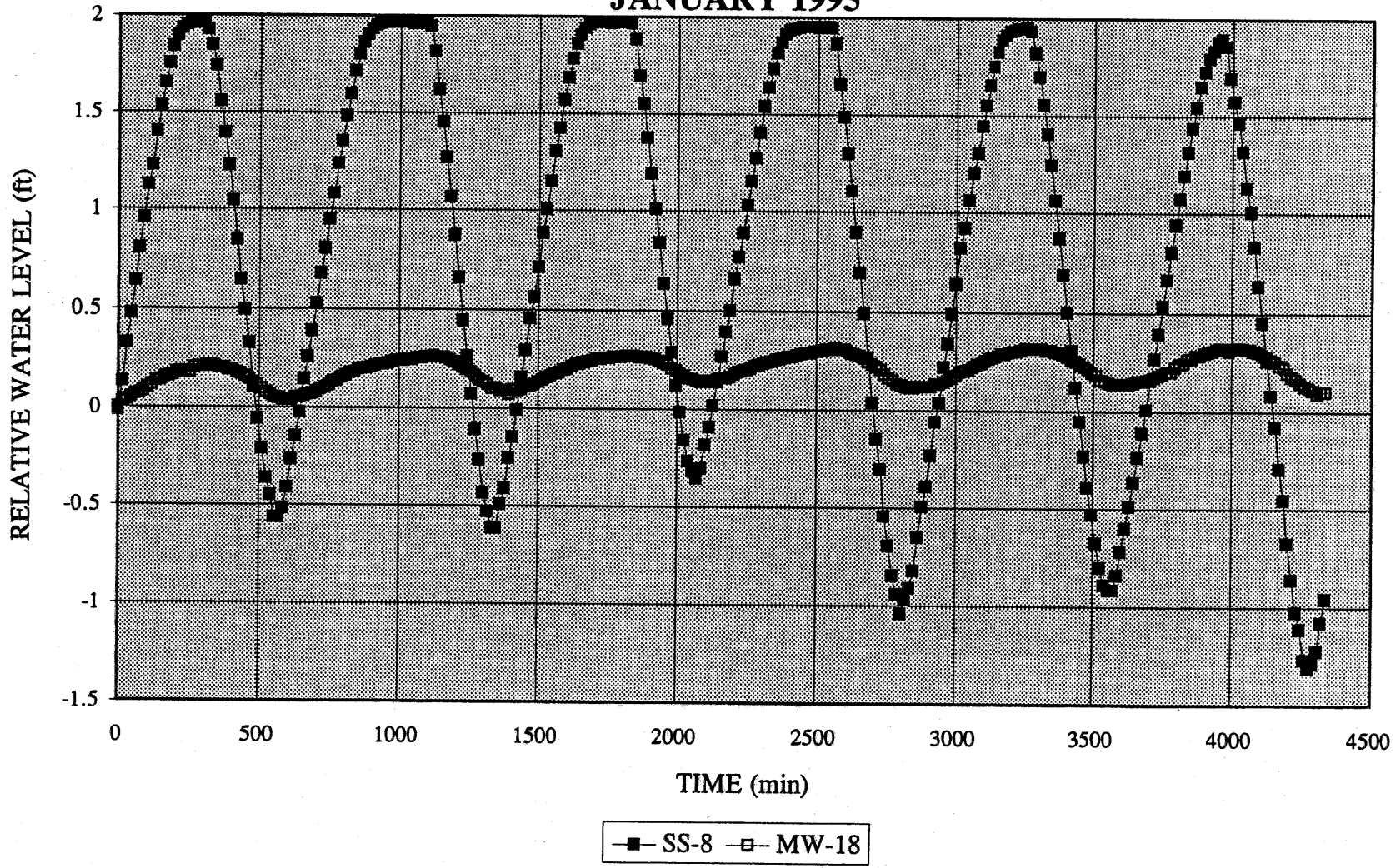
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
JANUARY 1995



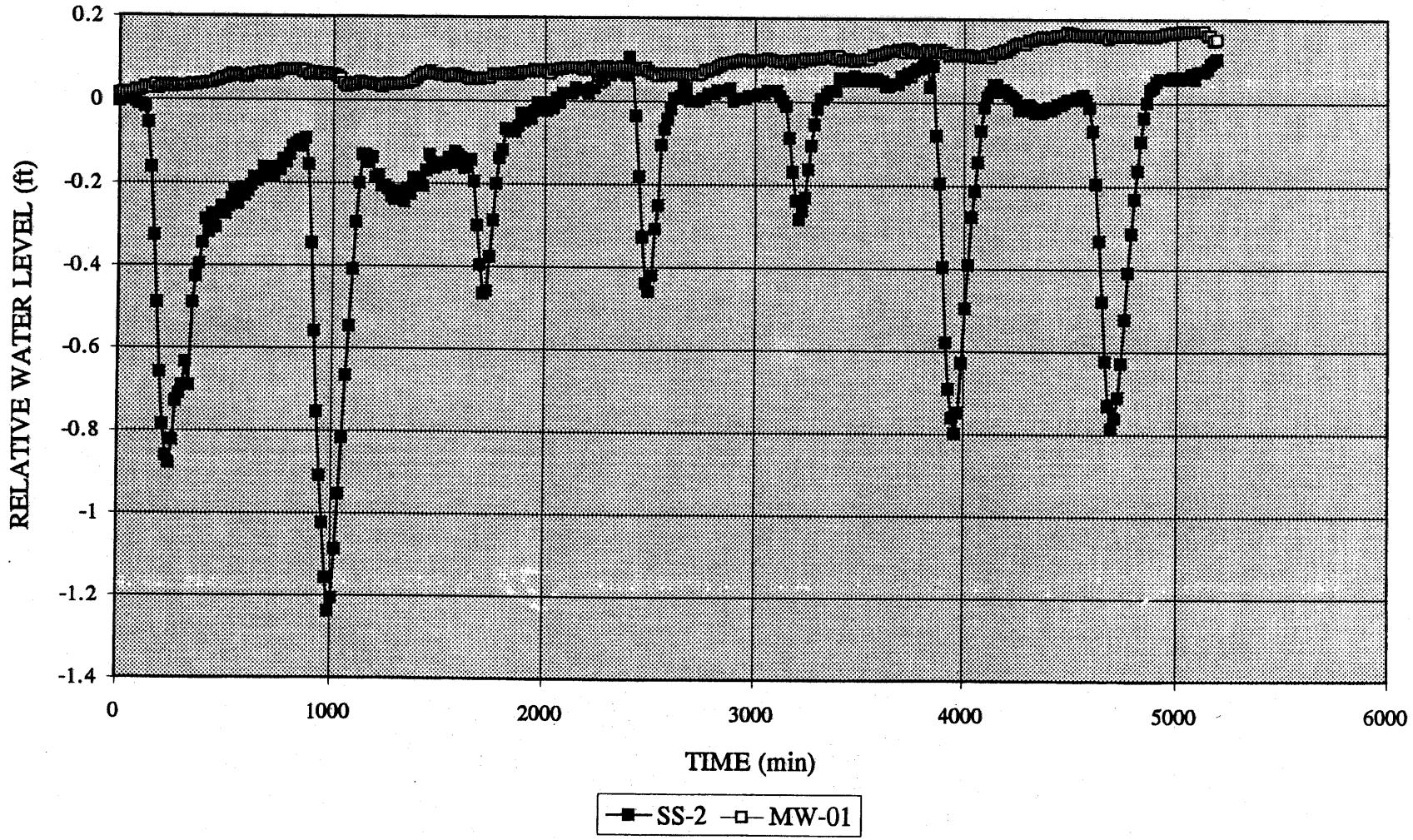
(-) negative value shows rise in water level
(+) positve value shows fall in water level

USACE, FT.MONMOUTH
TIDAL MONITORING STUDY (M-12)
JANUARY 1995



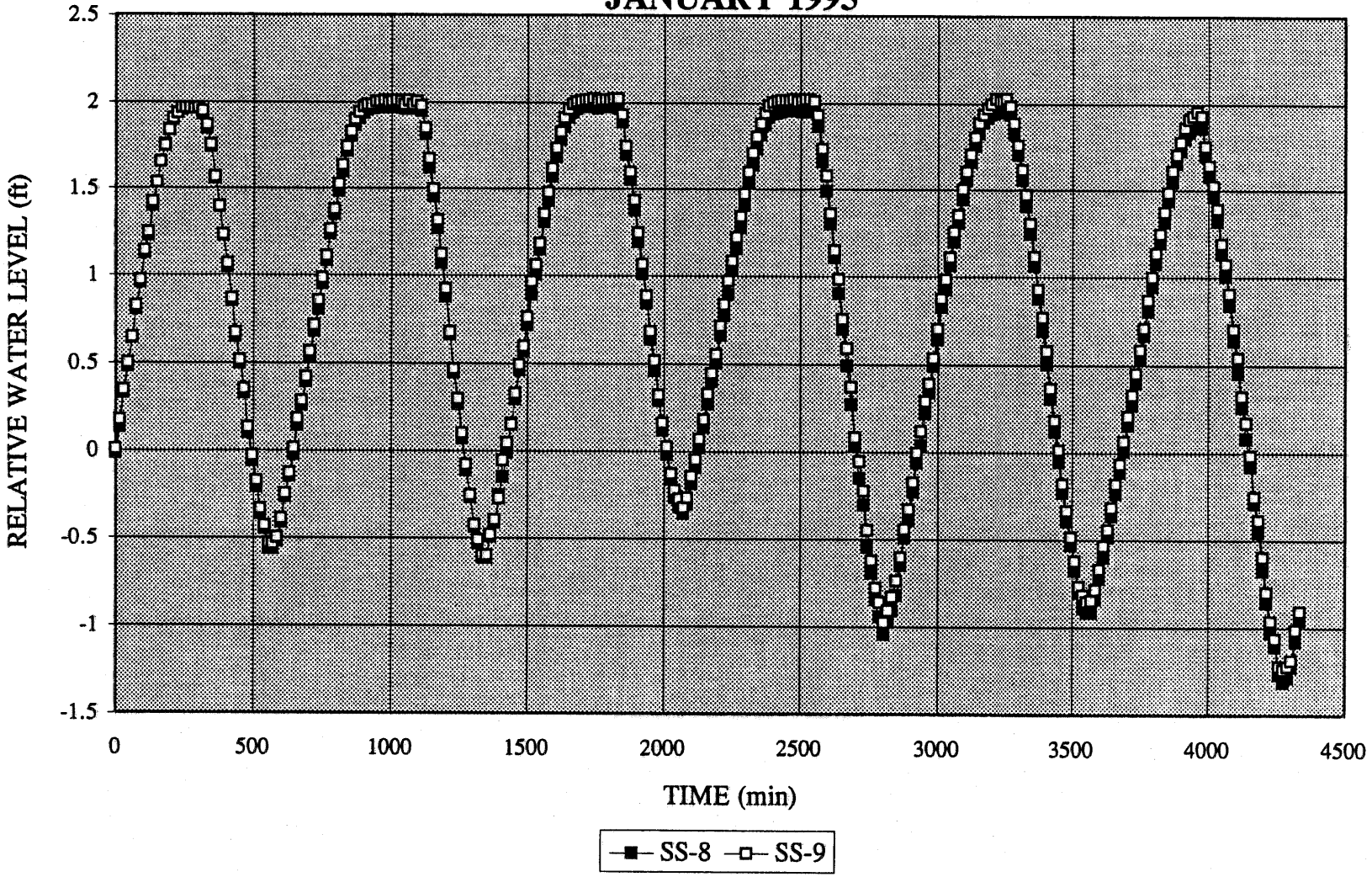
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
JANUARY 1995



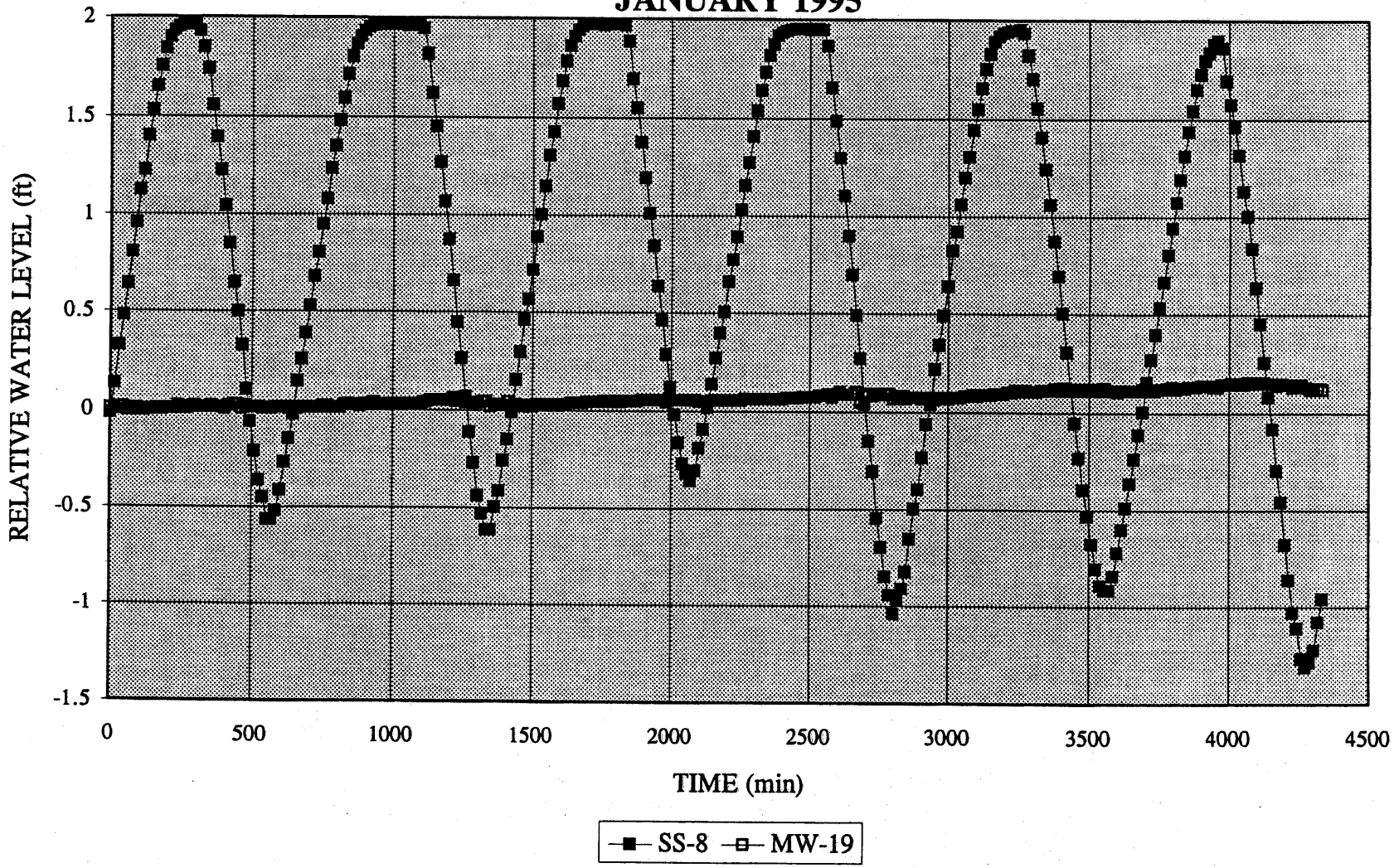
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
JANUARY 1995



(-) negative value shows rise in water level
(+) positive value shows fall in water level

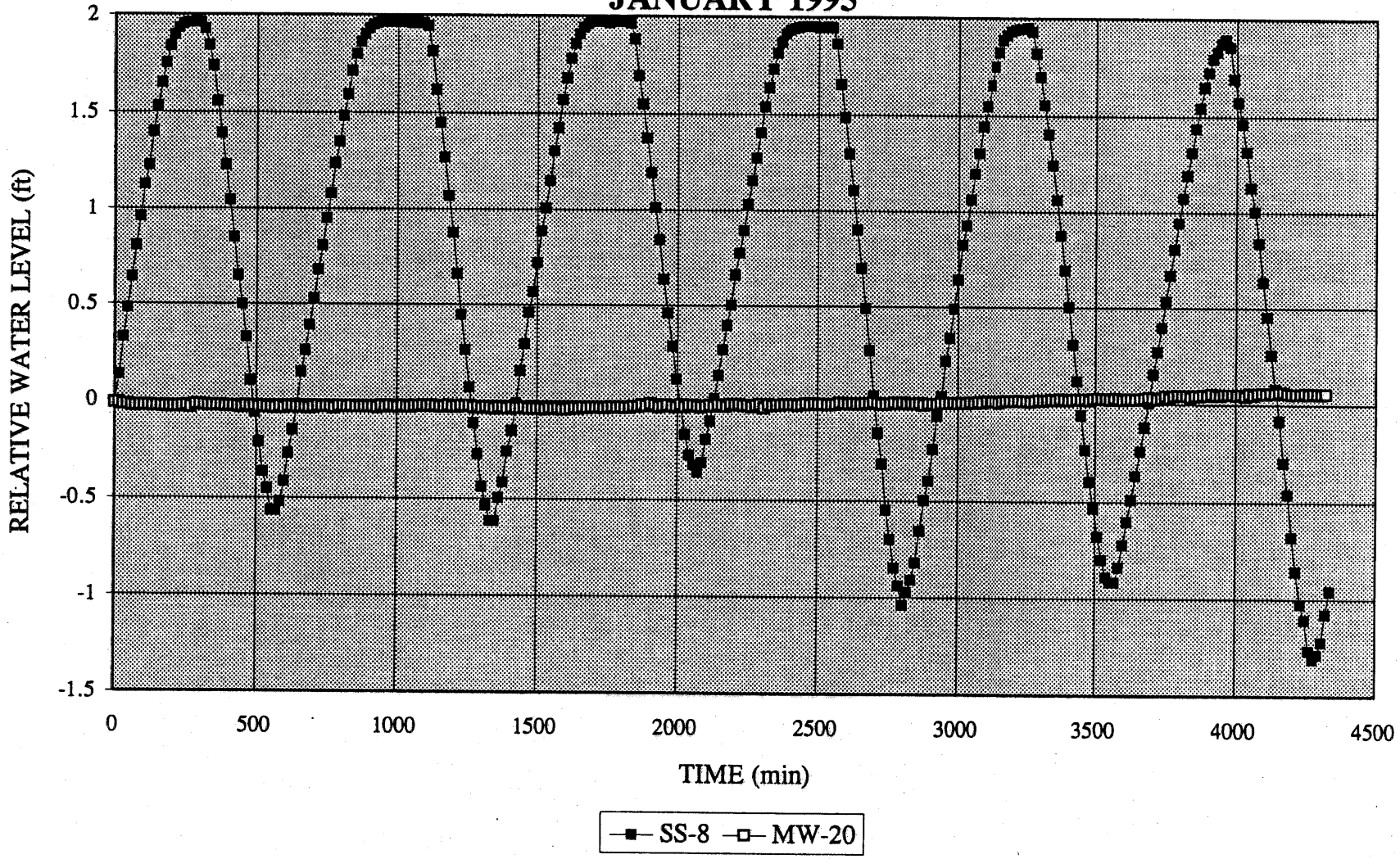
USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-14)
JANUARY 1995



(-) negative value shows rise in water level

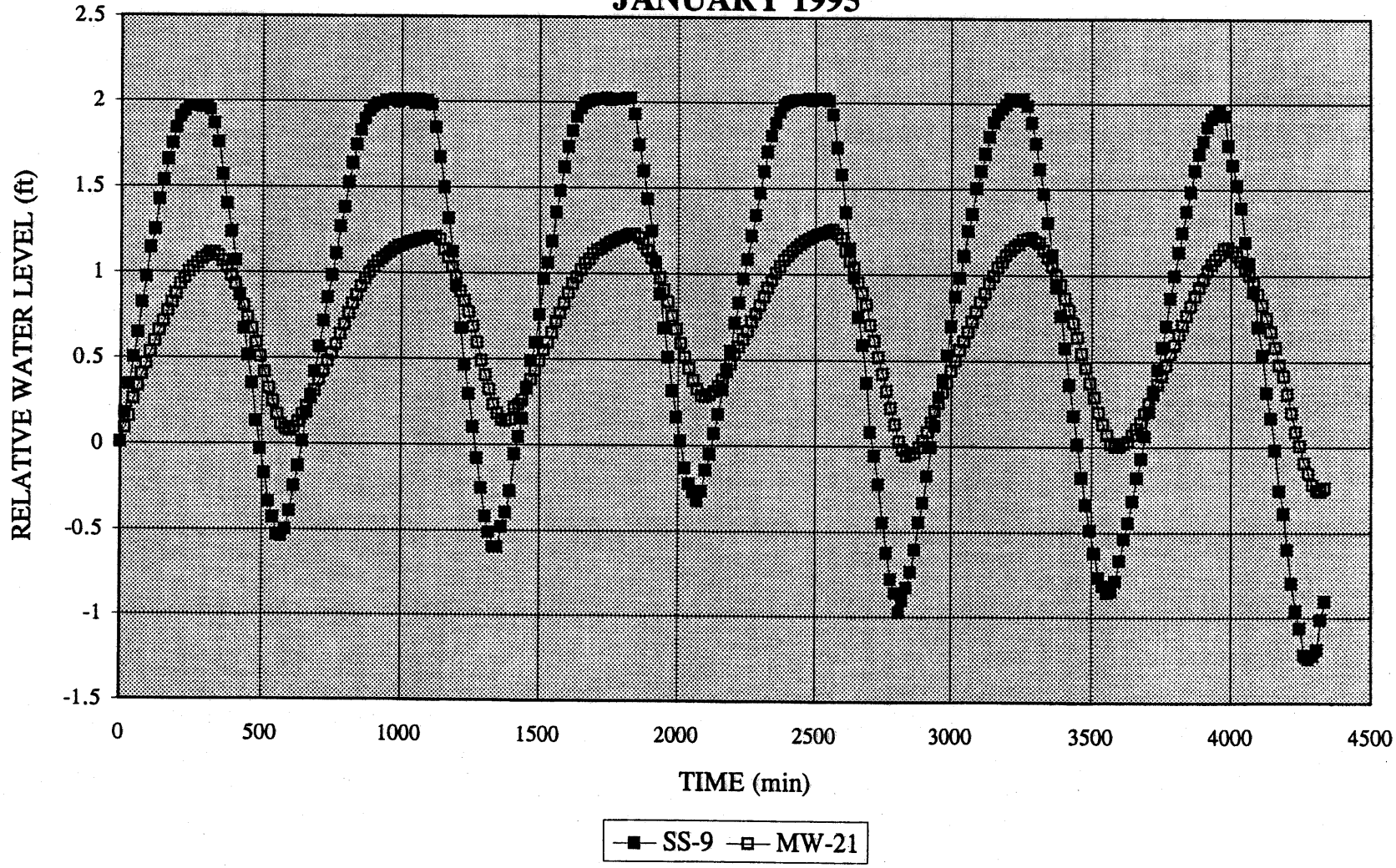
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-14)
JANUARY 1995



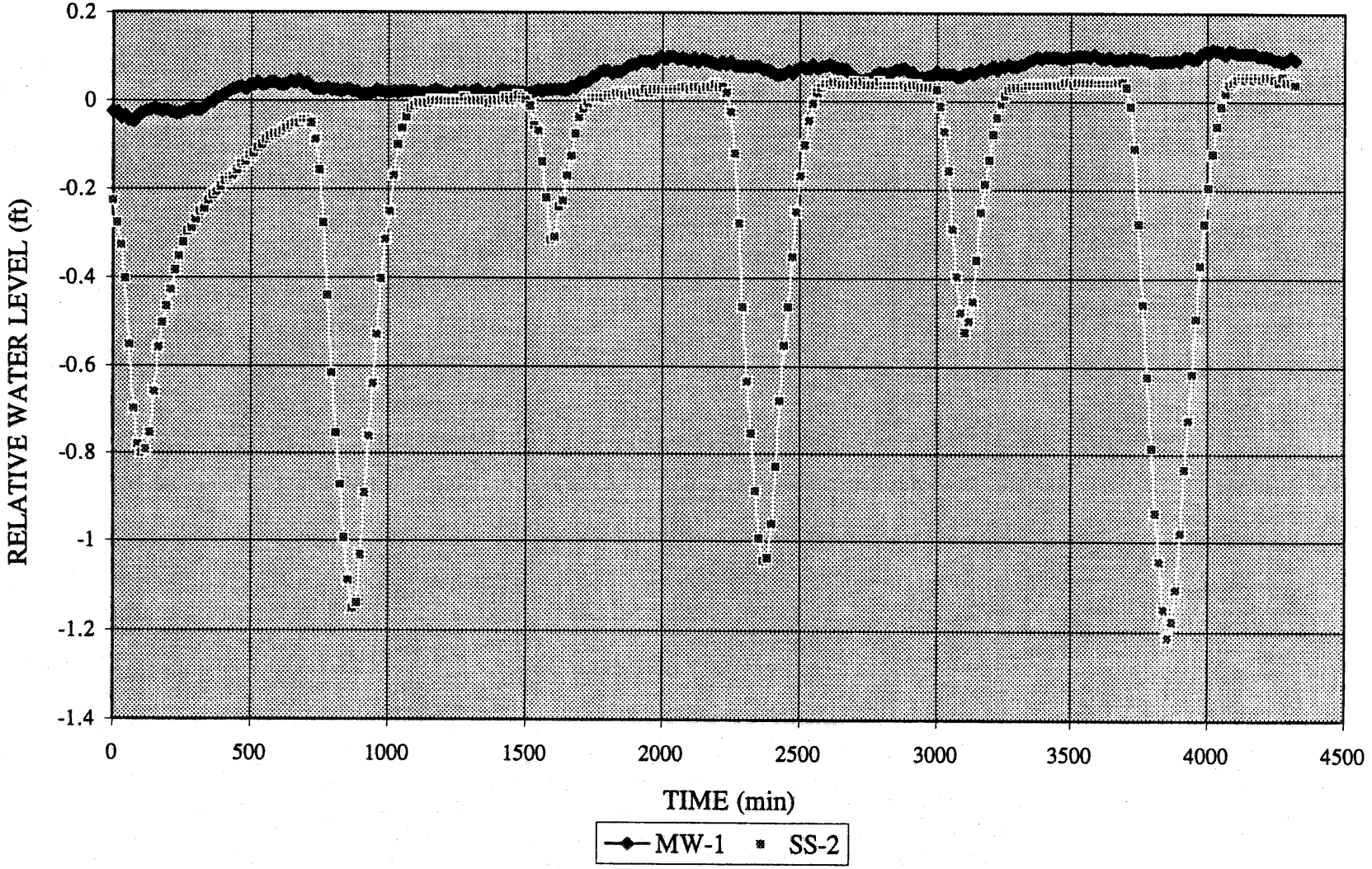
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-14)
JANUARY 1995



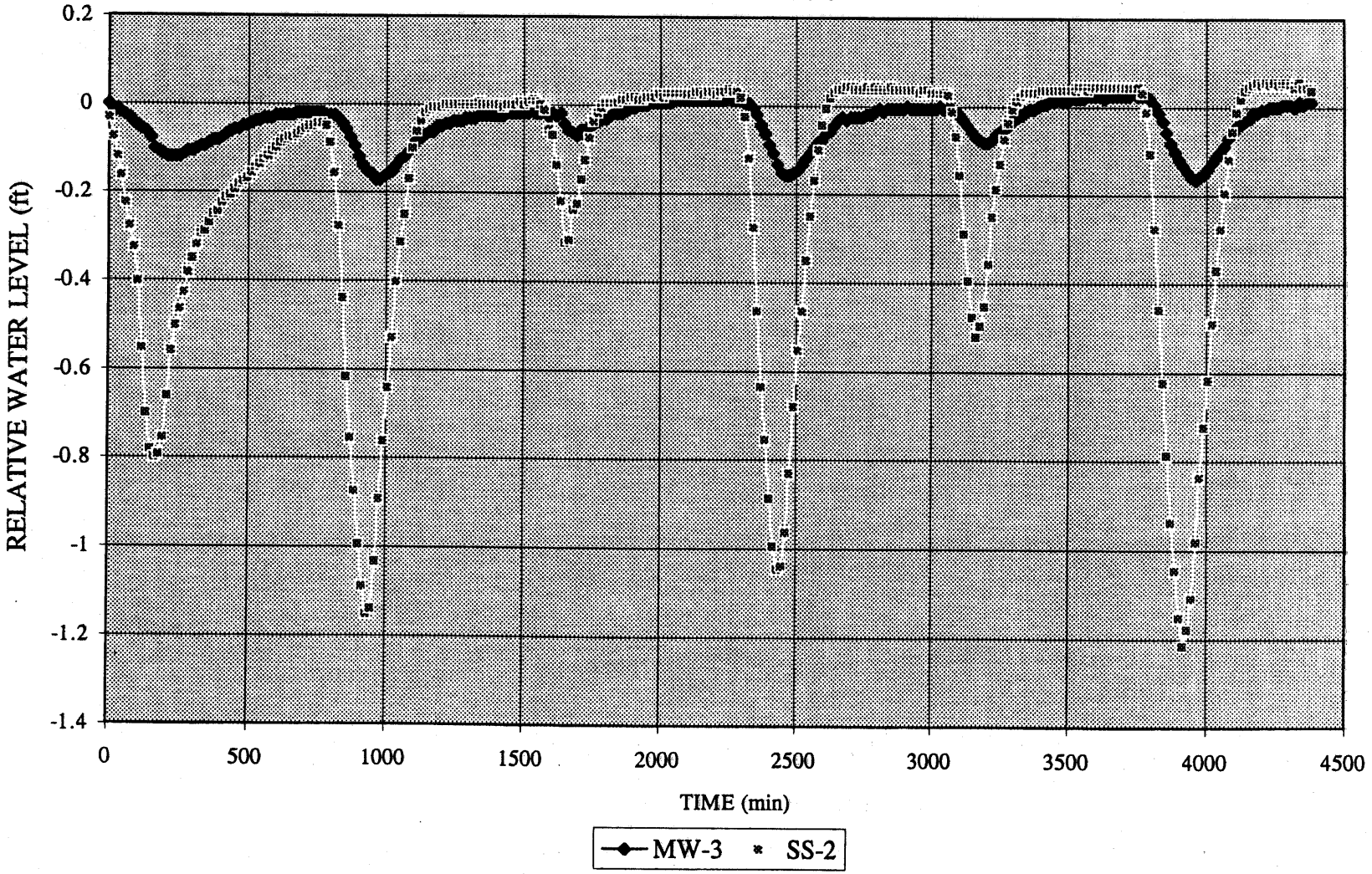
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
MARCH 1995



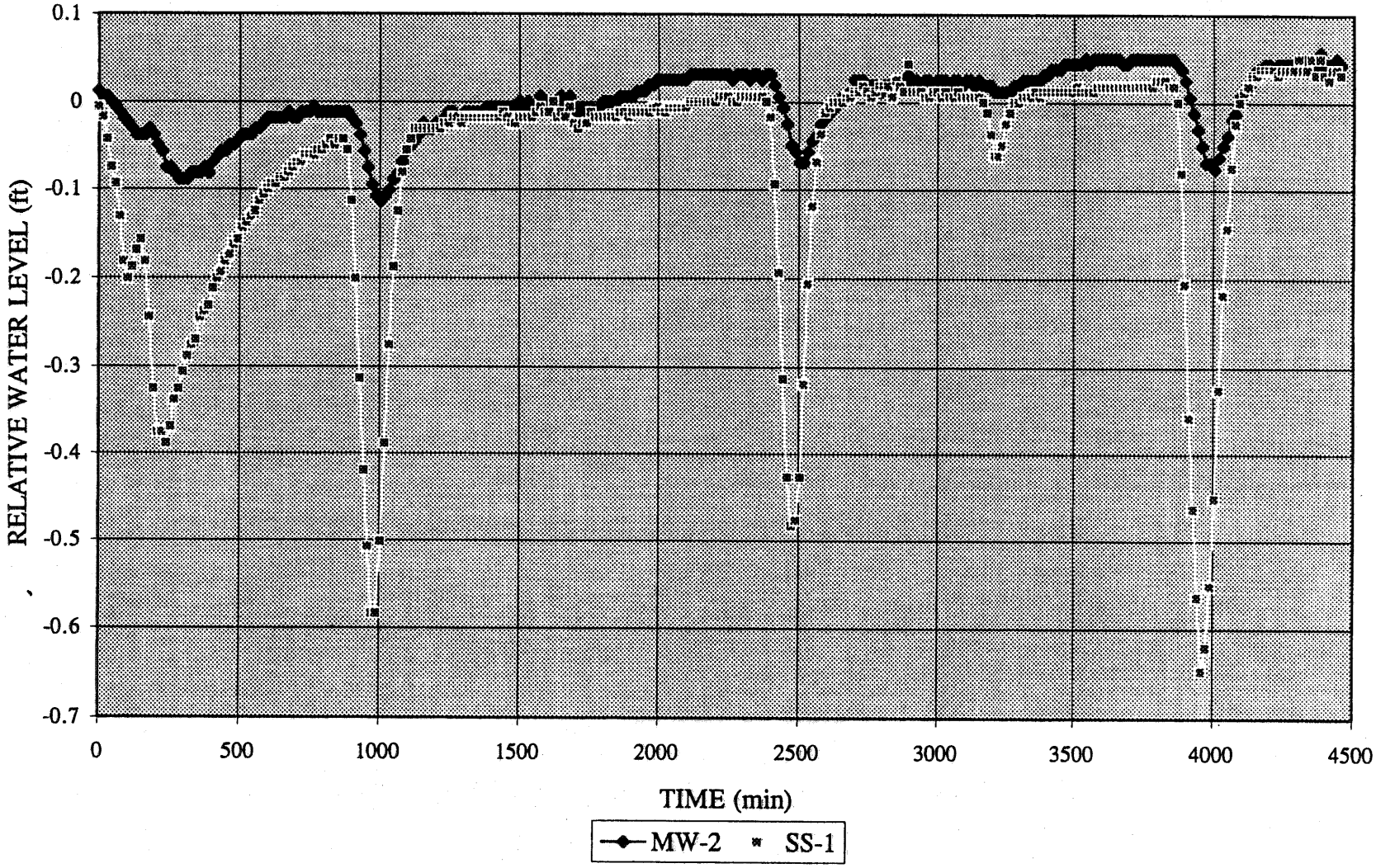
(-) negative value shows a rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
MARCH 1995



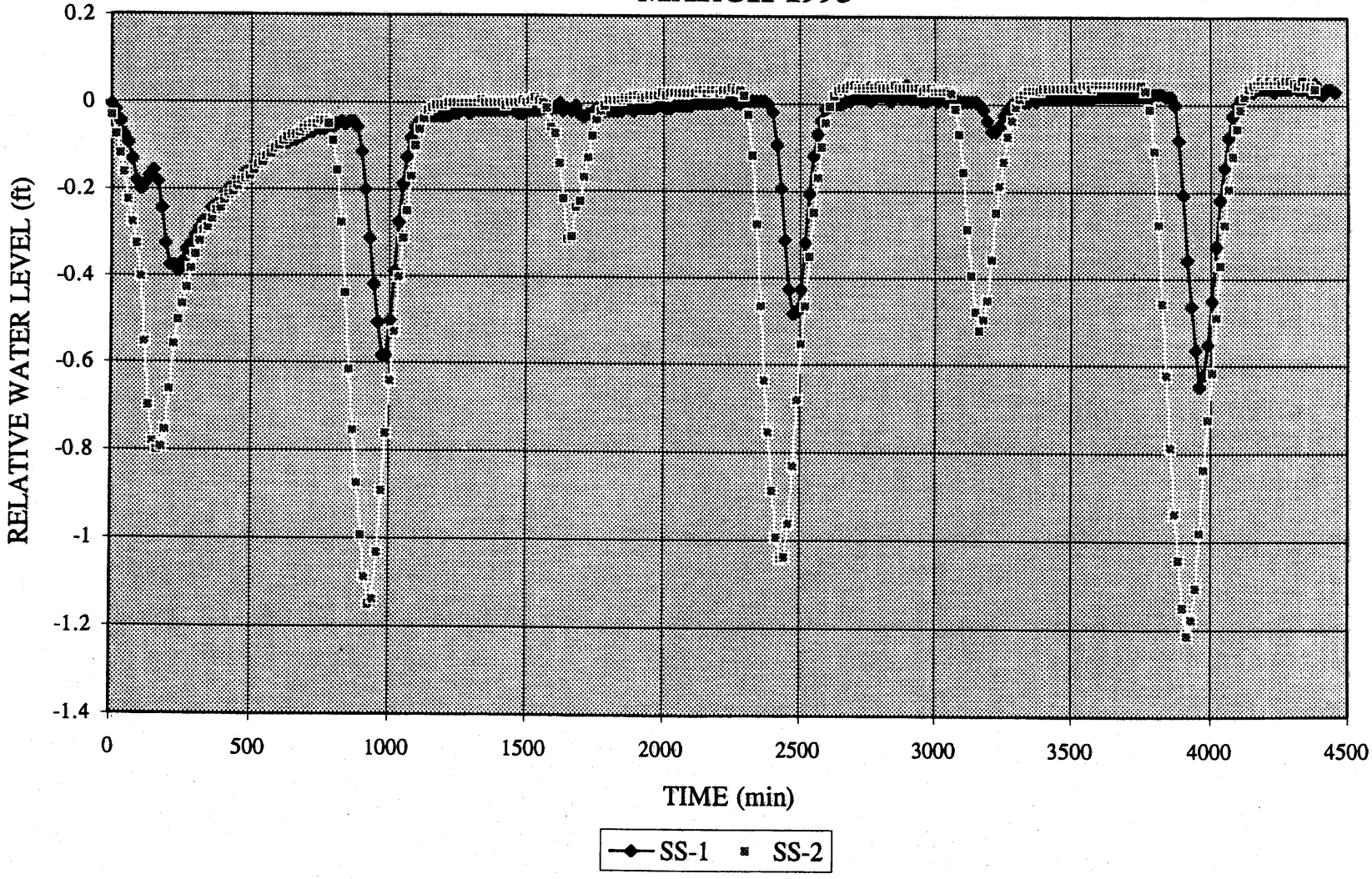
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
MARCH 1995



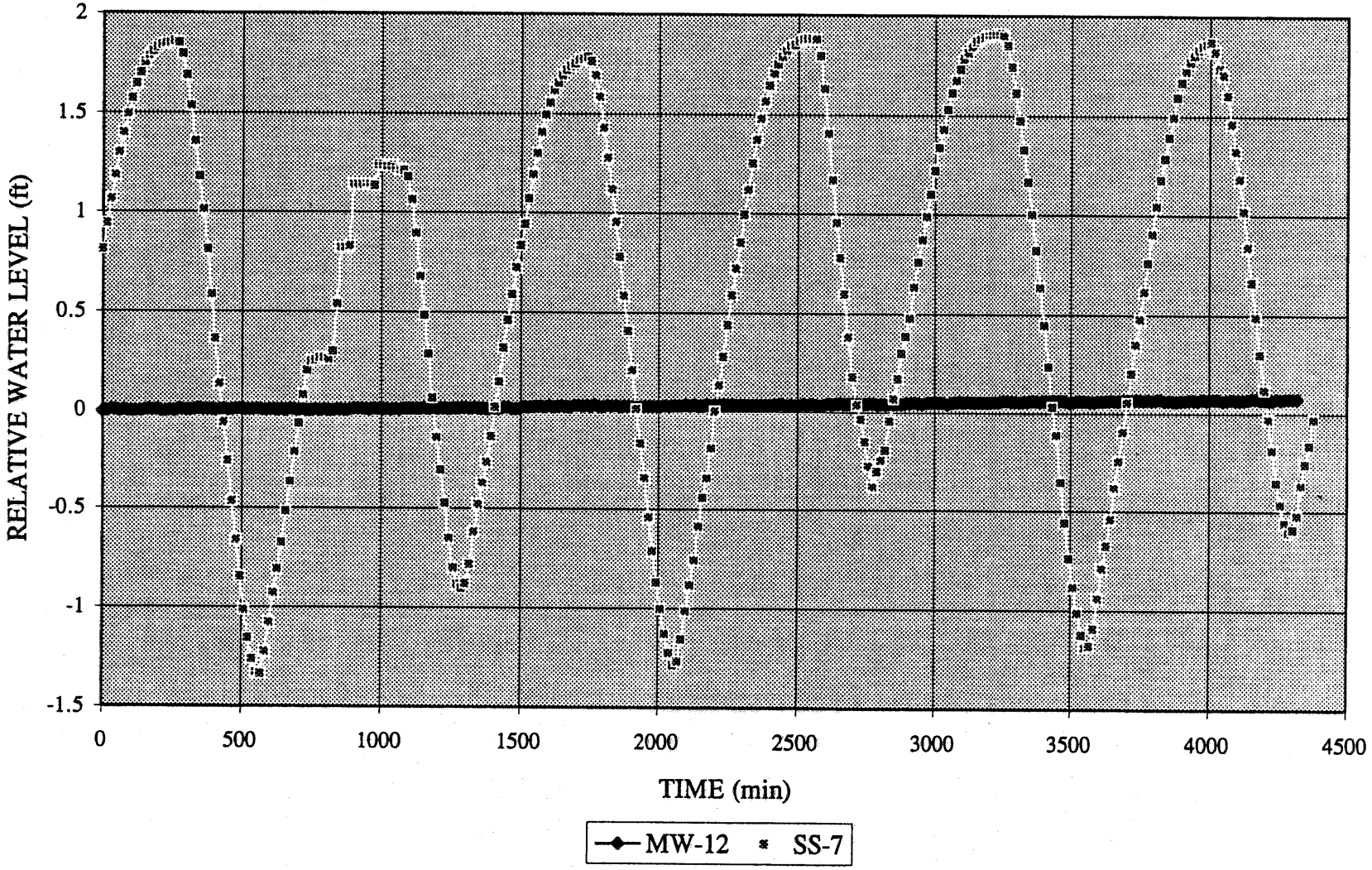
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-2)
MARCH 1995



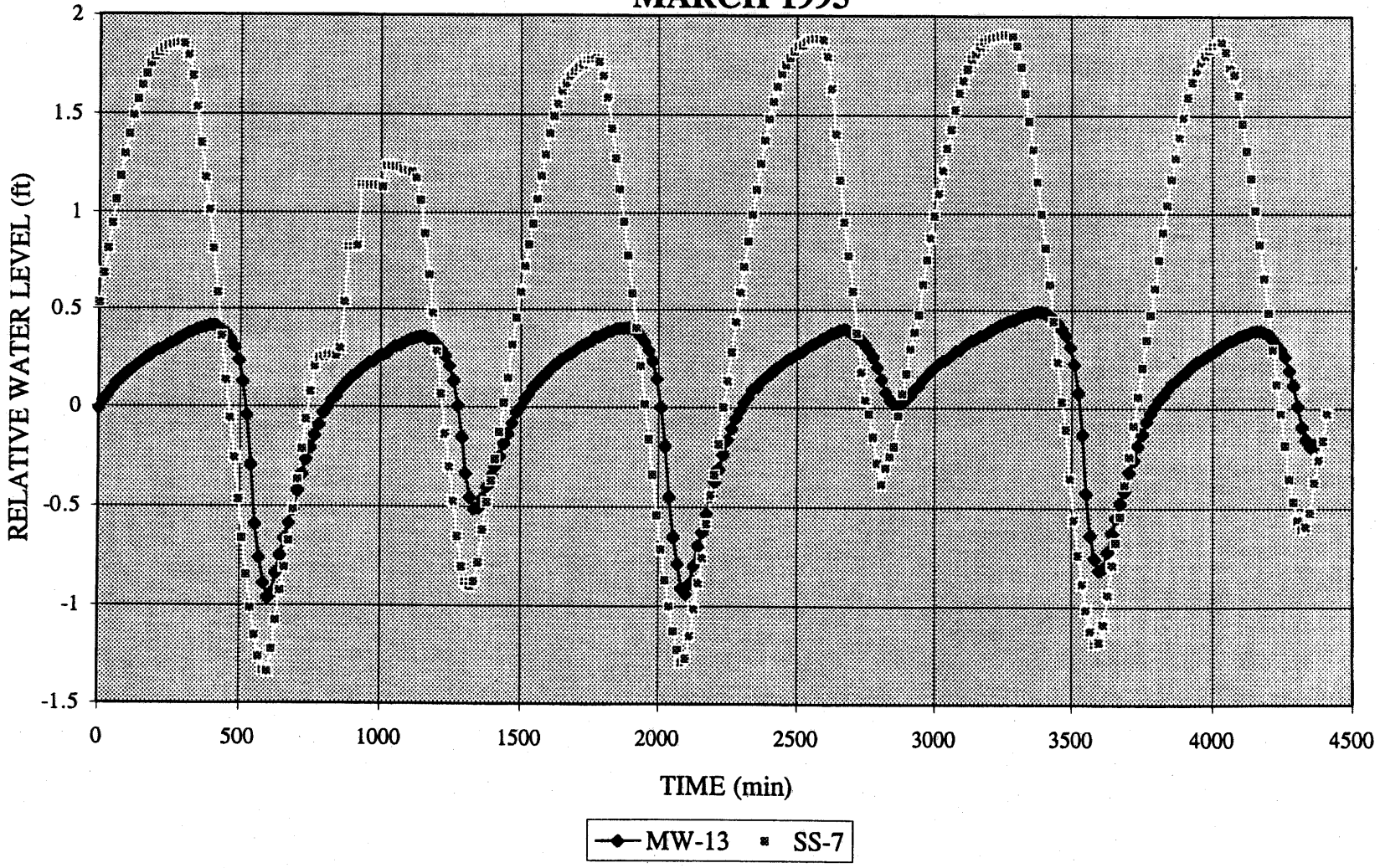
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
MARCH 1995



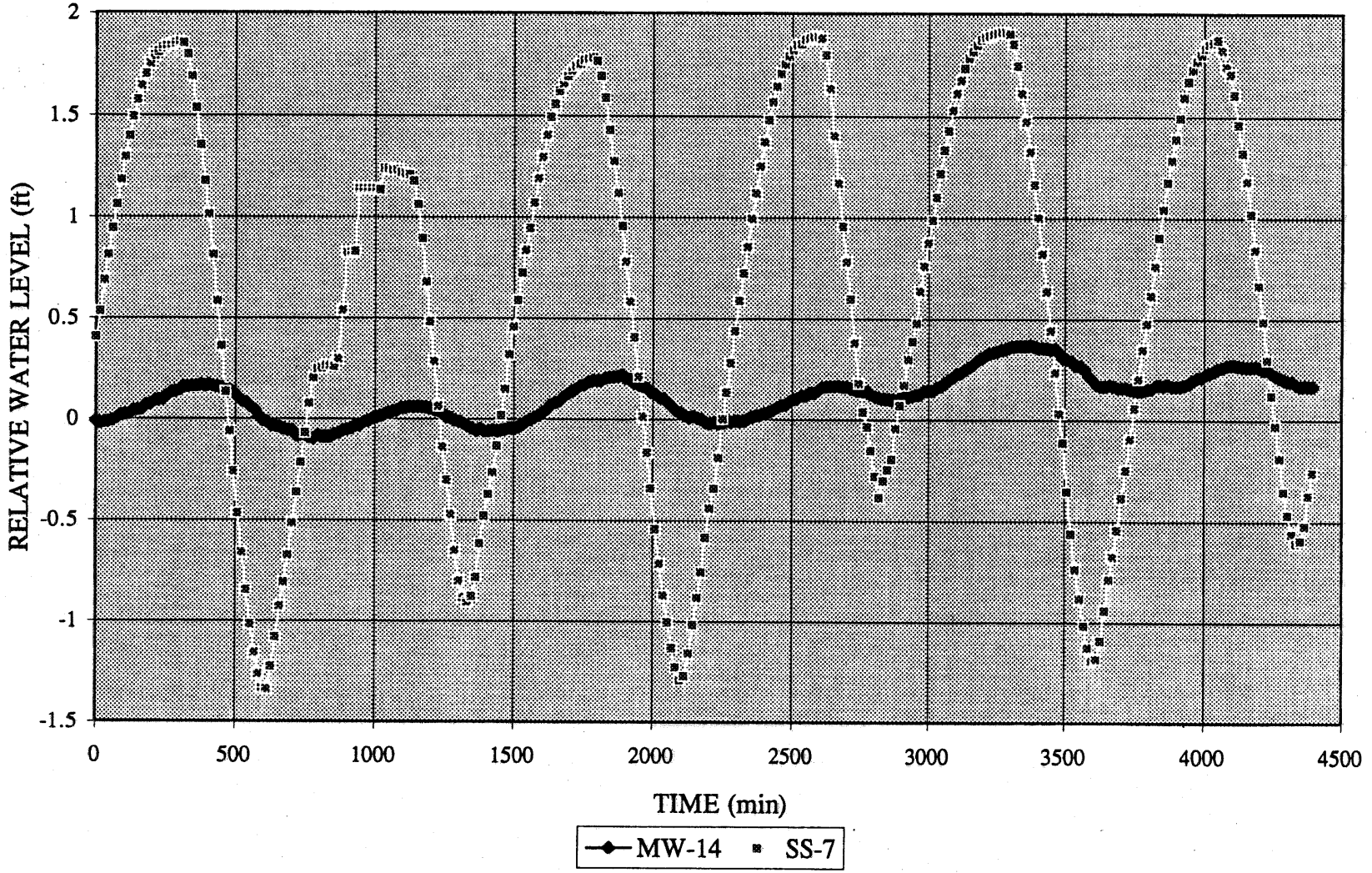
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
MARCH 1995



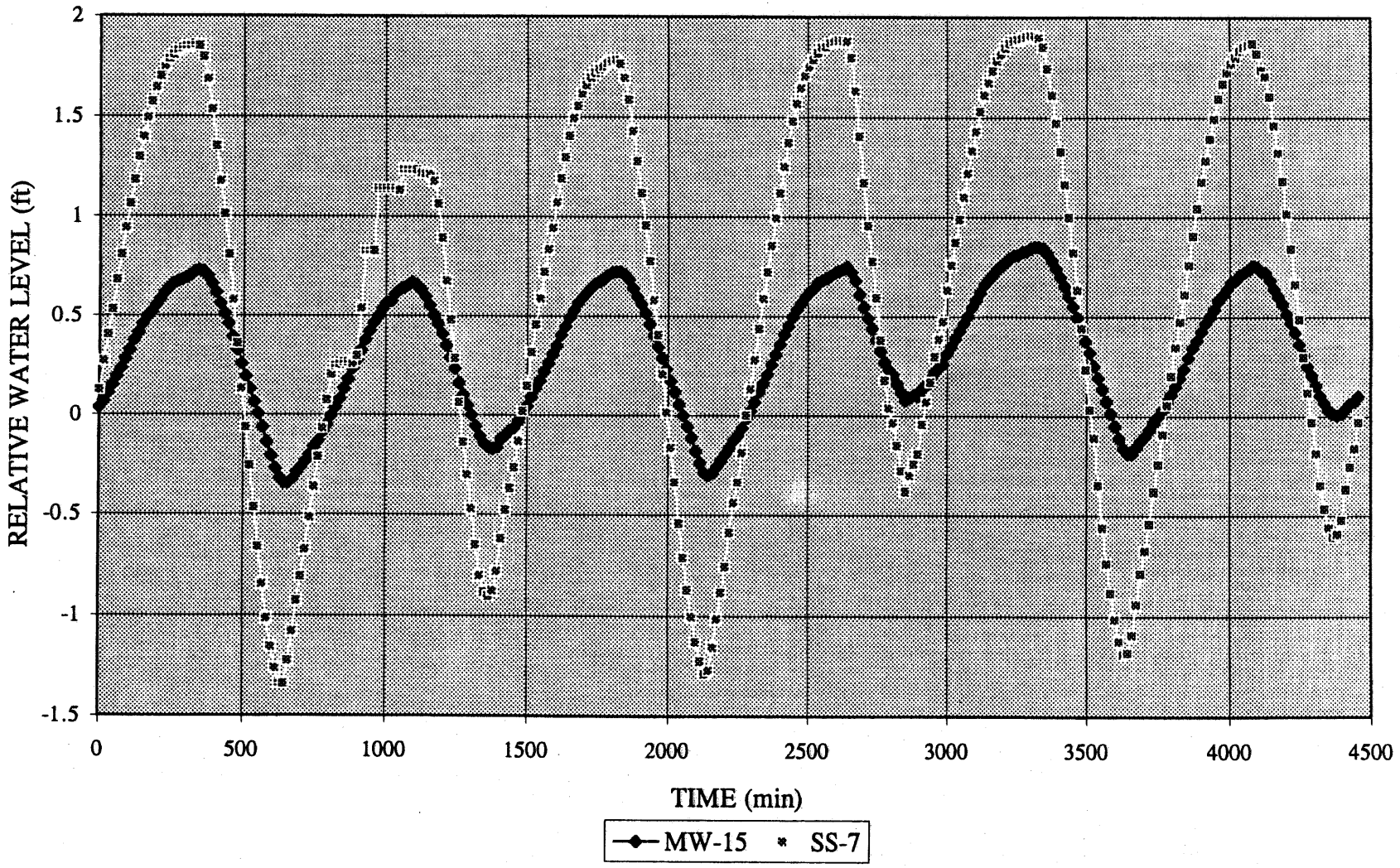
(-)negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
MARCH 1995



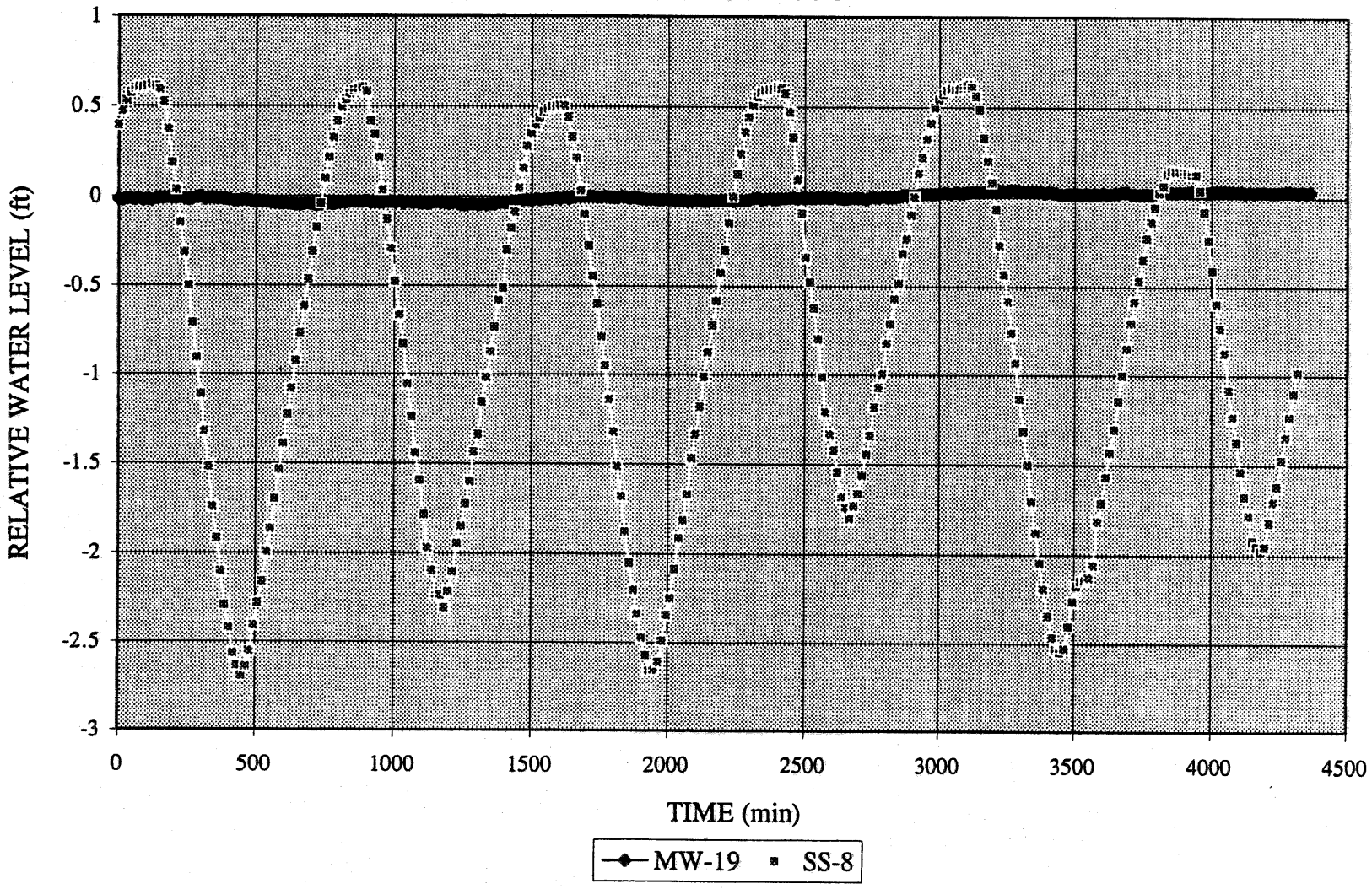
(-) negative value shows rise in water table
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-8)
MARCH 1995



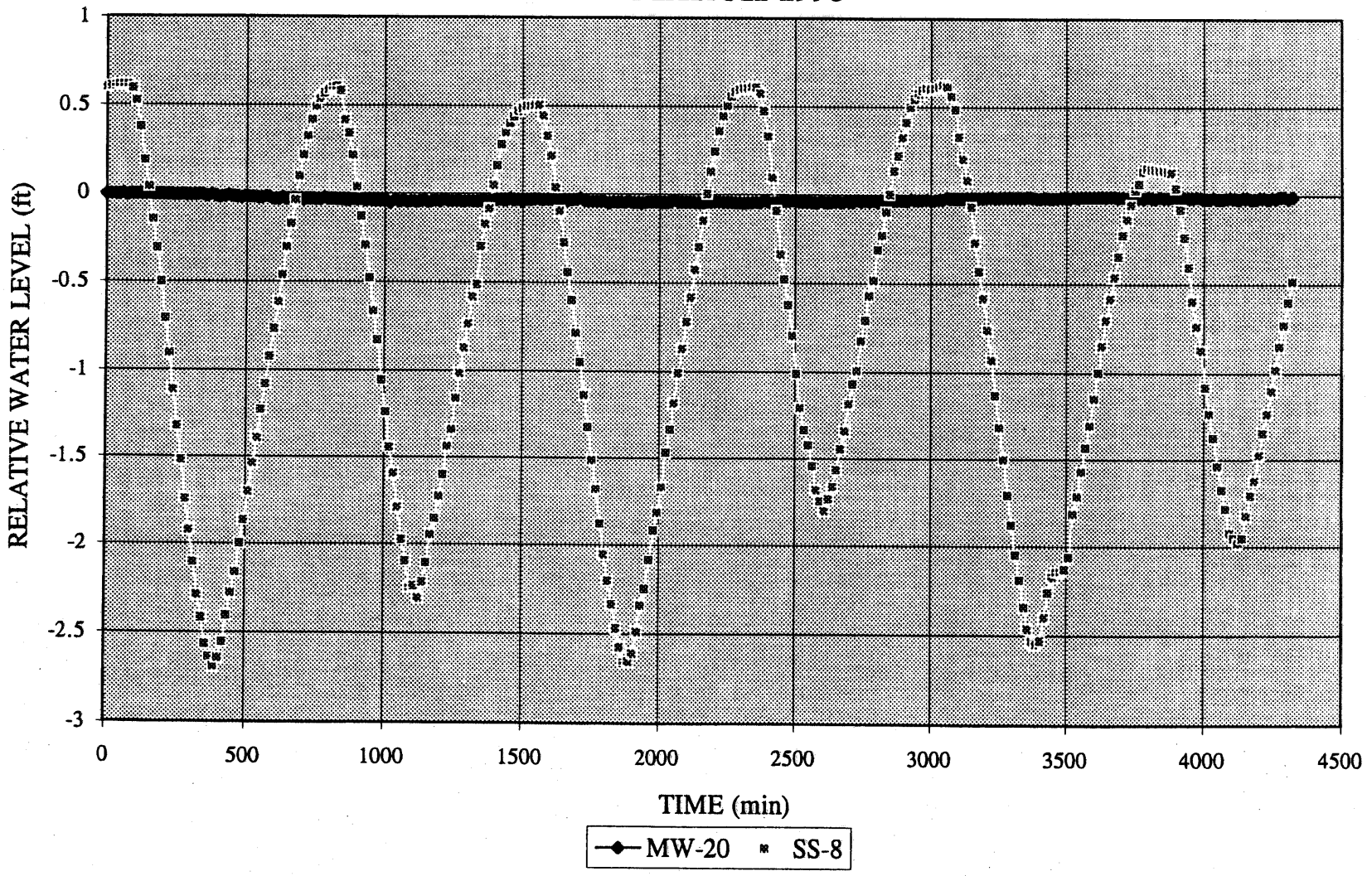
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
MARCH 1995



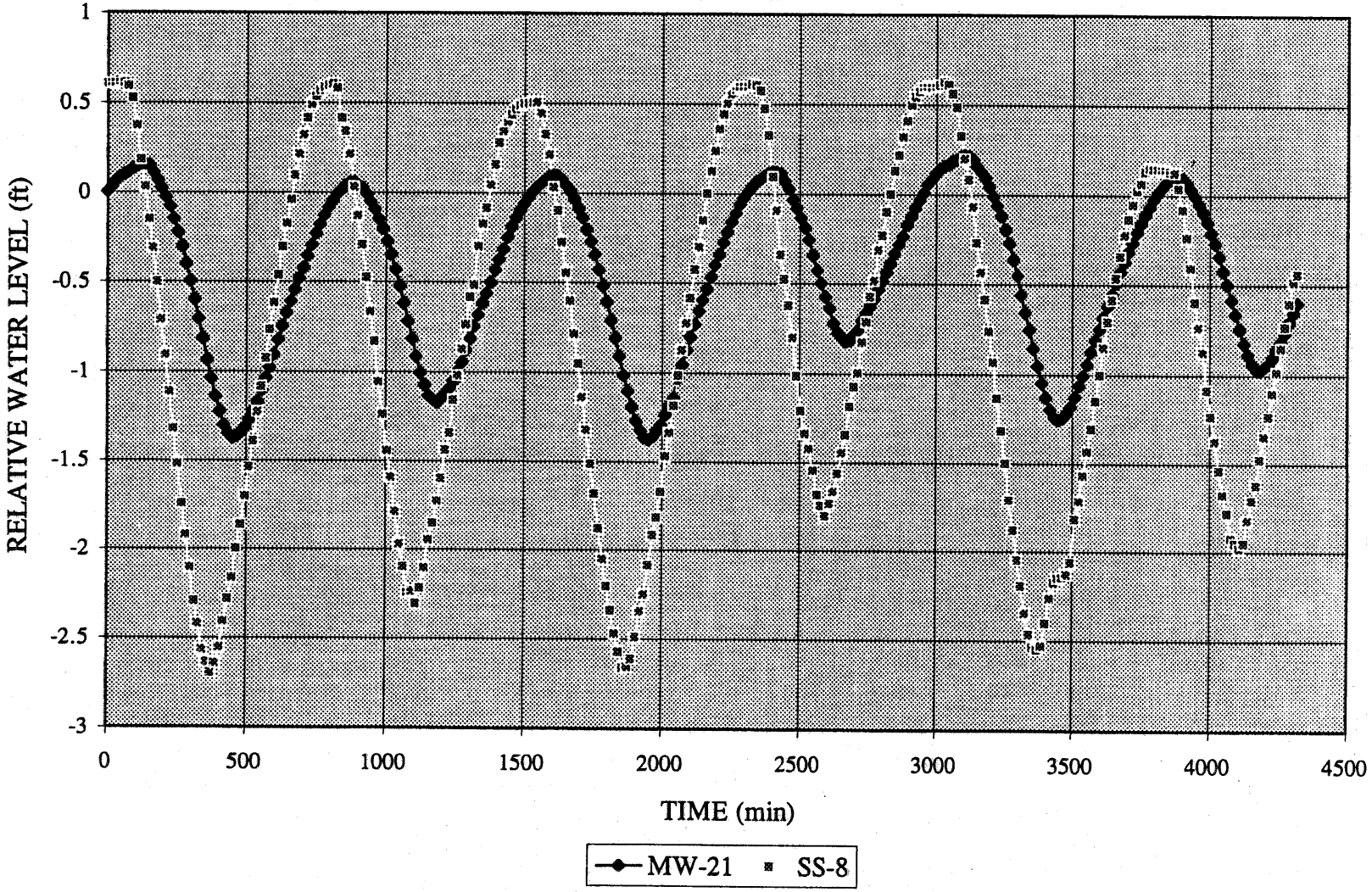
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-14)
MARCH 1995



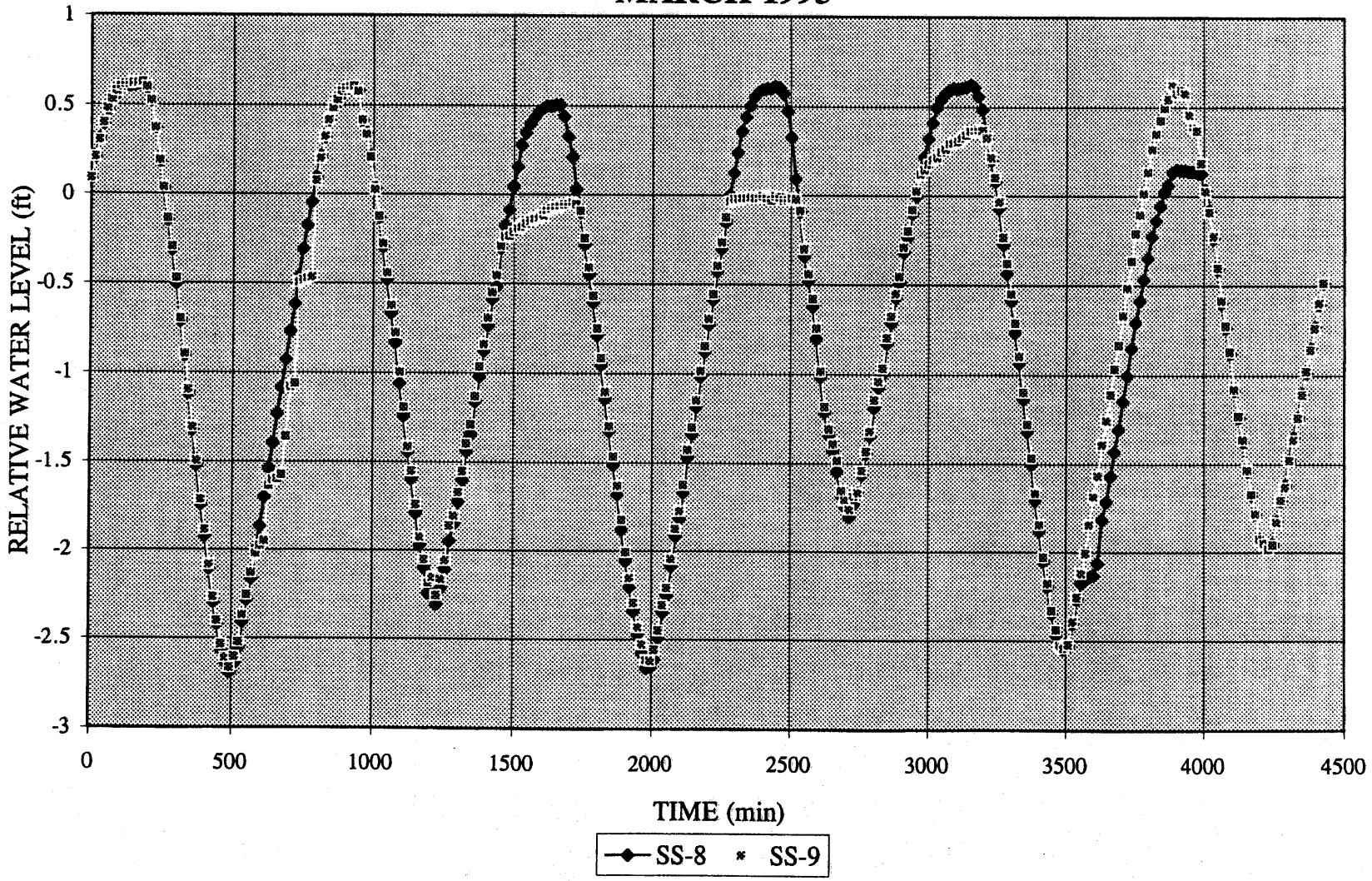
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-14)
MARCH 1995



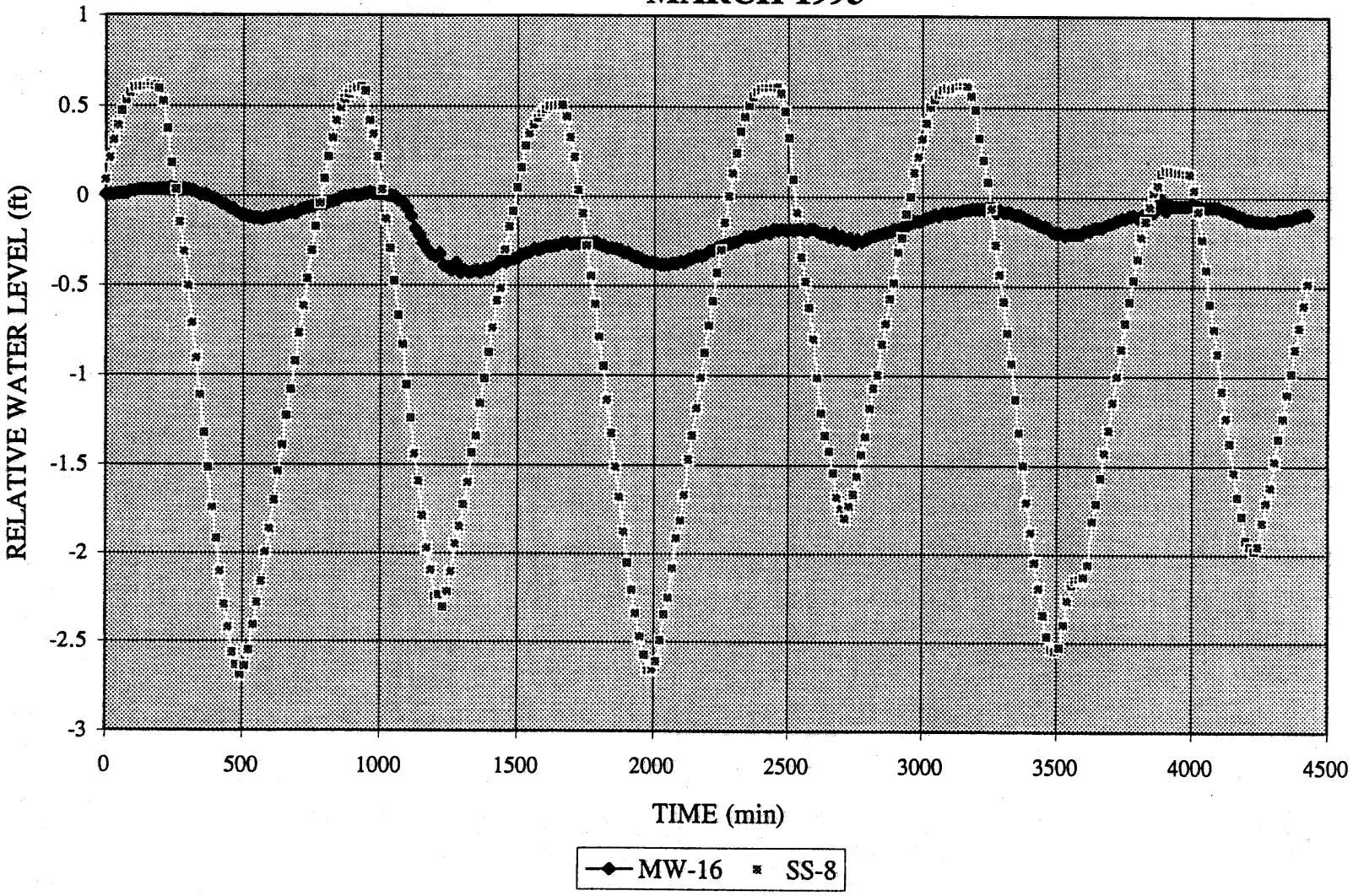
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
MARCH 1995



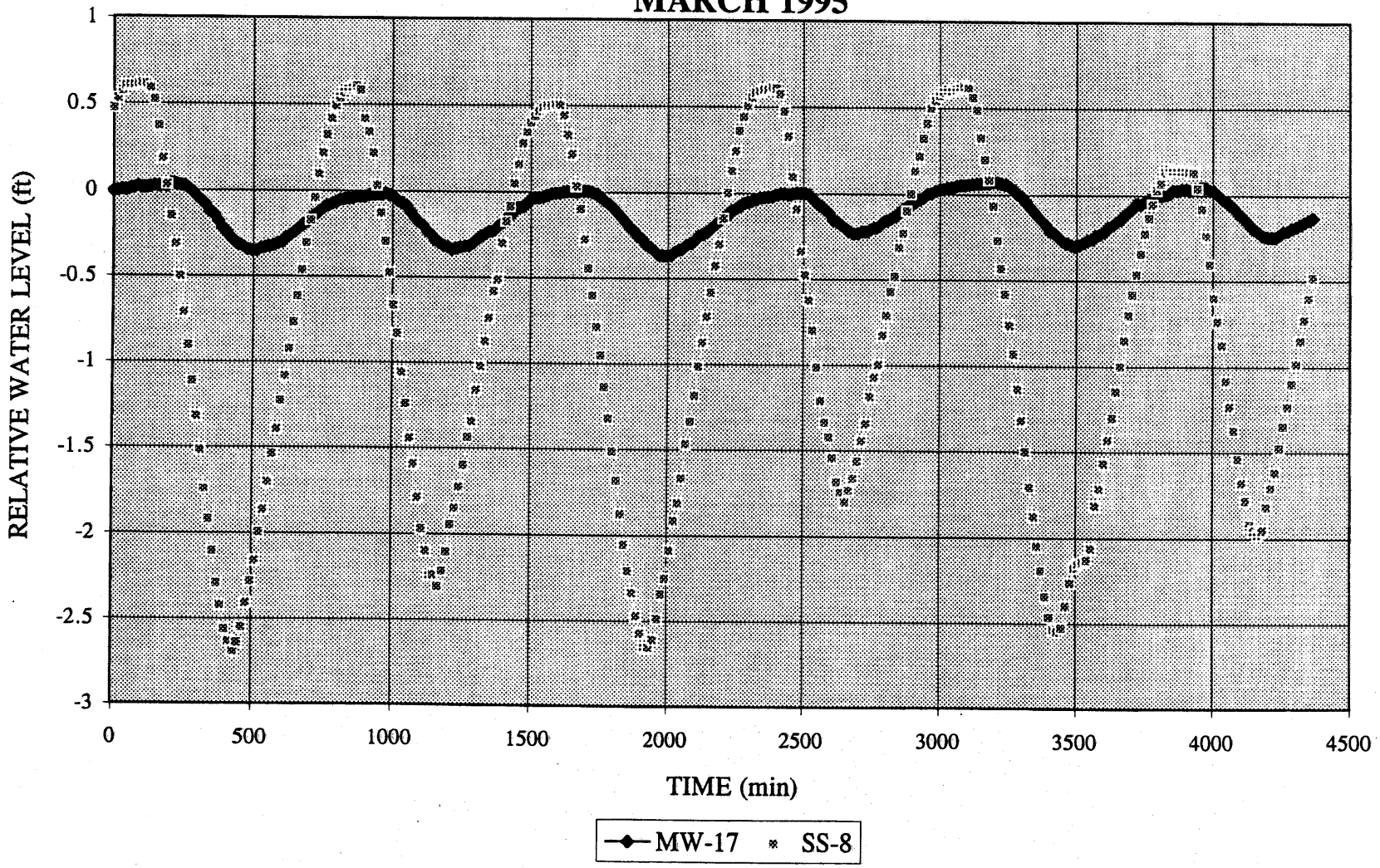
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
MARCH 1995



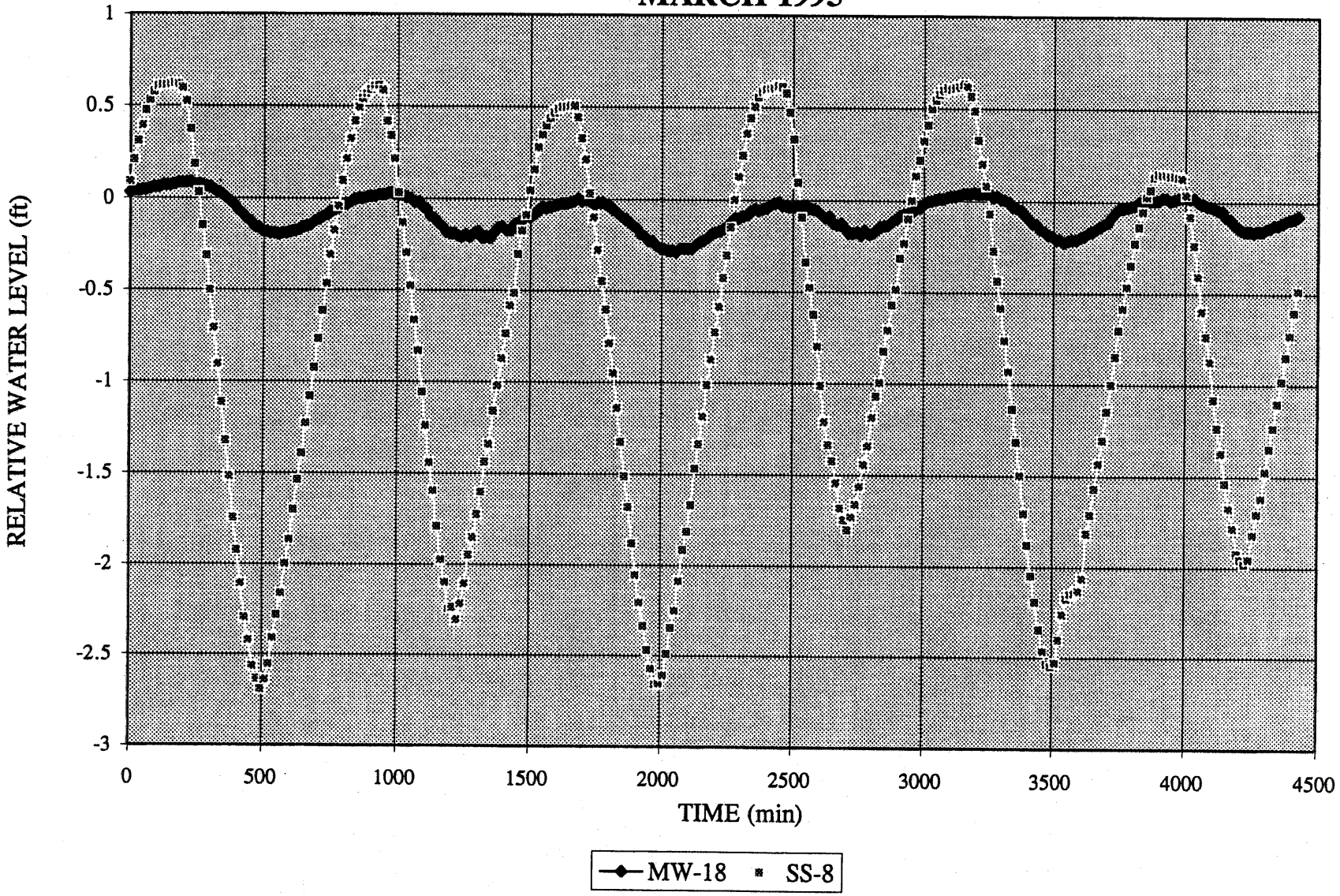
(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
MARCH 1995



(-) negative value shows rise in water level
(+) positive value shows fall in water level

USACE, FT. MONMOUTH
TIDAL MONITORING STUDY (M-12)
MARCH 1995



(-) negative value shows rise in water level
(+) positive value shows fall in water level

Table E-1
Conductivity and Salinity Summary
Tidal Monitoring Study
January 1995
Tide Out

Well No.	Tide (In/Out)	SPCD (umhos)	Salinity (umhos)
MW-1	Out	ND	ND
MW-2	Out	ND	ND
MW-3	Out	350	0.3
Stilling Well-1 (SS-1)	Out	198	0.2
Stilling Well-2 (SS-2)	Out	200	0.2
MW-12	Out	ND	ND
MW-13	Out	2300	1.5
MW-14	Out	2300	2.0
MW-15	Out	2250	2.0
Stilling Well-7 (SS-7)	Out	4200	6.5
MW-16	Out	ND	ND
MW-17	Out	ND	ND
MW-18	Out	ND	ND
MW-19	Out	130	0.0
MW-20	Out	ND	ND
MW-21	Out	ND	ND
Stilling Well-8 (SS-8)	Out	2200	2
Stilling Well-9 (SS-9)	Out	4500	4.2

Note: SPCD - specific conductance.
ppth - parts per thousand.
ND - No data.

Table E-2
Conductivity and Salinity Summary
Tidal Monitoring Study
March 1995
Tide In

Well No.	Tide (In/Out)	SPCD (umhos)	Salinity (umhos)
MW-1	In	210	0.0
MW-2	In	850	0.0
MW-3	In	355	0.0
Stilling Well-1 (SS-1)	In	225	0.0
Stilling Well-2 (SS-2)	In	235	0.0
MW-12	In	160	0.0
MW-13	In	170	1.5
MW-14	In	270	2.0
MW-15	In	2000	2.0
Stilling Well-7 (SS-7)	In	3600	1.5
MW-16	In	140	0.0
MW-17	In	200	0.0
MW-18	In	165	0.0
MW-19	In	128	0.0
MW-20	In	195	0.0
MW-21	In	180	0.0
Stilling Well-8 (SS-8)	In	11000	9.5
Stilling Well-9 (SS-9)	In	11000	9.5

Note: SPCD - specific conductance.
ppth - parts per thousand.

Table E-3
Conductivity and Salinity Summary
Tidal Monitoring Study
March 1995
Tide Out

Well No.	Tide (In/Out)	SPCD (umhos)	Salinity (umhos)
MW-1	Out	190	0.0
MW-2	Out	880	0.0
MW-3	Out	320	0.0
Stilling Well-1 (SS-1)	Out	235	0.0
Stilling Well-2 (SS-2)	Out	240	0.0
MW-12	Out	150	1.0
MW-13	Out	1600	1.0
MW-14	Out	2600	2.0
MW-15	Out	210	2.0
Stilling Well-7 (SS-7)	Out	4000	4.5
MW-16	Out	130	0.0
MW-17	Out	198	0.0
MW-18	Out	150	0.0
MW-19	Out	120	0.0
MW-20	Out	140	0.0
MW-21	Out	170	0.0
Stilling Well-8 (SS-8)	Out	3600	3.0
Stilling Well-9 (SS-9)	Out	3000	2.0

Note: SPCD - specific conductance.
ppth - parts per thousand.

FINAL

Remedial Investigation Report
And
Sediment Quality Evaluation

M-12/M-14 Landfill Site

U. S. Army Installation Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works



October 15, 2003

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, Pennsylvania 19044

Contract No. DACA51-00-D-0004
Delivery Order No. 17

United States Army
Fort Monmouth, New Jersey

Remedial Investigation Report And Sediment Quality Evaluation for the M-12/M-14 Landfill Site

Fort Monmouth, New Jersey

January 26, 2004

REMEDIAL INVESTIGATION REPORT AND SEDIMENT QUALITY EVALUATION FOR THE M-12/M-14 LANDFILL SITE FORT MONMOUTH, NEW JERSEY



PREPARED FOR:

UNITED STATES ARMY FORT MONMOUTH
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

PREPARED BY:



201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044

January 26, 2004

VERSAR PROJECT NO. 4936.117

TABLE OF CONTENTS

EXECUTIVE SUMMARY iii

1.0 INTRODUCTION 1

1.1 Objectives 1
1.2 Report Organization 1

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING 2

2.1 Site Location and Description 2
2.2 Site Background 2
2.3 Current Conditions 3
2.4 Environmental Setting 3
2.4.1 Regional Geology 4
2.4.2 Regional Hydrogeology 5
2.4.3 Local Geology/Hydrogeology 6
2.4.4 Soils 6
2.4.5 Topography and Surface Drainage 7

3.0 SEDIMENT SAMPLING ACTIVITIES 8

4.0 SITE CHEMICAL CHARACTERIZATION 9

4.1 Chemical Characterization 9
4.2 QA/QC 11

5.0 CONCLUSIONS 12

6.0 REFERENCES 13

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Site Layout
Figure 2-3 Locations of Landfill Sites on the Main Post
Figure 2-4 Geologic Map of New Jersey
Figure 2-5 Soils Map of Monmouth County
Figure 3-1 M-12/M-14 Boring Location Map

TABLES

Table 3-1 Sediment Sample Summary
Table 4-1 PCB Sample Results Summary

APPENDICES

Appendix A	Site Photographic Log
Appendix B	Sediment Sampling Plan for Nine Former Landfill Sites (TVS, March 2000)
Appendix C	Boring Logs
Appendix D	Sediment Sampling Laboratory Data Sheets

EXECUTIVE SUMMARY

VERSAR, Inc. (VERSAR) has been contracted by the United States (U.S.) Army Installation, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey, to prepare a Remedial Investigation Report (RIR) for data collected during recent sediment sampling events at the M-12/M-14 Landfill Sites (Site). This report describes the remedial investigation activities conducted at the Site on April 10, 2000.

The Site is located on the Main Post Area of Fort Monmouth on the north and south side of Husky Brook, west of Murphy Drive, and occupies approximately 9.0 acres. The Site is comprised of both the M-12 and the M-14 landfills. The M-12 landfill consists of two separate areas, a northeast area and a southwest area. According to the Roy F. Weston (WESTON) report, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report (December 1995)*, both landfills were historically used for the disposal of domestic and industrial wastes. In the 1995 Site Investigation (SI), WESTON conducted a geophysical survey, groundwater sampling and tidal monitoring at each landfill. In addition, surface water samples were obtained from the portion of Husky Brook that is adjacent to the M-14 landfill. WESTON recommended that a long-term groundwater monitoring program be developed and implemented at the M-12 and M-14, but provided no recommendations related to Site-specific sediment quality. A long-term surface water monitoring program was also recommended for M-14.

Other studies conducted at similar Main Post Landfill sites (M-2 and M-8) found polychlorinated biphenyl (PCB) -containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both the M-2 and M-8 Landfill sites. Therefore, assuming that other landfills on the Main Post had received similar waste materials, the DPW initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments in creeks and/or brooks running adjacent to the Main Post and Charles Wood (CW-3A only) landfill sites. The M-12/M-14 Landfill Site was included in the sediment sampling program to supplement the WESTON findings related to soil, surface water and groundwater matrices.

To determine potential PCB-related impacts to sediments in Husky Brook, the DPW obtained 25 sediment samples on April 10, 2000, including two duplicate samples for quality assurance/quality control (QA/QC), from the surface and near-surface sediments of Husky Brook. The samples were obtained along the 1,700-foot portion of Husky Brook that flows through the M-12/M-14 Site. All 25 sediment samples were analyzed for PCBs and compared to the sediment sampling guidance concentrations defined in the New Jersey Department of Environmental Protection (NJDEP) *Guidance for Sediment Quality Evaluations (November 1998).* The analytical data is summarized in table form in this RIR. VERSAR developed this RIR based on the evaluation of these sediment data.

Data presented in Section 3.0 of this RIR indicate that there was one anomalous detection of PCBs in a duplicate sample but that no PCBs were detected in any of the 25 samples obtained from Husky Brook. Based on NJDEP guidance criteria, the results indicate that there are no PCB-related impacts to sediments in Husky Brook, which flows through the M-12/M-14 Landfill Site.

Based on the results of this sediment quality evaluation, no PCBs were detected above the NJDEP guidance criteria for sediment quality in any sample, and no potential exists for long-term adverse benthic effects in Husky Brook associated with the M-12/M-14 Landfill Site. Therefore, No Further Action is recommended for the M-12/M-14 Landfill Site related to potential PCB impacts to the sediments of Husky Brook.

1.0 INTRODUCTION

VERSAR has been contracted by the U.S. Army Installation, Fort Monmouth, DPW, Fort Monmouth, New Jersey to prepare an RIR and sediment quality evaluation for the Site located at the Fort Monmouth Main Post Area. This report addresses the remedial investigation activities performed at the Site on April 10, 2000.

1.1 Objectives

Other studies conducted at similar Main Post Landfill sites (M-2 and M-8) found PCB-containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both the M-2 and M-8 Landfill sites. Therefore, assuming that other landfills on the Main Post had received similar waste materials, the DPW initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments in creeks and/or brooks running adjacent to the Main Post and Charles Wood (CW-3A only) landfill sites. The M-12/M-14 Landfill Site was included in the sediment sampling program to supplement the earlier WESTON findings related to the soil, surface water and groundwater matrices.

The objective of this RIR is to determine potential PCB-related impacts to stream sediments in Husky Brook, which flows through the M-12/M-14 Landfill Site. The remedial investigation was conducted in accordance with New Jersey Administrative Code (NJAC) 7:26E - *Technical Requirements for Site Remediation* (February 2003) and NJDEP *Guidance for Sediment Quality Evaluations* (November 1998).

The remedial investigation encompassed the following:

- Obtaining surface and near-surface sediment samples approximately every 100 feet along the bottom of Husky Brook, which flows through the M-12/M-14 Landfill Site.
- Analyzing the samples for PCBs by United States Environmental Protection Agency (USEPA) Method 8082.
- Comparing the analytical results to the screening level criteria defined in the NJDEP *Guidance for Sediment Quality Evaluations* (November 1998).

1.2 Report Organization

This report is organized to minimize repetition. **Section 2.0** provides background information and a general description of the M-12/M-14 Landfill Site located at the Fort Monmouth Main Post area. **Section 3.0** describes and summarizes the sampling procedure and activities. **Section 4.0** presents analytical results and compares those results with NJDEP guidance criteria. **Section 5.0** provides a summary of the findings of the remedial investigation, and requests a No Further Action determination from the NJDEP.

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING

The following sections describe the Site background and environmental setting of the area surrounding Fort Monmouth and the M-12/M-14 Landfill Site. Included is a description of the Site location, background, current conditions and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Creek, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WWI) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

The M-12/M-14 Landfill Site is located on the north and south sides of Husky Brook, west of Murphy Drive, in the Main Post Area (**Figure 2-2**). The approximate area of the M-12/M-14 Landfill Site is 389,300 feet^2 (9.0 acres). The M-12 landfill consists of two areas, a northeast area and a southwest area. Husky Brook flows along the northern boundary of the M-14 landfill and eventually between both the M-12 and M-14 landfills, for a distance of approximately 1,700 feet. It ultimately flows into Oceanport Creek. The bank of Husky Brook contains trees, bramble and small vegetation upstream and large rocks downstream. Portions of Husky Brook have been repaired/restored as part of a streambank Landfill project.

The various Landfill Sites on the Main Post are identified on **Figure 2-3**. The map is provided to identify:

- the relative location of each of the former landfill sites due to the similarity of past site uses, the types debris deposited at these locations, and the nature of the contaminants identified in soil, groundwater and/or sediment samples during the present and former investigations; and
- the proximity and interrelatedness of the adjacent surface water bodies.

2.2 Site Background

The WESTON report, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report* (December 1995), summarized surface

water sampling events that have been conducted since February 1986 for samples collected in Husky Brook. These sampling events were part of a former New Jersey Pollutant Discharge Elimination System (NJPDES) Permit and were obtained in that portion of Husky Brook that flows along the northern border of the M-14 landfill. From these sampling events, a report prepared by WESTON in 1993 (*Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*) indicates that no compounds were detected above NJDEP surface-water criteria.

The WESTON SI Report (WESTON, 1995) summarizes the results of a geophysical survey for determining landfill boundaries, groundwater sampling and tidal monitoring. In addition, surface-water samples were obtained in that portion of Husky Brook flowing along the northern boundary of the M-14 landfill. The surface water samples were sampled for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, PCBs and TAL metals. According to the WESTON SI report, VOCs, SVOCs, pesticides and PCBs were not detected above laboratory method detection limits (MDLs) in the samples. For the TAL metals analysis, no metals were detected at concentrations above NJDEP surface water criteria. The WESTON SI report recommended the implementation of a long-term groundwater monitoring program due to the historical Site use as a landfill. The present investigation was undertaken to further expand the WESTON SI report and assess the potential PCB-related impacts to stream sediments based on past Site use.

2.3 Current Conditions

VERSAR conducted a site walk on December 11, 2000 to assess current conditions at the M-12/M-14 Landfill Site. The M-12 site consists of two areas separated by a tributary to Husky Brook, which is bounded by trees and shrubs. The western M-12 area was recently backfilled and graded with black fill material. There was no vegetation present at the time of the Site walk, with the exception of areas along Husky Brook on the north side of the site, which was bounded with trees. The eastern portion of the M-12 site was an open field of grass.

M-14, located on the north side of Husky Brook, consists of an open field with some trees. This area was landscaped, with the grass cut and the trees pruned. On the eastern side of the Site is a playground. Site photographs are provided in **Appendix A**.

2.4 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding the M-12/M-14 Landfill Site. Included is a description of the regional geology and hydrogeology of the area surrounding Fort Monmouth, as well as descriptions of the local geology and hydrogeology of the M-12/M-14 area.

2.4.1 Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-12/M-14 Landfill Site is located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 2-4**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown and Navesink Formations). The individual thickness for these units varies greatly (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line (e.g., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post Area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard, 1969).

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown, fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County (Jablonski, 1968).

2.4.2 Regional Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank and Tinton Sands) is dominated by aluminum, calcium, magnesium, manganese and iron. The sediments in the area of Fort Monmouth were deposited in fluvia-deltaic to nearshore environments.

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation.

Well records indicate that wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm). Water in these upper hydrogeologic units is typically encountered at shallow depths below ground surface (2 to 9 feet bgs). However, domestic wells are generally screened deeper in these upper hydrogeologic units. The shallow water table conditions in the Tinton and Red Bank Sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Water in this water-table aquifer flows east toward the Atlantic Ocean. Local topography tends to deflect the flow toward local depressions.

As stated in the SI Report (WESTON, 1995), NJAC 7:9-6, *Groundwater Quality Standards* (GWQS) establishes groundwater quality criteria for different classes of groundwater. Class II-A, which is defined as all groundwater that is not classified as one of the other special classes, is the appropriate class for groundwater at Fort Monmouth. The primary designated use for Class II-A groundwater is potable water; secondary uses include agricultural and industrial water.

Shallow groundwater is locally influenced within the Main Post Area by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries)
- Topography
- Nature of the fill material within the Main Post Area
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (e.g., streams, lakes)

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. The groundwater

flow in the vicinity of the M-12/M-14 Landfill Site is assumed to be to the north for the M-12 landfill, in the direction of Husky Brook, and south for the M-14 landfill, also towards Husky Brook.

2.4.3 Local Geology/Hydrogeology

As presented in the WESTON SI, the field logs from monitoring well installations indicate that the lithology at M-12/M-14 consists of a thin soil cover (0.3 feet) underlain by fill material. The components of the fill materials observed in the borings consisted of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay. Groundwater saturation was observed at approximately 2 feet bgs across the site. Water-level elevation data collected during the WESTON SI indicate that local groundwater flow is west toward Husky Brook.

2.4.4 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey, the majority of the Main Post area is covered by urban land (**Figure 2-5**). The soil survey described urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post Area:

- DoB Downer sandy loam (with 2 to 5 percent slopes);
- FrB Freehold sandy loam (with 2 to 5 percent slopes);
- FUB Freehold sandy loam/urban land complex (with 0 to 10 percent slopes);
- HV Humaquepts, frequently flooded;
- KvA Kresson loam (with 0 to 5 percent slopes);
- UA Udorthents, smoothed; and
- UD Udorthents – urban land complex (with 0 to 3 percent slopes).

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are 1 to 10 percent glauconite and are found on uplands. The Humaquepts soils are somewhat poorly- to very poorly- drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately, well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and

glass. The soils in the vicinity of the M-12/M-14 Landfill Site are classified as UA to UD, Udorthents, smoothed to Udorthents, urban land complex.

2.4.5 Topography and Surface Drainage

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. The M-12/M-14 Landfill Site is located on the floodplain of Husky Brook. The USGS topographic map (**Figure 2-1**) shows that the land surface of the Site is relatively flat at an elevation of less than 20 feet above mean sea level (amsl).

Surface water bodies from the western part of the Main Post flows into the Lafetra Creek to the north or into the Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Mill Creek is channelized and flows past the north side of the M-2 Landfill. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers and Oceanport Creeks are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

3.0 SEDIMENT SAMPLING ACTIVITIES

Fort Monmouth DPW conducted sediment sampling in Husky Brook to evaluate potential PCB-related impacts to stream sediments associated with the M-12/M-14 Landfill Site. On April 10, 2000, 11 borings were installed approximately every 100 feet along the bottom of Husky Brook, as shown in **Figure 3-1: M-12/M-14 Boring Location Map.** The locations extended from downstream at Boring B-1 near Murphy Drive to upstream at Boring B-11, and were sampled accordingly in that order (see chain-of-custody records, **Appendix D**). The sediment sampling was conducted in accordance with the *Installation Restoration Program Sediment Sampling Plan for Nine Former Landfill Sites* (TVS, March 2000) presented in **Appendix B**. The Sediment Sampling Plan (SSP) was approved by the NJDEP on April 3, 2000.

Twenty-five sediment samples were collected, including two duplicate samples for QA/QC, from 11 borings using a Wildco Sediment Sampler. The samples were obtained along the 1,700-foot portion of Husky Brook that flows through the Site. Sample depths ranged from surface (0 to 6 inches) to near-surface (6 inches to 12 inches below grade) at each boring location, with the exception of Borings B-1, B-4 and B-6, which were also sampled at a depth of 18 inches to 24 inches below grade. The samples consisted of black to brown fine sandy silt to green/black clay and sandy clay with black bands, some organic material and small angulars. Boring logs are provided in **Appendix C**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the SSP. The sediment samples were collected using a Wildco Sampler and immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the Fort Monmouth Environmental Testing Laboratory (FMETL), New Jersey Certification Number NJDEP 13461, under proper chain-of-custody procedures. The samples were analyzed by FMETL on April 10, 2000 for PCBs utilizing USEPA Method 8082. Copies of the chain-of-custody for the laboratory analysis can be found in **Appendix D**. A summary of the borings, including sample IDs, sample collection date/time, sample depths, northing/easting coordinates, analysis and general soil descriptions is provided in **Table 3-1: Sediment Sample Summary**.

4.0 SITE CHEMICAL CHARACTERIZATION

On April 10, 2000, DPW collected 25 sediment samples along the bottom of Husky Brook to evaluate potential PCB-related impacts to stream sediments from the adjacent M-12/M-14 Landfill Site. Eleven borings were installed at the approximate rate of one per 100 feet along the bottom of the brook. Twenty-five samples were collected from 11 borings at depths ranging from surface (0 to 6 inches) to near-surface (6 inches to 12 inches below grade) at each boring location with the exception of Borings B-1, B-4 and B-6, which were also sampled at a depth of 18 inches to 24 inches below grade. Samples were identified in the field using the following nomenclature: M-12 M-14/1 0-6", M-12 M-14/1 6"-12" to M-12 M-14/11 0-6", M-12 M-14/11 6"-12". The samples were analyzed for PCBs utilizing USEPA Method 8082.

4.1 Chemical Characterization

The sediment laboratory analytical data were compared to the established screening level criteria, as presented in the *NJDEP Guidance for Sediment Quality Evaluations* (November 1998). This evaluation included at least two samples from each boring to assess the sampling data and to identify potential contaminants of concern. For marine/estuarine sediment screenings, the guidelines define two guidance concentrations for Total PCBs, an Effects Range-Low (ER-L) and an Effects Range-Medium (ER-M). The ER-L (0.023 mg/kg Total PCBs) represents the concentration at which adverse benthic effects are found in approximately 10% of studies. The ER-M (0.180 mg/kg Total PCBs) represents the concentration at which a greater than 50% incidence of adverse effects to sensitive species and/or life stages is likely to occur. The ER-L and ER-M are not regulatory cleanup standards. An exceedence indicates a potential risk to the benthic community and helps determine the need for further investigations (e.g., toxicity testing, tissue bioassays, etc.). However, an exceedence of the ER-L/ER-M criteria does not necessarily mandate further investigations if the sediments proximal to the Site have similar contaminant concentration ranges to upgradient sediments. As stated previously, the samples were collected beginning with the downstream location (B-1) and proceeding to the upstream location (B-11). Therefore, the upgradient sediments are most closely represented by the laboratory data for location B-11 (see **Table 4-1**). No PCBs were detected in sediment samples collected at this location.

Based on the *NJDEP Guidance for Sediment Quality Evaluations* (November 1998), the Lowest Effects Levels (LEL) and the Severe Effects Levels (SEL) are to be used as guidelines for individual Arochlors. Arochlor 1254 is the only Arochlor found at the Landfill Sites shown on **Figure 2-3**. The LEL indicates concentrations at which adverse benthic impacts may begin to occur (level tolerated by most benthic organisms). The SEL is a contamination level that indicates severe impacts to the benthic community in most cases studied. Both the LEL and the SEL are derived from freshwater sediment screening criteria; however, they are used in conjunction with the marine/estuarine ER-L and ER-M values for screening purposes. The ER-L and ER-M apply to Total PCBs, whereas the LEL and SEL can be used for screening purposes for individual Arochlors.

In the case of non-polar organic compounds, such as PCBs, it may be necessary to modify the SEL to create a Site-specific SEL (SSEL) based on the Total Organic Carbon (TOC) fraction present in the sample. The TOC fraction is used to determine if the samples were collected in depositional zones, evidenced by a higher percentage of fine-grained particles. Depositional zones are generally the areas of highest potential contamination and are targeted during Site sampling events. To calculate a SSEL, the SEL is multiplied by the TOC fraction. If the TOC of the samples is not measured during sampling, as is the case at the M-12/M-14 Site, a default value of 1% is used. In this instance, each SEL is multiplied by 0.01 to derive the SSEL for comparison purposes. At M-12/M-14, no Arochlors were detected. However, at other Fort Monmouth Landfill Sites, the only Arochlor detected in the sediments was Arochlor 1254. The LEL, SEL and SSEL for Arochlor 1254 are shown below.

Polychlorinated Biphenyl	LEL (mg/kg, dry weight)	SEL (mg/kg organic carbon, dry weight)	SSEL (mg/kg)
Arochlor 1254	0.060	34	0.34

mg/kg=milligrams per kilogram

The USEPA, Region II, and the NJDEP Bureau of Environmental Evaluation and Risk Assessment/Environmental Toxicology and Risk Assessment (BEERA/ETRA) have discontinued the SSEL approach for general screening purposes except in cases of borderline screening exceedances and/or a weight of professional evidence suggesting that the SSEL is appropriate. The SSEL approach is discussed here for completeness, but was not otherwise used to formulate Site-related environmental risk decisions or conclusions.

The results of the PCB laboratory analysis indicated one detection above the laboratory MDL in the duplicate sample of M12M14/9 0-6". This detection is likely to be an anomalous result because PCBs were not detected in M12M14/9 0-6". Additionally, the result appears to be an isolated occurrence because no other upgradient landfill sites (M-3, M-4 and M-5) have presented similar PCB exceedances.

This sample result exceeds both the NJDEP Effects Range – Low (ER-L) and Effects Range – Medium (ER-M) guidance concentrations for Total PCBs (0.023 mg/kg and 0.180 mg/kg, respectively). The ER-L and ER-M represent the concentrations at which adverse benthic effects are found in approximately 10% and 50% of studies, respectively. This sample also exceeds the Arochlor 1254 (the only Arochlor detected at the Site) LEL of 0.060 mg/kg, the concentration at which adverse benthic impacts may begin to occur (the level tolerated by most benthic organisms). The PCB detection did not exceed the SSEL for Arochlor 1254 (0.34 mg/kg). As such, this result, if not anomalous, is unlikely to result in long-term adverse benthic effects in Husky Brook.

Due to the presence of only one potentially anomalous result that did not exceed the SSEL for Arochlor 1254, no potential exists for long-term adverse benthic effects in Husky Brook associated with the M-12/M-14 Landfill Site.

The sample results are summarized in **Table 4-1: PCB Sample Results Summary – M-12/M-14 Landfill Site**. The laboratory data sheets are available in **Appendix D**.

4.2 QA/QC

In order to verify the reliability of the analytical results, Versar reviewed the holding times for each sample and the results of the analysis of two field duplicate samples. All samples were analyzed by the FMETL within the prescribed holding time requirements for each analytical method.

Two field duplicate samples were collected during the Site sampling events to verify the consistency of the entire sampling and analysis procedure. The results for the two duplicate samples were close to those obtained for the original samples. The relative percent difference (RPD) was calculated for each duplicate sample. The RPD measures variability introduced by both the laboratory and field operations. The RPD for the duplicate samples was 175.6%. This RPD exceeds the established limit of 50% for laboratory duplicate samples. However, this is due to low sample concentrations and a correspondingly low MDL used by the laboratory and is not indicative of poor precision because the differences noted may be attributed to analytical sensitivity. Also, the comparison of one very small number with another very small number will result in a high RPD.

5.0 CONCLUSIONS

Based on the results of this sediment quality evaluation, no PCBs were detected above the NJDEP guidance criteria for sediment quality in any sample, and no potential exists for long-term adverse benthic effects in Husky Brook associated with the M-12/M-14 Landfill Site. Therefore, No Further Action is recommended for the M-12/M-14 Landfill Site related to potential PCB impacts to the sediments of Husky Brook.

6.0 REFERENCES

Fort Monmouth Environmental Testing Laboratory (FMETL), *Analytical Data Package – Stream Sediments – M3 Landfill*, April 19, 2000

Jablonski, L.A., 1968. *Groundwater Resources of Monmouth County, New Jersey. USGS Special Report 23*. USGS, Washington, DC.

Meisler, H., J.A. Miller, L.L. Knobel, and R.L. Wait. 1988. "Region 22, Atlantic and Eastern Gulf Coastal Plan." *In: Hydrogeology: The Geology of North America*, W. Back, J.S. Rosenhein, and P.R. Seaber, editors. Vol. 0-2. pp. 209-218.

Minard, J.P., 1969. Geology of Sandy Hook Quadrangle in Monmouth County, New Jersey. U.S. Government Printing Office, Washington, DC.

New Jersey Administrative Code (NJAC) 7:26E - *Technical Requirements for Site Remediation.*

New Jersey Department of Environmental Protection - *NJDEP Guidance for Sediment Quality Evaluations (November 1998)*.

New Jersey Geological Survey Map, 1994.

TVS (TECOM-Vinnell Services), 2000. *SITE INVESTIGATION PLAN – Installation Restoration Program Sediment Sampling Plan for Nine Former Landfill Sites*.

USGS (U.S. Geological Survey), 1981. Long Branch Quadrangle Map.

VERSAR, Inc. (VERSAR), September 8, 1999. Subject: *Indefinite Quantity Delivery Contract No. DACA51-98-D0006, Fort Monmouth, Contract Support Services Relating to the Development of Four Remedial Action Reports*.

WESTON (Roy F. Weston, Inc.), 1993. *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*.

WESTON (Roy F. Weston, Inc.), 1995. *Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, December 1995.

Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURES

THIS
PAGE
INTENTIONALLY
REMOVED



ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
BASE BOUNDARY		MARSHY AREA	

NOTES:

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 2-2
M-12/M-14 LANDFILL SITE
SITE LAYOUT
FORT MONMOUTH, NEW JERSEY

DRAWN BY: JMM	DATE DRAWN: 23 DEC 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
Versar INC. 2558 PEARL BUCK ROAD, SUITE 1 BRISTOL, PA 19007 (215) 788-7844	DRAWING No.: M-12/M-14 FIG 2-2
	FILE No.: M-12/M-14 FIG. 2-2
	SCALE: 1" = 100'
	SHEET OF REV.: A

THIS
PAGE
INTENTIONALLY
REMOVED

Geologic Map of New Jersey

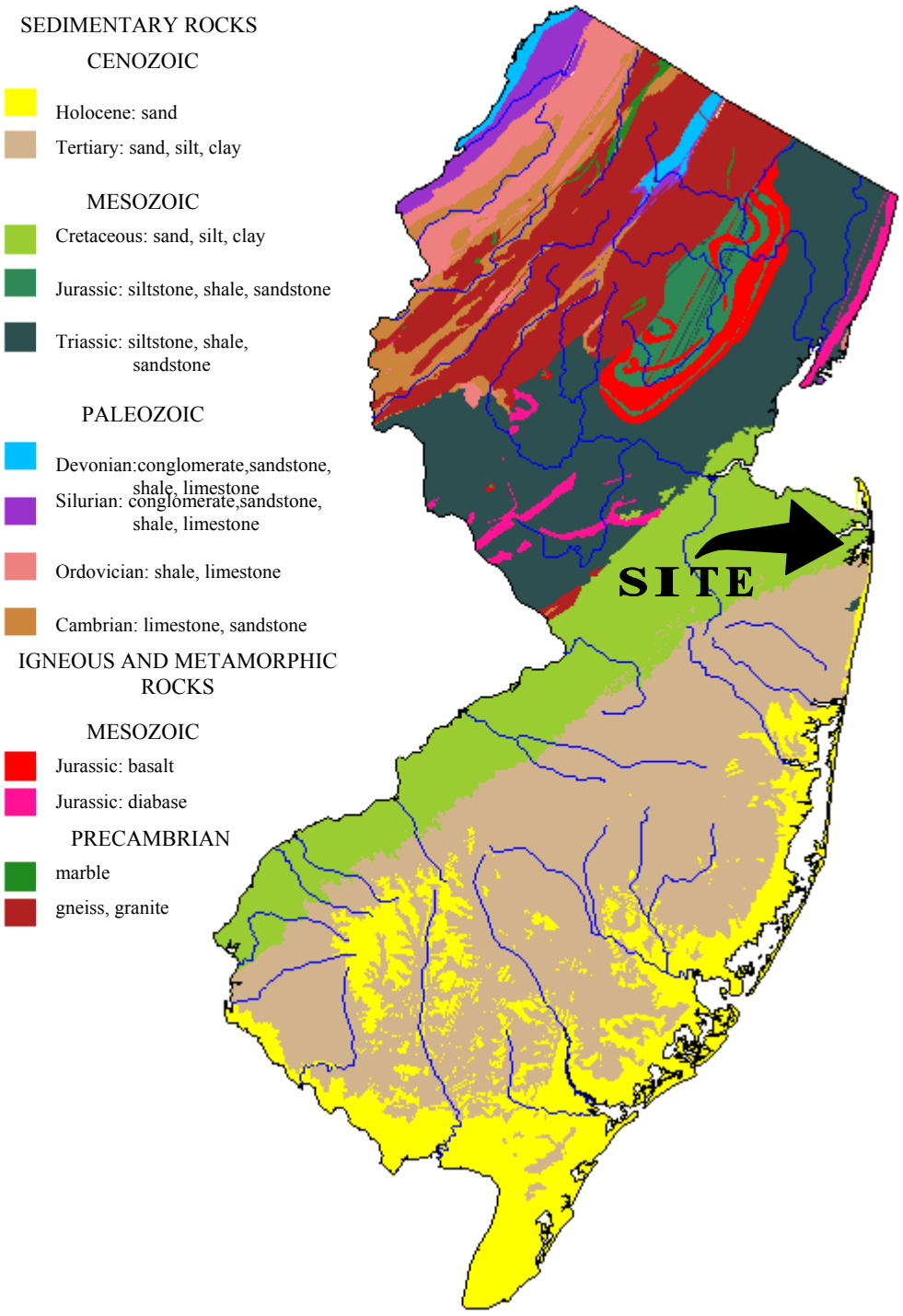
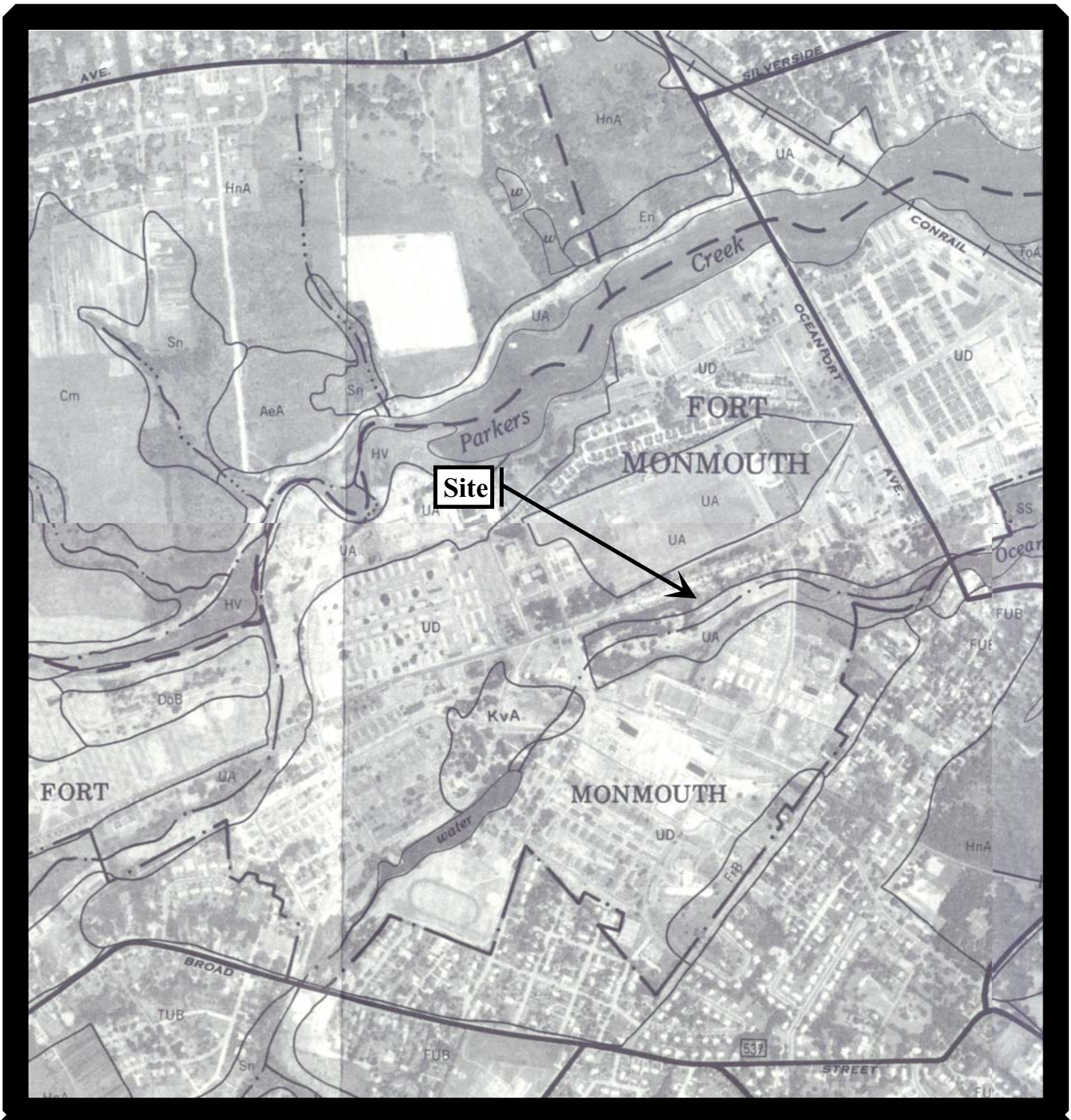


FIGURE 2-4
Geological Map of New Jersey
M-12/M-14 Landfill Site
Fort Monmouth, New Jersey

Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, Pennsylvania, 19007
(215)-788-7844



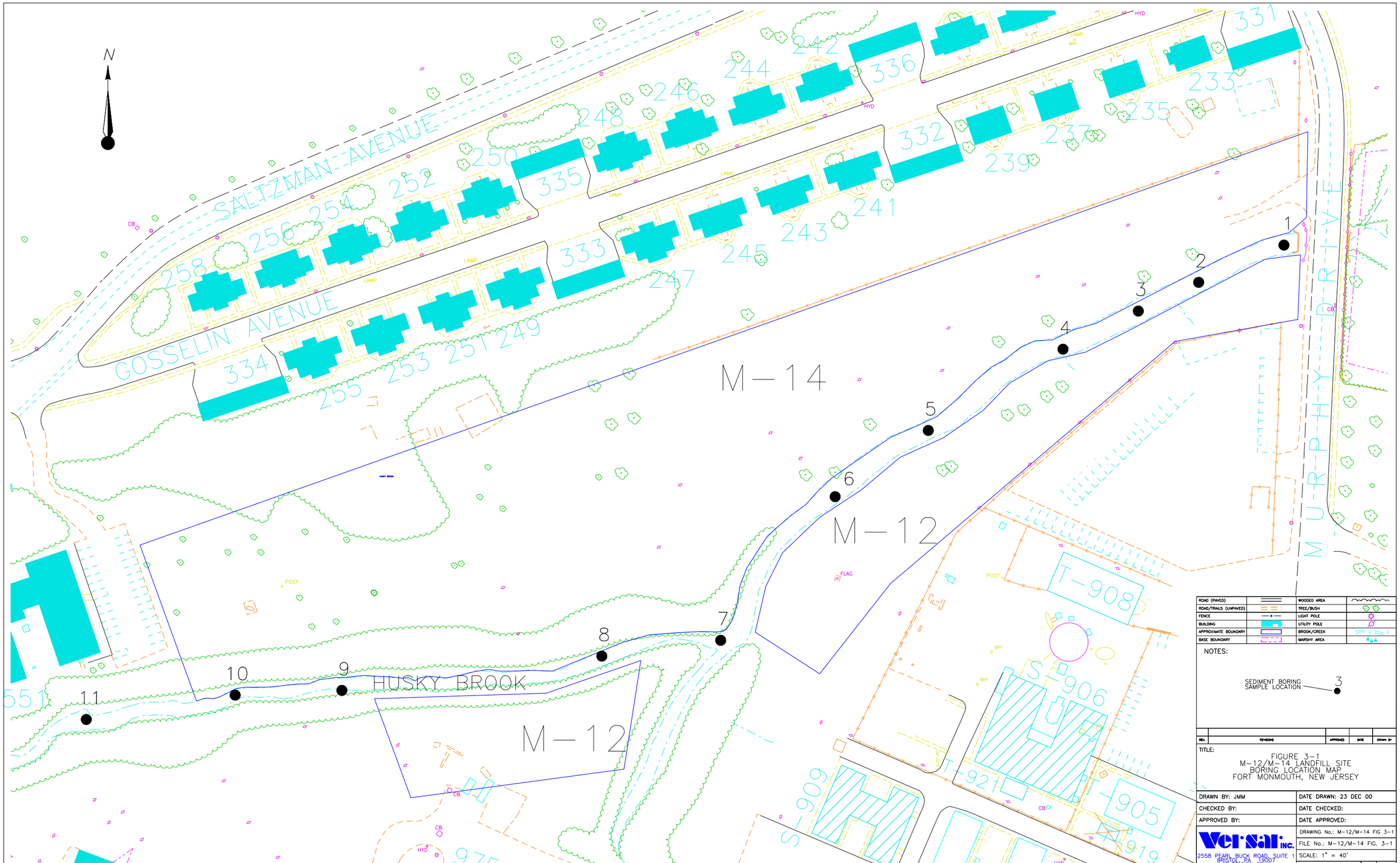
Fort Monmouth
M-12/M-14 Landfill Site

FIGURE 2-5

Soil Map of Monmouth County, New Jersey

US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

Versar INC.


N
SALTZMAN AVENUE
GOSSELIN AVENUE
M-14
M-12
M-12
HUSKY BROOK
MURPHY DRIVE
1
2
3
4
5
6
7
8
9
10
11
331
233
235
237
239
241
243
245
247
249
251
253
255
334
333
335
250
252
254
256
258
248
246
244
242
336
332
T-908
S-906
T-905
T-921
S-909
919
975
551
POST
FLAG
HYD
LAMP
MH
CB
ROAD (PAVED)
ROAD/TRAILS (UNPAVED)
FENCE
BUILDING
APPROXIMATE BOUNDARY
BASE BOUNDARY
WOODED AREA
TREE/BUSH
LIGHT POLE
UTILITY POLE
BROOK/CREEK
MARSHY AREA
NOTES:
SEDIMENT BORING SAMPLE LOCATION
3
REV.
REVISIONS
APPROVED
DATE
DRAWN BY
TITLE:
FIGURE 3-1
M-12/M-14 LANDFILL SITE
BORING LOCATION MAP
FORT MONMOUTH, NEW JERSEY
DRAWN BY: JMM
DATE DRAWN: 23 DEC 00
CHECKED BY:
DATE CHECKED:
APPROVED BY:
DATE APPROVED:
DRAWING No.: M-12/M-14 FIG 3-1
FILE No.: M-12/M-14 FIG. 3-1
SCALE: 1" = 40'
SHEET OF
REV.: A
Versar INC.
2558 PEARL BUCK ROAD, SUITE 1
BRISTOL, PA 19007
(215) 788-7844

TABLES

Table 3-1
M-12/M-14 Landfill Site
Sediment Sample Summary

Boring ID	Sample Depth (in bgs)[1]	Field Sample Location ID	Laboratory Sample ID	Date Collected	Time Collected	Coordinates Northing	Coordinates Easting	Analysis	General Soil Description
B-1	0-6"	M12M14/ 1 0-6"	**5324.01**	4/10/2000	1026	539716.273	621424.35	PCBs[2] (SW-846 Method 8082)	Black Fine Silty Sand w/Small Angulars & Some Organic Material
	6"-12"	M12M14/ 1 6-12"	**5324.02**	4/10/2000	1028				
	18"-24"	M12M14/ 1 18-24"	**5324.03**	4/10/2000	1030				
B-2	0-6"	M12M14/ 2 0-6"	**5324.04**	4/10/2000	1035	539673.409	621326.374	PCBs (SW-846 Method 8082)	Black Fine Sandy Silt w/Some Organic Material
	6"-12"	M12M14/ 2 6-12"	**5324.05**	4/10/2000	1038				
B-3	0-6"	M12M14/ 3 0-6"	**5324.06**	4/10/2000	1043	539640.457	621257.069	PCBs (SW-846 Method 8082)	Dark Brown to Black Fine Sandy Silt
	6"-12"	M12M14/ 3 6-12"	**5324.07**	4/10/2000	1045				
B-4	0-6"	M12M14/ 4 0-6"	**5324.08**	4/10/2000	1048	539596.634	621170.467	PCBs (SW-846 Method 8082)	Black, Fine Sandy Silt
	6"-12"	M12M14/ 4 6-12"	**5324.09**	4/10/2000	1050				
	18"-24"	M12M14/ 4 18-24"	**5324.10**	4/10/2000	1052				
B-5	0-6"	M12M14/ 5 0-6"	**5324.11**	4/10/2000	1100	539503.198	621015.723	PCBs (SW-846 Method 8082)	Black, Fine Sandy Silt
	6"-12"	M12M14/ 5 6-12"	**5324.12**	4/10/2000	1104				
B-6	0-6"	M12M14/ 6 0-6"	**5324.13**	4/10/2000	1114	539427.065	620908.660	PCBs (SW-846 Method 8082)	Brown Fine Sand to Green Clay and Green/Black Sandy Clay to Fine, Black Sandy Silt
	6"-12"	M12M14/ 6 6-12"	**5324.14**	4/10/2000	1116				
	18"-24"	M12M14/ 6 18-24"	**5324.15**	4/10/2000	1118				
B-7	0-6"	M12M14/ 7 0-6"	**5324.16**	4/10/2000	1121	539261.96[3]	620777.203[3]	PCBs (SW-846 Method 8082)	Brown w/Black Bands Fine Sand
	6"-12"	M12M14/ 7 6-12"	**5324.17**	4/10/2000	1123				
B-8	0-6"	M12M14/ 8 0-6"	**5324.18**	4/10/2000	1125	539243.786	620640.559	PCBs (SW-846 Method 8082)	Brown Fine Sand to Fine, Brown w/Black Bands Clayey Sand w/Some Organic Material
	6"-12"	M12M14/ 8 6-12"	**5324.19**	4/10/2000	1127				
B-9	0-6"	M12M14/ 9 0-6"	**5324.20**	4/10/2000	1144	539204.359	620341.923	PCBs (SW-846 Method 8082)	Black, Fine Sand w/Some Organic Material to Brown, Fine Sand
	6"-12"	M12M14/ 9 6-12"	**5324.21**	4/10/2000	1146				
B-10	0-6"	M12M14/ 10 0-6"	**5324.22**	4/10/2000	1154	539198.962	620219.296	PCBs (SW-846 Method 8082)	Fine, Brown Sand to Green w/Black Sand Bands Clay
	6"-12"	M12M14/ 10 6-12"	**5324.23**	4/10/2000	1156				
B-11	0-6"	M12M14/ 11 0-6"	**5324.24**	4/10/2000	1158	539170.975	620048.219	PCBs (SW-846 Method 8082)	Fine, Brown Sand to Green w/Black Sand Bands Clay
	6"-12"	M12M14/ 11 6-12"	**5324.25**	4/10/2000	1200				

[1] bgs = below ground surface
[2] PCBs = Polychlorinated Biphenyls
[3] At Convergence

Table 4-1
PCB Sample Results Summary
M-12/M-14 Landfill Site

Boring ID	Sample Depth (bgs)	Field Sample Location ID	Laboratory Sample ID	Date Collected	Analytical Results[5]	MDL[6]
Total PCBs ER-L[1]					**0.023**	
Total PCBs ER-M[2]					**0.180**	
Arochlor 1254 LEL[3]					**0.060**	
Arochlor 1254 SEL[4]					**34**	
B-1	0-6"	M12M14/ 1 0-6"	5324.01	4/10/2000	ND	0.0224
	6"-12"	M12M14/ 1 6-12"	5324.02	4/10/2000	ND	0.0268
	18"-24"	M12M14/ 1 18-24"	5324.03	4/10/2000	ND	0.0196
B-2	0-6"	M12M14/ 2 0-6"	5324.04	4/10/2000	ND	0.0236
	6"-12"	M12M14/ 2 6-12"	5324.05	4/10/2000	ND	0.0202
B-3	0-6"	M12M14/ 3 0-6"	5324.06	4/10/2000	ND	0.0199
	6"-12"	M12M14/ 3 6-12"	5324.07	4/10/2000	ND	0.0211
B-4	0-6"	M12M14/ 4 0-6"	5324.08	4/10/2000	ND	0.0173
	6"-12"	M12M14/ 4 6-12"	5324.09	4/10/2000	ND	0.0187
	18"-24"	M12M14/ 4 18-24"	5324.10	4/10/2000	ND	0.0196
B-5	0-6"	M12M14/ 5 0-6"	5324.11	4/10/2000	ND	0.0200
	6"-12"	M12M14/ 5 6-12"	5324.12	4/10/2000	ND	0.0177
B-6	0-6"	M12M14/ 6 0-6"	5324.13	4/10/2000	ND	0.0177
	6"-12"	M12M14/ 6 6-12"	5324.14	4/10/2000	ND	0.0194
	18"-24"	M12M14/ 6 18-24"	5324.15	4/10/2000	ND	0.0177
B-7	0-6"	M12M14/ 7 0-6"	5324.16	4/10/2000	ND	0.0188
	6"-12"	M12M14/ 7 6-12"	5324.17	4/10/2000	ND	0.0129
B-8	0-6"	M12M14/ 8 0-6"	5324.18	4/10/2000	ND	0.0194
	6"-12"	M12M14/ 8 6-12"	5324.19	4/10/2000	ND	0.0209
B-9	0-6"	M12M14/ 9 0-6"	5324.20	4/10/2000	ND	0.0181
	6"-12"	M12M14/ 9 6-12"	5324.21	4/10/2000	ND	0.0198
B-10	0-6"	M12M14/ 10 0-6"	5324.22	4/10/2000	ND	0.0189
	6"-12"	M12M14/ 10 6-12"	5324.23	4/10/2000	ND	0.0209
B-11	0-6"	M12M14/ 11 0-6"	5324.24	4/10/2000	ND	0.0121
	6"-12"	M12M14/ 11 6-12"	5324.25	4/10/2000	ND	0.0696
Duplicate	0-6"	M12M14/ 9 0-6"	5324.26	4/10/2000	0.279	0.0191
	6"-12"	M12M14/ 9 6-12"	5324.27	4/10/2000	ND	0.0189

Notes:
[1]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (ER-L) - Effects Range-Low
[2]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (ER-M) - Effects Range-Medium
[3]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (LEL) - Lowest Effects Level
[4]NJDEP Guidance For Sediment Quality Evaluations, November 1998 (SEL) - Severe Effects Level
[5]All Results in milligrams per kilogram (mg/kg)
[6]Method Detection Limit (mg/kg) representing Total PCBs
ND = Analyte Not Detected in Sample
Exceedances of the NJDEP Guidances are shaded and printed in **bold-faced** type
PCBs = Polychlorinated Biphenyls
N/A = Not Applicable

APPENDICES

Appendix A

Site Photographic Log

M14 Landfill Site











M12 Landfill Site











Appendix B

Sediment Sampling Plan for Nine Former Landfill Sites (TVS, March 2000)

State of New Jersey
Department of Environmental Protection
Christine Todd Whitman
Governor
Robert C. Shinn, Jr.
Commissioner

Mr. Joseph Fallon
Directorate of Public Works
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, NJ 07703 - 5101

APR 0 3 2000

Re: Sediment Sampling Plan
Sites M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 and CW-3A
Fort Monmouth Main Post/Charles Wood
Tinton Falls, Monmouth County

Dear Mr. Fallon:

The NJDEP has reviewed the March 29, 2000 Sediment sampling plan for the nine former landfill sites referenced above and we accept the plan as submitted.

The referenced document, developed with NJDEP using appropriate technical guidance documents and requirements, is specifically designed to determine if PCBs have impacted adjacent surface waters.

There are a few brief comments which we have previously discussed, but I wanted to note here as a reminder for you in this investigation.

- The NJDEP requires PCB method 8082 to be utilized.
- Approved sample preservation methods must be used if volatile compounds are to be investigated or reported on.
- Some discussion regarding the sediment criteria utilized along with a discussion on the application to the sample location and water body must be provided in the final report.
- Sampling must be performed on downgradient samples first.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager
Bureau of Case Management
ICURTIS@DEP.STATE.NJ.US

FTMMTH65IRC.DOC

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101

REPLY TO
ATTENTION OF

Directorate of Public Works

March 29, 2000

State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street
ATTN: Ian Curtis
P. O. Box 028
Trenton, NJ 08625-0028

Re: Sediment Sampling Plan for Nine Former Landfill Sites
(i.e. M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 & CW-3A)
Main Post and Charles Wood Area, Fort Monmouth, New Jersey

Dear Mr. Curtis:

Submitted for your review and approval, please find a copy of the above referenced sampling plan. Said plan should enable the Directorate of Public Works to ascertain whether polychlorinated biphenyls are present within stream sediments bordering the nine referenced landfills. Future site work will be based upon the findings of this sampling initiative.

Should you have any questions or require any additional information regarding this plan, please contact the undersigned at the following telephone number: (732) 532-6223.

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Environmental Protection Specialist
Directorate of Public Works

Encl.

United States Army
Directorate of Public Works
Fort Monmouth, New Jersey

Installation Restoration Program
Sediment Sampling Plan for
Nine Former Landfill Sites

March 2000

SITE INVESTIGATION PLAN

Installation Restoration Program
Sediment Sampling Plan for Nine Former Landfill Sites

PREPARED FOR:

JOSEPH FALLON
PROJECT MANAGER
Directorate of Public Works
BUILDING 173
FORT MONMOUTH, NJ 07703
(732)-532-6223

PREPARED BY:

TECOM-VINNELL SERVICES (TVS)
ENVIRONMENTAL OFFICE
BUILDING 173
FORT MONMOUTH, NJ 07703

TABLE OF CONTENTS

		Page #
1.0	SAMPLING ACTIVITIES	
1.1	Overview	4
1.2	Site Description	5
1.3	Health and Safety	5
2.0	SITE INVESTIGATION ACTIVITIES	
2.1	Contacts and Personnel	6
2.2	Sampling Procedures and Protocol	6
	2.2.1 Site Activities	7
	2.2.2 Sediment Sampling	7
	2.2.3 QA/QC	8
2.3	Equipment Decontamination	8

1.0 SAMPLING ACTIVITIES

1.1 OVERVIEW

This report provides details for a proposed sediment sampling plan as prepared by TECOM-Vinnell Services (TVS) on the behalf of the U.S. Army Fort Monmouth, Directorate of Public Works (DPW), Fort Monmouth, New Jersey. The purpose of this sampling initiative is to ascertain whether Polychlorinated Biphenyls (PCBs) are present within stream sediments which border nine former landfill sites (i.e. M-2, M-3, M-4, M-5, M-8, M-12, M-14, M-18 and CW-3A). The streams associated with this investigation include Mill Creek, Lafetra Creek, Parkers Creek, Husky Brook, and an unnamed tributary of Wampum Brook (see attachments 1 & 2). The data generated from this study will be used in conjunction with other previously collected data involving surface soils, subsurface soils, ground water and surface water. As part of the larger, ongoing remedial investigation at these nine landfill sites, PCBs were identified within subsurface soils at landfill sites M-2 and M-8. The Final Site Investigation (SI) Report, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas (December 1995) identifies electronic components as one of the waste types being disposed of within the subject landfills. Said components (i.e. electrical ballasts) typically contained small quantities of insulating oil which may or may not have contained PCBs. Based upon the potential presence of electronic components at the other seven landfill sites, PCBs may also exist within subsurface soils at these locations. As part of previously conducted sampling initiatives, the DPW has been able to document that the PCBs identified at sites M-2 and M-8 have not impacted site ground water or surface water. Furthermore, PCBs have not been identified within site ground water or surface water at the other landfill sites. The overall goal of the proposed sampling plan is to document that the presence of PCBs at sites M-2 and M-8 have not impacted the nearby stream sediments.

This investigation will be conducted by TVS personnel in accordance with the specifications required for collecting sediment samples as determined by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May 1992) and the NJDEP Guidance For Sediment Quality Evaluations (November 1998).

1.2 SITE DESCRIPTION

Mill Creek is located along the northern side of the M-2 landfill (approximate distance 1,400 feet) and along the western side of the M-4 landfill (approximate distance 360 feet) and the M-5 landfill (approximate distance 570 feet). Lafetra Creek runs along the northern side of the M-3 landfill (approximate distance 1,200 feet), joining with Mill Creek to form Parkers Creek. Parkers Creek surrounds the M-8 landfill (approximate distance 1,500 feet) on the western, northern, and eastern sides. It then runs along the western side of the M-18 landfill (approximate distance 700 feet). Husky Brook runs along the northern side of the M-12 landfill, eventually running between the M-12 and M-14 landfills (combined approximate distance 1,700 feet) before flowing into Oceanport Creek. An unnamed tributary of Wampum Brook is located along the northern side of the CW-3A landfill (approximate distance 600 feet). Stream banks along the landfills vary from heavily vegetated with trees and bramble to simply grass. A stream bank restoration project is currently underway at the landfill sites located on the Main Post. The project entails stabilizing the stream banks through a combination of hard (rip-rap) and soft (vegetative plantings) engineering practices. All sites vary in steepness and have various access points. The streams flow constantly even in drought conditions and all but the unnamed tributary of Wampum Brook are tidally influenced. Currents and depth vary with tide.

1.3 HEALTH AND SAFETY

Before sampling activities commence, potential site hazards (physical, chemical and biological) will be evaluated by the TVS Health and Safety Office. A site specific Health and Safety Plan shall be prepared accordingly.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 CONTACTS AND PERSONNEL

The following is a listing of all contacts and personnel involved in the investigation. All analyses are to be performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, NJDEP- Certification # 13461. All sampling will be performed under the direct supervision of a NJDEP trained sample technician according to the methods described in the NJDEP Field Sampling Procedures Manual (1992) and as defined in this sampling plan.

The following parties are participants in this investigation:

- Environmental Protection Specialist: Joseph Fallon, CHMM
  Employer: U.S. Army, Fort Monmouth Phone Number: (732) 532-6223
- Field Technician: Corey McCormack
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel Wright - Phone Number: (732) 532-4359
  Employer: TECOM-Vinnell Services
  NJDEP Certification No.: 13461
- Field Technician Supervisor: Mark Laura
  Employer: TECOM-Vinnell Services (TVS) Phone Number: (732) 532-0989
- Health and Safety Personnel: Bruce Wadlington, Chandra Jennings, and John Wierbowski. Employer: TVS - Phone Number: (732) 532-1706

2.2 SAMPLING PROCEDURES AND PROTOCOL

During the investigation, all samples will be collected with proper attention to quality assurance protocols and in accordance with the guidelines set forth by the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (May, 1992), the Technical Requirements for Site Remediation (NJAC 7:26E, June, 1993) and the NJDEP Guidance for Sediment Quality Evaluations (November 1998).

2.2.1 SITE ACTIVITES

Site activities shall include recording field conditions and other relevant observations, sampling sediments, plotting sample locations by usc of our Global Positioning Systcm (GPS), decontamination of equipment, and preservation and storage of samples.

2.2.2 SEDIMENT SAMPLING

Sample locations will be determined, sampled, and recorded in the following way:

1. Samples will be taken from clearly discernable depositional areas in and along the streams. In the event that no clear depositional areas can be located, a sample will be taken from the best possible stream bed point at the rate of 1 sample for every 100 feet.
2. Samples will be taken at a depth of 0-6 inches for surface deposits and 6-12 inches for subsurface deposits in each sampling event. Based upon the individual thickness of each depositional area, an 18-24 inch deep sample will also be taken if the desired depth is obtainable.
3. Sampling will commence from downstream, working upstream. Care will be taken to minimize disturbance of sediments and washing of samples as collected.
4. Tide, weather, recent activity, and notable observations will be recorded.
5. A boring log shall be created to note any layers, particle sizes, and defining aspects to each boring.
6. Sampling will be conducted using a hand core sediment sampler.
7. Samples for PCBs analysis will be collected into new, pre-cleaned, 4oz.clear glass jars with Teflon lined caps. All samples will be stored in a cooler at 4 degrees Celsius.
8. After each sampling event, equipment will be decontaminated as stated in section 2.3.
9. Each sample location will be plotted using our GPS.

2.2.3 QA/QC

Quality control samples are required to verify that the sample collection and handling process has not affected the quality of the sediment samples. All field quality control samples will be prepared exactly as regular investigation samples with regard to volume and containers. The following quality control samples will be collected for each batch of samples:

- Field duplicate daily or one every 20 samples; homogenized before splitting.

2.3 EQUIPMENT DECONTAMINATION

Decontamination will be done after every sampling event by the following procedure:

1. Alconox and water wash
2. Water rinse
3. Deionized water rinse
4. Air dry

Appendix C

Boring Logs

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-1

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON
M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0				
	5324.01	1	SILTY SAND, Fine. Black.	1026
4				
			SILTY SAND, Fine. Black. Some Organic Material.	
8	5324.02	2		1028
12			SILTY SAND, Fine. Black. Sm. Angulars. Black.	
16				
20	5342.03	3		1030
24				

04-21-2000 X:\MTECH5\LANDFI~1\M12M14-1.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-2

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.04	1	SANDY SILT, Fine. Black.	1035
4	5324.05	2	SANDY SILT, Fine. Black. Some Organic Material.	1038
8				
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-2.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-3

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.06	1	SANDY SILT, Fine. Dk. Brown/ Black.	1043
8	5324.07	2	SANDY SILT, Fine. Black.	1045

0
4
8
12
16
20
24

04-18-2000 X:\MTECH5\LANDFI-1\M12M14-3.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-4

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0				
	5324.08	1	SANDY SILT, Fine. Black.	1048
4				
	5324.09	2	SANDY SILT, Fine. Black.	1050
8				
12			SANDY SILT, Fine. Black.	
16				
	5324.10	3		1052
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14~4.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-5

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.11	1	SANDY SILT, Fine. Black.	1100
4	5324.12	2	SANDY SILT, Fine. Black.	1104
8				
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-5.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-6

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Fine. Brown.	
			CLAY. Green.	
	5324.13	1		1114
4				
			SANDY CLAY. Green w/ Black.	
8				
	5324.14	2		1116
			SANDY SILT, Fine. Black.	
12				
16				
20				
	5324.15	3		1118
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-6.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-7

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.16	1	SAND, Fine. Brown.	1121
4				
8	5324.17	2	SAND, Fine. Brown w/ Black Bands.	1123
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-7.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-8

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0			SAND, Fine. Brown.	
4	5324.18	1	CLAYEY SAND, Fine. Brown w/ Black Bands. Some Organic Material.	1125
8	5324.19	2		1127
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-8.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-9

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.20	1	SAND, Fine. Black. Some Organic Material.	1144
4				
8	5324.21	2	SAND, Fine. Brown.	1146
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14~9.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-10

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0	5324.22	1	SAND, Fine. Brown.	1154
4				
8	5324.23	2	CLAY. Green w/ Black SAND Bands	1156
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-N.BOR

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

LOG OF BORING B-11

US ARMY
FT. MONMOUTH N.J.
SELFM-PW-EV
JOSEPH FALLON

M12/M14 Landfill Sediments

DATE COMPLETED : 04/10/00
SAMPLE DEVICE : WILDCO SEDIMENT SAMPLER
SAMPLER : COREY MCCORMACK
CONTRACTOR : TVS-PWS-07 ENV.
LOCATON : M12/M14

Depth in INCHES	Lab No.	Samples	DESCRIPTION	TIME
0				
	5324.24	1	SAND, Fine. Brown.	1158
4				
			CLAY. Green w/ Black SAND Bands	
8	5324.25	2		1200
12				
16				
20				
24				

04-18-2000 X:\MTECH5\LANDFI~1\M12M14-T.EOR

Appendix D

Sediment Sampling Laboratory Data Sheets

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: Stream Sediments

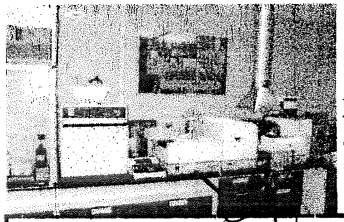
M12/M14 Landfill

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
M12 M14 / 1 0-6"	5324.01	Sediment	10-Apr-00 10:26	04/10/00
M12 M14 / 1 6-12"	5324.02	Sediment	10-Apr-00 10:28	04/10/00
M12 M14 / 1 18-24"	5324.03	Sediment	10-Apr-00 10:30	04/10/00
M12 M14 / 2 0-6"	5324.04	Sediment	10-Apr-00 10:35	04/10/00
M12 M14 / 2 6-12"	5324.05	Sediment	10-Apr-00 10:38	04/10/00
M12 M14 / 3 0-6"	5324.06	Sediment	10-Apr-00 10:43	04/10/00
M12 M14 / 3 6-12"	5324.07	Sediment	10-Apr-00 10:45	04/10/00
M12 M14 / 4 0-6"	5324.08	Sediment	10-Apr-00 10:48	04/10/00
M12 M14 / 4 6-12"	5324.09	Sediment	10-Apr-00 10:50	04/10/00
M12 M14 / 4 18-24"	5324.10	Sediment	10-Apr-00 10:52	04/10/00
M12 M14 / 5 0-6"	5324.11	Sediment	10-Apr-00 11:00	04/10/00
M12 M14 / 5 6-12"	5324.12	Sediment	10-Apr-00 11:04	04/10/00
M12 M14 / 6 0-6"	5324.13	Sediment	10-Apr-00 11:14	04/10/00
M12 M14 / 6 6-12"	5324.14	Sediment	10-Apr-00 11:16	04/10/00
M12 M14 / 6 18-24"	5324.15	Sediment	10-Apr-00 11:18	04/10/00
M12 M14 / 7 0-6"	5324.16	Sediment	10-Apr-00 11:21	04/10/00
M12 M14 / 7 6-12"	5324.17	Sediment	10-Apr-00 11:23	04/10/00
M12 M14 / 8 0-6"	5324.18	Sediment	10-Apr-00 11:25	04/10/00
M12 M14 / 8 6-12"	5324.19	Sediment	10-Apr-00 11:27	04/10/00
M12 M14 / 9 0-6"	5324.20	Sediment	10-Apr-00 11:44	04/10/00
M12 M14 / 9 6-12"	5324.21	Sediment	10-Apr-00 11:46	04/10/00
M12 M14 / 10 0-6"	5324.22	Sediment	10-Apr-00 11:54	04/10/00
M12 M14 / 10 6-12"	5324.23	Sediment	10-Apr-00 11:56	04/10/00
M12 M14 / 11 0-6"	5324.24	Sediment	10-Apr-00 11:58	04/10/00
M12 M14 / 11 6-12"	5324.25	Sediment	10-Apr-00 12:00	04/10/00
DUP. 0-6"	5324.26	Sediment	10-Apr-00	04/10/00
DUP. 6-12"	5324.27	Sediment	10-Apr-00	04/10/00

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
PCB's, %SOLIDS

5-15-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: X2 (0223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: M12/M14 Landfill
Stream Sediments

Samplers Name / Company: Corey McCormack, TUS

Analysis Parameters: PCB's

Comments: 4°C

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Remarks / Preservation Method
5324.01	M12 M14 1 0-6"	4/10/00	1026	Sed	1	
.02	" 1 6-12"		1028			* Fuel smell. *
.03	" 1 18-24"		1030			
.04	M12 M14 2 0-6"		1035			
.05	" 2 6-12"		1038			
.06	M12 M14 3 0-6"		1043			
.07	" 3 6-12"		1045			
.08	M12 M14 4 0-6"		1048			
.09	" 4 6-12"		1050			
.10	M12 M14 4 18-24"		1052			
.11	M12 M14 5 0-6"		1100			
.12	" 5 6-12"		1104			
.13	M12 M14 6 0-6"		1114			
.14	" 6 6-12"		1116			

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/10/00 1340	J. Allegra			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: ( )Standard 3 wks, (X)Rush 10 Days, ( )ASAP Verbal ___Hrs.

Remarks:
Tide: Low

print legibly

Coc.xls3/20/00



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: J. Hallow
Phone #: X216223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: M12/M14 Landfill Stream Sediments cont

Samplers Name / Company: Corey McCormack, TVS

Comments: <4°C

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	PCB's								Remarks / Preservation Method
5324.15	M12 M14 6 18-24"	4/10/00	1118	Sed	1	✓								
.16	M12 M14 7 0-6"		1121			✓								
.17	" 7 6-12"		1123			✓								
.18	M12 M14 8 0-6"		1125			✓								
.19	" 8 6-12"		1127			✓								
.20	M12 M14 9 0-6"*		1144			✓								
.21	" 9 6-12"*		1146			✓								
.22	M12 M14 10 0-6"		1154			✓								
.23	" 10 6-12"		1156			✓								
.24	M12 M14 11 0-6"		1158			✓								
.25	" 11 6-12"		1200											
.26	Dupe 0-6"		—			✓								
.27	Dupe 6-12"		—			✓								

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/10/00 1340	J. Cormack			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: ( )Standard 3 wks, (X)Rush 1 Days, ( )ASAP Verbal ____Hrs.

Remarks: Tide; Low

print legibly

Coc.xls3/20/00

Landfill Stream Sediment PCB's Sample Event Site Field Summary for M12/M14

Husky Brook runs along the northern side of the M12 landfill, eventually running between M12 and M14 landfills (approximately 1700 feet total) before flowing out into Oceanport Creek.

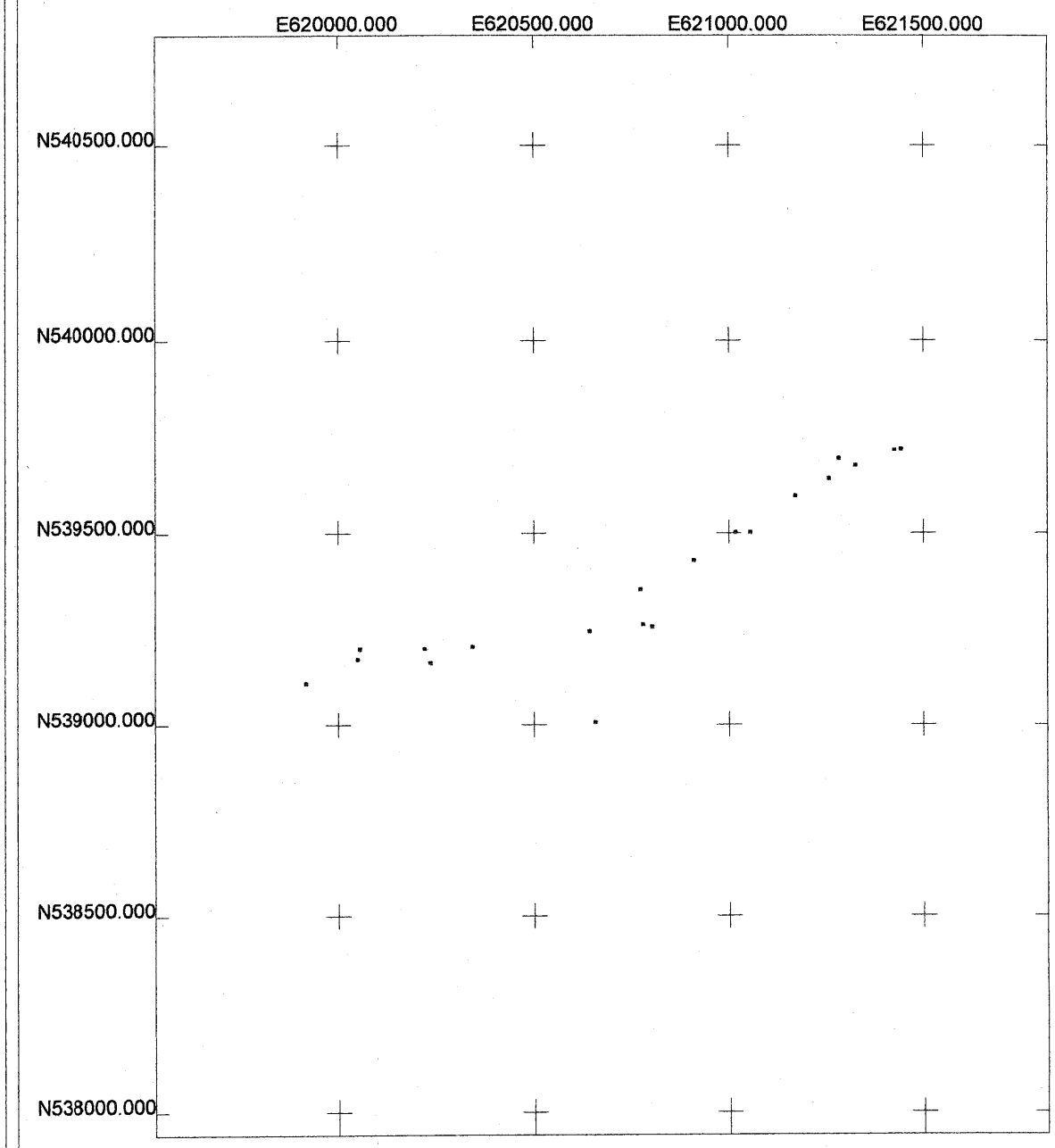
This stream has had all the lower portions of bank on both landfill sides worked on as part of the stream bank restoration project. Previously the banks were just grass covered here, exposed and eroding away into the brook. It currently is covered with large rock and rip-rap. There is little debris in the stream itself in the lower portion.

Further upstream, it is a mixed bank of tree, bramble, and smaller vegetation. There are man made materials and garbage on the banks and in the streambed here. Most materials are old poles, and rail ties. Some lighter restoration work has been done.

Flow is constant, and depth varies with tide. Even at low tide there are pools 3-4 feet deep. Most occur in the lower portion of the brook. The weather at time of sampling was cold, and sunny. There was a rain/snow event a day prior to the sampling. Tide was low.

Depositional areas are scattered here as well. Sampling targeted these areas. When none were available, 1 sample per 100 feet was taken.

GPS



M12 and M14 Landfills Husky Brook Sediment PCBs Samples GPS Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:5000
0 600.0
US Survey Feet

m12m14 strm pcbs r04211
04/21/2000
Pathfinder Office
Trimble

M12 AND M14 LANDFILLS HUSKY BROOK STREAM SEDIMENT PCBS SAMPLES COORDINATES & POSITIONS

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
1	539716.273	621424.35
2	539673.409	621326.374
3	539640.457	621257.069
4	539596.634	621170.467
5	539503.198	621015.723
6	539427.065	620908.66
7 (AT CONVERGANCE)	539261.96	620777.203
8	539243.786	620640.559
9	539204.359	620341.923
10	539198.962	620219.296
11	539170.975	620048.219

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
Murphy Drive Drain to Oceanport Creek	539718.642	621441.09
M14 MW21	539691.296	621282.795
M14 MW19	539351.919	620770.075
CNTR DRAIN PIPE OUTFALL	539198.452	620053.926
Malterer Ave. OUTFALL	539108.356	619916.845
M12 WEST MW26	539162.666	620234.185
CNTR DRAIN OUTFALL	539008.516	620654.182
CNTR DRAIN OUTFALL	539256.093	620800.775
CNTR DRAIN OUTFALL	539503.749	621054.082

PCB's

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client : U.S. Army
DPW. SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab. ID # : PBLK505
Date Rec'd:
Extraction Date: 4/11/00
Analysis Date: 4/14/00

Analysis: SW-846 Method 8082
Matrix: Sediment
Analyst: T. Frankovich

Location :

Field ID:

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	100.00	0.0022	ND	0.007	53.000	10.00
Arochlor 1221	1	100.00	0.0041	ND	NA	NA	10.00
Arochlor 1232	1	100.00	0.0028	ND	NA	NA	10.00
Arochlor 1242	1	100.00	0.0032	ND	NA	NA	10.00
Arochlor 1248	1	100.00	0.0013	ND	0.030	150.000	10.00
Arochlor 1254	1	100.00	0.0008	ND	0.060	34.000	10.00
Arochlor 1260	1	100.00	0.0007	ND	0.005	24.000	10.00
Total PCB	1	100.00	0.0152	ND	0.070	530.000	10.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	PBLK507
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	
Matrix:	Sediment		
Analyst:	T. Frankovich	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	100.00	0.0022	ND	0.007	53.000	10.00
Arochlor 1221	1	100.00	0.0041	ND	NA	NA	10.00
Arochlor 1232	1	100.00	0.0028	ND	NA	NA	10.00
Arochlor 1242	1	100.00	0.0032	ND	NA	NA	10.00
Arochlor 1248	1	100.00	0.0013	ND	0.030	150.000	10.00
Arochlor 1254	1	100.00	0.0008	ND	0.060	34.000	10.00
Arochlor 1260	1	100.00	0.0007	ND	0.005	24.000	10.00
Total PCB	1	100.00	0.0152	ND	0.070	530.000	10.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.01
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 1 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**63.71**	**0.0033**	**ND**	**0.007**	**53.000**	**10.64**
Arochlor 1221	**1**	**63.71**	**0.0061**	**ND**	**NA**	**NA**	**10.64**
Arochlor 1232	**1**	**63.71**	**0.0041**	**ND**	**NA**	**NA**	**10.64**
Arochlor 1242	**1**	**63.71**	**0.0047**	**ND**	**NA**	**NA**	**10.64**
Arochlor 1248	**1**	**63.71**	**0.0019**	**ND**	**0.030**	**150.000**	**10.64**
Arochlor 1254	**1**	**63.71**	**0.0012**	**ND**	**0.060**	**34.000**	**10.64**
Arochlor 1260	**1**	**63.71**	**0.0011**	**ND**	**0.005**	**24.000**	**10.64**
Total PCB	**1**	**63.71**	**0.0224**	**ND**	**0.070**	**530.000**	**10.64**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 1 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	56.76	0.0040	ND	0.007	53.000	9.97
Arochlor 1221	1	56.76	0.0073	ND	NA	NA	9.97
Arochlor 1232	1	56.76	0.0049	ND	NA	NA	9.97
Arochlor 1242	1	56.76	0.0057	ND	NA	NA	9.97
Arochlor 1248	1	56.76	0.0023	ND	0.030	150.000	9.97
Arochlor 1254	1	56.76	0.0014	ND	0.060	34.000	9.97
Arochlor 1260	1	56.76	0.0013	ND	0.005	24.000	9.97
Total PCB	1	56.76	0.0268	ND	0.070	530.000	9.97

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.03
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 1 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**76.97**	**0.0029**	**ND**	**0.007**	**53.000**	**10.07**
Arochlor 1221	**1**	**76.97**	**0.0053**	**ND**	**NA**	**NA**	**10.07**
Arochlor 1232	**1**	**76.97**	**0.0036**	**ND**	**NA**	**NA**	**10.07**
Arochlor 1242	**1**	**76.97**	**0.0041**	**ND**	**NA**	**NA**	**10.07**
Arochlor 1248	**1**	**76.97**	**0.0017**	**ND**	**0.030**	**150.000**	**10.07**
Arochlor 1254	**1**	**76.97**	**0.0010**	**ND**	**0.060**	**34.000**	**10.07**
Arochlor 1260	**1**	**76.97**	**0.0009**	**ND**	**0.005**	**24.000**	**10.07**
Total PCB	**1**	**76.97**	**0.0196**	**ND**	**0.070**	**530.000**	**10.07**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.04
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 2 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**61.96**	**0.0035**	**ND**	**0.007**	**53.000**	**10.35**
Arochlor 1221	**1**	**61.96**	**0.0064**	**ND**	**NA**	**NA**	**10.35**
Arochlor 1232	**1**	**61.96**	**0.0044**	**ND**	**NA**	**NA**	**10.35**
Arochlor 1242	**1**	**61.96**	**0.0050**	**ND**	**NA**	**NA**	**10.35**
Arochlor 1248	**1**	**61.96**	**0.0020**	**ND**	**0.030**	**150.000**	**10.35**
Arochlor 1254	**1**	**61.96**	**0.0012**	**ND**	**0.060**	**34.000**	**10.35**
Arochlor 1260	**1**	**61.96**	**0.0011**	**ND**	**0.005**	**24.000**	**10.35**
Total PCB	**1**	**61.96**	**0.0236**	**ND**	**0.070**	**530.000**	**10.35**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.05
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 2 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**72.58**	**0.0030**	**ND**	**0.007**	**53.000**	**10.34**
Arochlor 1221	**1**	**72.58**	**0.0055**	**ND**	**NA**	**NA**	**10.34**
Arochlor 1232	**1**	**72.58**	**0.0037**	**ND**	**NA**	**NA**	**10.34**
Arochlor 1242	**1**	**72.58**	**0.0043**	**ND**	**NA**	**NA**	**10.34**
Arochlor 1248	**1**	**72.58**	**0.0017**	**ND**	**0.030**	**150.000**	**10.34**
Arochlor 1254	**1**	**72.58**	**0.0011**	**ND**	**0.060**	**34.000**	**10.34**
Arochlor 1260	**1**	**72.58**	**0.0010**	**ND**	**0.005**	**24.000**	**10.34**
Total PCB	**1**	**72.58**	**0.0202**	**ND**	**0.070**	**530.000**	**10.34**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 3 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	69.98	0.0029	ND	0.007	53.000	10.89
Arochlor 1221	1	69.98	0.0054	ND	NA	NA	10.89
Arochlor 1232	1	69.98	0.0037	ND	NA	NA	10.89
Arochlor 1242	1	69.98	0.0042	ND	NA	NA	10.89
Arochlor 1248	1	69.98	0.0017	ND	0.030	150.000	10.89
Arochlor 1254	1	69.98	0.0010	ND	0.060	34.000	10.89
Arochlor 1260	1	69.98	0.0009	ND	0.005	24.000	10.89
Total PCB	1	69.98	0.0199	ND	0.070	530.000	10.89

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.07
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 3 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	70.75	0.0031	ND	0.007	53.000	10.16
Arochlor 1221	1	70.75	0.0057	ND	NA	NA	10.16
Arochlor 1232	1	70.75	0.0039	ND	NA	NA	10.16
Arochlor 1242	1	70.75	0.0045	ND	NA	NA	10.16
Arochlor 1248	1	70.75	0.0018	ND	0.030	150.000	10.16
Arochlor 1254	1	70.75	0.0011	ND	0.060	34.000	10.16
Arochlor 1260	1	70.75	0.0010	ND	0.005	24.000	10.16
Total PCB	1	70.75	0.0211	ND	0.070	530.000	10.16

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.08
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 4 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	79.65	0.0026	ND	0.007	53.000	10.99
Arochlor 1221	1	79.65	0.0047	ND	NA	NA	10.99
Arochlor 1232	1	79.65	0.0032	ND	NA	NA	10.99
Arochlor 1242	1	79.65	0.0037	ND	NA	NA	10.99
Arochlor 1248	1	79.65	0.0015	ND	0.030	150.000	10.99
Arochlor 1254	1	79.65	0.0009	ND	0.060	34.000	10.99
Arochlor 1260	1	79.65	0.0008	ND	0.005	24.000	10.99
Total PCB	1	79.65	0.0173	ND	0.070	530.000	10.99

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.09
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 4 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	80.07	0.0028	ND	0.007	53.000	10.12
Arochlor 1221	1	80.07	0.0051	ND	NA	NA	10.12
Arochlor 1232	1	80.07	0.0035	ND	NA	NA	10.12
Arochlor 1242	1	80.07	0.0039	ND	NA	NA	10.12
Arochlor 1248	1	80.07	0.0016	ND	0.030	150.000	10.12
Arochlor 1254	1	80.07	0.0010	ND	0.060	34.000	10.12
Arochlor 1260	1	80.07	0.0009	ND	0.005	24.000	10.12
Total PCB	1	80.07	0.0187	ND	0.070	530.000	10.12

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.10
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 4 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**72.72**	**0.0029**	**ND**	**0.007**	**53.000**	**10.63**
Arochlor 1221	**1**	**72.72**	**0.0053**	**ND**	**NA**	**NA**	**10.63**
Arochlor 1232	**1**	**72.72**	**0.0036**	**ND**	**NA**	**NA**	**10.63**
Arochlor 1242	**1**	**72.72**	**0.0041**	**ND**	**NA**	**NA**	**10.63**
Arochlor 1248	**1**	**72.72**	**0.0017**	**ND**	**0.030**	**150.000**	**10.63**
Arochlor 1254	**1**	**72.72**	**0.0010**	**ND**	**0.060**	**34.000**	**10.63**
Arochlor 1260	**1**	**72.72**	**0.0009**	**ND**	**0.005**	**24.000**	**10.63**
Total PCB	**1**	**72.72**	**0.0196**	**ND**	**0.070**	**530.000**	**10.63**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.11
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 5 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	75.80	0.0030	ND	0.007	53.000	10.00
Arochlor 1221	1	75.80	0.0054	ND	NA	NA	10.00
Arochlor 1232	1	75.80	0.0037	ND	NA	NA	10.00
Arochlor 1242	1	75.80	0.0042	ND	NA	NA	10.00
Arochlor 1248	1	75.80	0.0017	ND	0.030	150.000	10.00
Arochlor 1254	1	75.80	0.0011	ND	0.060	34.000	10.00
Arochlor 1260	1	75.80	0.0009	ND	0.005	24.000	10.00
Total PCB	1	75.80	0.0200	ND	0.070	530.000	10.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.12
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/14/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 5 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	80.33	0.0026	ND	0.007	53.000	10.69
Arochlor 1221	1	80.33	0.0048	ND	NA	NA	10.69
Arochlor 1232	1	80.33	0.0033	ND	NA	NA	10.69
Arochlor 1242	1	80.33	0.0037	ND	NA	NA	10.69
Arochlor 1248	1	80.33	0.0015	ND	0.030	150.000	10.69
Arochlor 1254	1	80.33	0.0009	ND	0.060	34.000	10.69
Arochlor 1260	1	80.33	0.0008	ND	0.005	24.000	10.69
Total PCB	1	80.33	0.0177	ND	0.070	530.000	10.69

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.13
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/15/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 6 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**79.58**	**0.0026**	**ND**	**0.007**	**53.000**	**10.77**
Arochlor 1221	**1**	**79.58**	**0.0048**	**ND**	**NA**	**NA**	**10.77**
Arochlor 1232	**1**	**79.58**	**0.0033**	**ND**	**NA**	**NA**	**10.77**
Arochlor 1242	**1**	**79.58**	**0.0037**	**ND**	**NA**	**NA**	**10.77**
Arochlor 1248	**1**	**79.58**	**0.0015**	**ND**	**0.030**	**150.000**	**10.77**
Arochlor 1254	**1**	**79.58**	**0.0009**	**ND**	**0.060**	**34.000**	**10.77**
Arochlor 1260	**1**	**79.58**	**0.0008**	**ND**	**0.005**	**24.000**	**10.77**
Total PCB	**1**	**79.58**	**0.0177**	**ND**	**0.070**	**530.000**	**10.77**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.14
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/15/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 6 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	78.17	0.0029	ND	0.007	53.000	10.00
Arochlor 1221	1	78.17	0.0053	ND	NA	NA	10.00
Arochlor 1232	1	78.17	0.0036	ND	NA	NA	10.00
Arochlor 1242	1	78.17	0.0041	ND	NA	NA	10.00
Arochlor 1248	1	78.17	0.0016	ND	0.030	150.000	10.00
Arochlor 1254	1	78.17	0.0010	ND	0.060	34.000	10.00
Arochlor 1260	1	78.17	0.0009	ND	0.005	24.000	10.00
Total PCB	1	78.17	0.0194	ND	0.070	530.000	10.00

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA – Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.15
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 6 18-24"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**80.39**	**0.0026**	**ND**	**0.007**	**53.000**	**10.67**
Arochlor 1221	**1**	**80.39**	**0.0048**	**ND**	**NA**	**NA**	**10.67**
Arochlor 1232	**1**	**80.39**	**0.0033**	**ND**	**NA**	**NA**	**10.67**
Arochlor 1242	**1**	**80.39**	**0.0037**	**ND**	**NA**	**NA**	**10.67**
Arochlor 1248	**1**	**80.39**	**0.0015**	**ND**	**0.030**	**150.000**	**10.67**
Arochlor 1254	**1**	**80.39**	**0.0009**	**ND**	**0.060**	**34.000**	**10.67**
Arochlor 1260	**1**	**80.39**	**0.0008**	**ND**	**0.005**	**24.000**	**10.67**
Total PCB	**1**	**80.39**	**0.0177**	**ND**	**0.070**	**530.000**	**10.67**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.16
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 7 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	77.96	0.0028	ND	0.007	53.000	10.37
Arochlor 1221	1	77.96	0.0051	ND	NA	NA	10.37
Arochlor 1232	1	77.96	0.0035	ND	NA	NA	10.37
Arochlor 1242	1	77.96	0.0040	ND	NA	NA	10.37
Arochlor 1248	1	77.96	0.0016	ND	0.030	150.000	10.37
Arochlor 1254	1	77.96	0.0010	ND	0.060	34.000	10.37
Arochlor 1260	1	77.96	0.0009	ND	0.005	24.000	10.37
Total PCB	1	77.96	0.0188	ND	0.070	530.000	10.37

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.17
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 7 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	55.35	0.0019	ND	0.007	53.000	10.63
Arochlor 1221	1	55.35	0.0035	ND	NA	NA	10.63
Arochlor 1232	1	55.35	0.0024	ND	NA	NA	10.63
Arochlor 1242	1	55.35	0.0027	ND	NA	NA	10.63
Arochlor 1248	1	55.35	0.0011	ND	0.030	150.000	10.63
Arochlor 1254	1	55.35	0.0007	ND	0.060	34.000	10.63
Arochlor 1260	1	55.35	0.0006	ND	0.005	24.000	10.63
Total PCB	1	55.35	0.0129	ND	0.070	530.000	10.63

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.18
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 8 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	69.72	0.0029	ND	0.007	53.000	11.22
Arochlor 1221	1	69.72	0.0053	ND	NA	NA	11.22
Arochlor 1232	1	69.72	0.0036	ND	NA	NA	11.22
Arochlor 1242	1	69.72	0.0041	ND	NA	NA	11.22
Arochlor 1248	1	69.72	0.0016	ND	0.030	150.000	11.22
Arochlor 1254	1	69.72	0.0010	ND	0.060	34.000	11.22
Arochlor 1260	1	69.72	0.0009	ND	0.005	24.000	11.22
Total PCB	1	69.72	0.0194	ND	0.070	530.000	11.22

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA – Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.19
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 8 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**72.98**	**0.0031**	**ND**	**0.007**	**53.000**	**9.93**
Arochlor 1221	**1**	**72.98**	**0.0057**	**ND**	**NA**	**NA**	**9.93**
Arochlor 1232	**1**	**72.98**	**0.0039**	**ND**	**NA**	**NA**	**9.93**
Arochlor 1242	**1**	**72.98**	**0.0044**	**ND**	**NA**	**NA**	**9.93**
Arochlor 1248	**1**	**72.98**	**0.0018**	**ND**	**0.030**	**150.000**	**9.93**
Arochlor 1254	**1**	**72.98**	**0.0011**	**ND**	**0.060**	**34.000**	**9.93**
Arochlor 1260	**1**	**72.98**	**0.0010**	**ND**	**0.005**	**24.000**	**9.93**
Total PCB	**1**	**72.98**	**0.0209**	**ND**	**0.070**	**530.000**	**9.93**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP. Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.20
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/11/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 9 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	78.11	0.0027	ND	0.007	53.000	10.75
Arochlor 1221	1	78.11	0.0049	ND	NA	NA	10.75
Arochlor 1232	1	78.11	0.0033	ND	NA	NA	10.75
Arochlor 1242	1	78.11	0.0038	ND	NA	NA	10.75
Arochlor 1248	1	78.11	0.0015	ND	0.030	150.000	10.75
Arochlor 1254	1	78.11	0.0010	ND	0.060	34.000	10.75
Arochlor 1260	1	78.11	0.0009	ND	0.005	24.000	10.75
Total PCB	1	78.11	0.0181	ND	0.070	530.000	10.75

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.21
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 9 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**76.29**	**0.0029**	**ND**	**0.007**	**53.000**	**10.02**
Arochlor 1221	**1**	**76.29**	**0.0054**	**ND**	**NA**	**NA**	**10.02**
Arochlor 1232	**1**	**76.29**	**0.0037**	**ND**	**NA**	**NA**	**10.02**
Arochlor 1242	**1**	**76.29**	**0.0042**	**ND**	**NA**	**NA**	**10.02**
Arochlor 1248	**1**	**76.29**	**0.0017**	**ND**	**0.030**	**150.000**	**10.02**
Arochlor 1254	**1**	**76.29**	**0.0010**	**ND**	**0.060**	**34.000**	**10.02**
Arochlor 1260	**1**	**76.29**	**0.0009**	**ND**	**0.005**	**24.000**	**10.02**
Total PCB	**1**	**76.29**	**0.0198**	**ND**	**0.070**	**530.000**	**10.02**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA – Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.22
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 10 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	79.56	0.0028	ND	0.007	53.000	10.08
Arochlor 1221	1	79.56	0.0051	ND	NA	NA	10.08
Arochlor 1232	1	79.56	0.0035	ND	NA	NA	10.08
Arochlor 1242	1	79.56	0.0040	ND	NA	NA	10.08
Arochlor 1248	1	79.56	0.0016	ND	0.030	150.000	10.08
Arochlor 1254	1	79.56	0.0010	ND	0.060	34.000	10.08
Arochlor 1260	1	79.56	0.0009	ND	0.005	24.000	10.08
Total PCB	1	79.56	0.0189	ND	0.070	530.000	10.08

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.23
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 10 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**69.70**	**0.0031**	**ND**	**0.007**	**53.000**	**10.43**
Arochlor 1221	**1**	**69.70**	**0.0057**	**ND**	**NA**	**NA**	**10.43**
Arochlor 1232	**1**	**69.70**	**0.0039**	**ND**	**NA**	**NA**	**10.43**
Arochlor 1242	**1**	**69.70**	**0.0044**	**ND**	**NA**	**NA**	**10.43**
Arochlor 1248	**1**	**69.70**	**0.0018**	**ND**	**0.030**	**150.000**	**10.43**
Arochlor 1254	**1**	**69.70**	**0.0011**	**ND**	**0.060**	**34.000**	**10.43**
Arochlor 1260	**1**	**69.70**	**0.0010**	**ND**	**0.005**	**24.000**	**10.43**
Total PCB	**1**	**69.70**	**0.0209**	**ND**	**0.070**	**530.000**	**10.43**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.24
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 11 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	31.33	0.0018	ND	0.007	53.000	10.02
Arochlor 1221	1	31.33	0.0033	ND	NA	NA	10.02
Arochlor 1232	1	31.33	0.0022	ND	NA	NA	10.02
Arochlor 1242	1	31.33	0.0025	ND	NA	NA	10.02
Arochlor 1248	1	31.33	0.0010	ND	0.030	150.000	10.02
Arochlor 1254	1	31.33	0.0006	ND	0.060	34.000	10.02
Arochlor 1260	1	31.33	0.0006	ND	0.005	24.000	10.02
Total PCB	1	31.33	0.0121	ND	0.070	530.000	10.02

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.25
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	M12M14 11 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	21.65	0.0103	ND	0.007	53.000	10.06
Arochlor 1221	1	21.65	0.0189	ND	NA	NA	10.06
Arochlor 1232	1	21.65	0.0129	ND	NA	NA	10.06
Arochlor 1242	1	21.65	0.0147	ND	NA	NA	10.06
Arochlor 1248	1	21.65	0.0059	ND	0.030	150.000	10.06
Arochlor 1254	1	21.65	0.0037	ND	0.060	34.000	10.06
Arochlor 1260	1	21.65	0.0033	ND	0.005	24.000	10.06
Total PCB	1	21.65	0.0696	ND	0.070	530.000	10.06

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.26
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 0-6"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	1	78.54	0.0028	ND	0.007	53.000	10.13
Arochlor 1221	1	78.54	0.0052	ND	NA	NA	10.13
Arochlor 1232	1	78.54	0.0035	ND	NA	NA	10.13
Arochlor 1242	1	78.54	0.0040	ND	NA	NA	10.13
Arochlor 1248	1	78.54	0.0016	ND	0.030	150.000	10.13
Arochlor 1254	1	78.54	0.0010	0.279	0.060	34.000	10.13
Arochlor 1260	1	78.54	0.0009	ND	0.005	24.000	10.13
Total PCB	1	78.54	0.0191	0.279	0.070	530.000	10.13

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	5324.27
	DPW. SELFM-PW-EV	**Date Rec'd:**	4/10/00
	Bldg. 173	**Extraction Date:**	4/12/00
	Ft. Monmouth, NJ 07703	**Analysis Date:**	4/17/00
Analysis:	SW-846 Method 8082	**Location :**	M12/M14 Landfill
Matrix:	Sediment		Stream Sediments
Analyst:	T. Frankovich	**Field ID:**	Dupe 6-12"

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Lowest Effects Level (LEL)*	Severe Effects Level (SEL)*	Weight (g)
Arochlor 1016	**1**	**78.45**	**0.0028**	**ND**	**0.007**	**53.000**	**10.20**
Arochlor 1221	**1**	**78.45**	**0.0051**	**ND**	**NA**	**NA**	**10.20**
Arochlor 1232	**1**	**78.45**	**0.0035**	**ND**	**NA**	**NA**	**10.20**
Arochlor 1242	**1**	**78.45**	**0.0040**	**ND**	**NA**	**NA**	**10.20**
Arochlor 1248	**1**	**78.45**	**0.0016**	**ND**	**0.030**	**150.000**	**10.20**
Arochlor 1254	**1**	**78.45**	**0.0010**	**ND**	**0.060**	**34.000**	**10.20**
Arochlor 1260	**1**	**78.45**	**0.0009**	**ND**	**0.005**	**24.000**	**10.20**
Total PCB	**1**	**78.45**	**0.0189**	**ND**	**0.070**	**530.000**	**10.20**

* NJDEP Guidance For Sediment Quality Evaluations, November 1998

ND = Not Detected
MDL = Method Detection Limit
NA = Not Applicable

Column-Primary: Rtx-5 30m/.32mmID/.25um
Column-Confirmation: Rtx-1701 30m/.32mmID/.25um

APPENDIX B
RECREATIONAL USER SCREENING LEVEL CALCULATIONS

The equations used to calculate screening values for exposure to soil are shown below.

The following abbreviations are used:

- SL = Screening Level
- nc = noncarcinogenic
- ing = ingestion
- der = dermal
- inh = inhalation
- ca = carcinogenic
- adl = adolescent
- adjust = adjusted

Units definitions:

- mg = milligram
- kg = kilogram
- cm = centimeter
- cm^2 = square centimeter
- cm^3 = cubic centimeter
- m^3 = cubic meter
- m^2 = square meter
- s = second
- g = gram
- L = liter
- µg = microgram

UTILITY WORKER

The utility workers would be exposed to surface soil and subsurface soil (e.g. during trenching activities) through incidental ingestion of soil, dermal contact with soil, and inhalation of volatiles and particulates from soil.

The soil screening levels for the utility worker, in mg/kg, are calculated as:

Noncarcinogenic - adult

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\ (AT_{nc})\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\left(\frac{1}{RfD_O}\right)\,(IRS_{adult})\ (CF_s)}$$

Dermal

$$SL_{nc-der} = \frac{(THQ)\,(AT_{nc})\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\left(\frac{1}{(RfD_O)\,(GIABS)}\right)\,(SA_{adult})\,(AF_{adult})\,(ABS_d)\,(CF_s)}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT_{nc})}{(EF_{adult})\,(ED_{adult})\,(ET)\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\left(\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}\right)}$$

Carcinogenic - adult

Ingestion

$$SL_{ca-ing} = \frac{(TR)\,(AT_c)\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\,(CSF_o)\,(IRS_{adult})\,(CF_s)}$$

Dermal

$$SL_{ca-der} = \frac{(TR)\,(AT_c)\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\left(\frac{CSF_O}{GIABS}\right)(SA_{adult})\,(AF_{adult})\,(ABS_d)\,(CF_s)}$$

Inhalation

$$SL_{ca-inh} = \frac{(TR)\,(AT_c)}{(EF_{adult})\,(ED_{adult})\,(ET)\;\;(IUR)\left(\frac{1000\mu g}{mg}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{ca-total} = \frac{1}{\left(\frac{1}{SL_{ca-ing}} + \frac{1}{SL_{ca-der}} + \frac{1}{SL_{ca-inh}}\right)}$$

RECREATIONAL USER

The utility workers would be exposed to surface soil through incidental ingestion of soil, dermal contact with soil, and inhalation of volatiles and particulates from soil, in part as an adolescent (aged 6-16) and in part as an adult (aged 16-30).

Non-carcinogenic adolescent

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\,(AT)\,(ED_{adl})\,(BW_{adl})}{(EF)\,(ED)\left(\frac{1}{RfD_O}\right)\,(IR_{adl})\,(CF_s)}$$

Dermal

$$SL_{nc-der} = \frac{(THQ)\,(AT)(ED_{adl})\,(BW_{adl})}{(EF)\,(ED)\left(\frac{1}{RfD_O \times GIABS}\right)\,(SA_{adl})\,(AF_{adl})\,(ABS_d)\,(CF_s)}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT)\,(ED_{adl})}{(EF)\,(ED_{adl})\,(ET_{adl})\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\left(\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}\right)}$$

Non-carcinogenic adult

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\,(AT)\,(ED_{adult})\,(BW_{adult})}{(EF)\,(ED)\left(\frac{1}{RfD_O}\right)\,(IR_{adult})\,(CF_{soil})}$$

Dermal

$$SL_{nc-der} = \frac{(THQ)\,(AT)\,(ED_{adult})\,(BW_{adult})}{(EF)\,(ED)\left(\frac{1}{RfD_O \times GIABS}\right)\,(SA_{adult})\,(AF_{adult})\,(ABS_d)\,(CF_s)}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT)\,(ED_{adult})}{(EF)\,(ED_{adult})\,(ET_{adult})\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s}+\frac{1}{PEF}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\left(\frac{1}{SL_{nc-ing}}+\frac{1}{SL_{nc-der}}+\frac{1}{SL_{nc-inh}}\right)}$$

Carcinogenic

Ingestion

$$SL_{ca-ing} = \frac{(TR)\,(AT)\,(LT)}{(CfS_O)\left(IFS_{adj}\right)(CF_s)}$$

Where:

$$IFS_{adjust} = \frac{(ED_{adl})\,(EF_{adl})\,(IRS_{adl})}{BW_{adl}} + \frac{(ED_{adult})\,(EF_{adult})\,(IRS_{adult})}{BW_{adult}}$$

Dermal

$$SL_{ca-der} = \frac{(TR)\,(AT)\,(LT)}{\left(\frac{CsF_O}{GIABS}\right)\left(DFS_{adj}\right)(ABS_d)\,(CF_s)}$$

Where:

$$DFS_{adjust} = \frac{(ED_{adl})(\,EF_{adl})\,(SA_{adl})\,(AF_{adl})}{BW_{adl}} + \frac{(ED_{adult})\,(EF_{adult})\,(SA_{adult})\;(AF_{adult})}{BW_{adult}}$$

Inhalation

$$SL_{ca-inh} = \frac{(TR)\,(AT)\,(LT)}{(EF_{rec})\,(ED_{rec})\,(ET_{rec})\left(\frac{1\;day}{24\;hours}\right)(IUR)\left(\frac{1000\mu g}{mg}\right)\left(\frac{1}{VF_s}+\frac{1}{PEF}\right)}$$

Total

$$SL_{ca-total} = \frac{1}{\frac{1}{SL_{ca-ing}} + \frac{1}{SL_{ca-der}} + \frac{1}{SL_{ca-inh}}}$$

Supporting Equations

Particulate Emission Factor, in m^3 air / kg soil

$$PEF = \left({}^{Q}/_{C}\right)\left(\frac{3{,}600\ {}^{seconds}/_{hour}}{(0.036)\ (1-V)\left(\left(\frac{U_m}{U_t}\right)^3\right)[F(x)]}\right)$$

Volatilization Factor, in m^3 air / kg soil

$$VF_s = \left({}^{Q}/_{C}\right)\left(\frac{\left((3.14)\ (D_A)\ (T)\right)^{1/2}\ (CF_{vol})}{\left((2\ )\ (\rho_b)\ \ (D_A)\right)}\right)$$

Where:

$$D_A = \frac{\left(\left(\theta_a^{10/3}\right)\ (D_i)\ \left(H'\right)\right) + \left(\left(\theta_w^{10/3}\right)\ (D_w)\right)}{(n^2)\ \left(\left((\rho_b)\ (K_d)\right) + \ \theta_w + \ \left((\theta_a)\ (H')\right)\right)}$$

Summary of Exposure Assumptions for Soil for each Potential Receptor

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rationale	Recreational User	Sources	Rationale
THQ	Target Hazard Quotient	unitless	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1
AT_{nc}	Averaging Time – noncarcinogens	days	9,125	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (25 years x 365 days)	365	USEPA, 2014c	Source references USEPA, 1989, page 6-23; ED expressed in days (1 year x 365 days)	5,110 (adult) 3,650 (adl)	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (14 years adult x 365 days or 10 years adl x 365 days)
AT_c	Averaging Time – carcinogens	days	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)
ED	Exposure Duration	years	25	USEPA, 2014c	Source references USEPA, 1991a, Page 15; RME scenario for industrial worker	1	USEPA, 2002	Exhibit 5-1; USEPA, default value for construction workers	14 (adult) 10 (adl)	Professional judgment	Adult: Represents the number of years returning to the same location as an adult, assumes 16 to <30 years of age Adl: Represents the number of years returning to the same location as an adolescent; assumes 6 to <16 years of age
BW	Body Weight	kg	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80 (adult) 44 (adl)	Adult: USEPA, 2014c Adl: USEPA, 2011	Adult: Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 to 78 years of age Adl: Table 8-3, mean of body weights for 6 to <11 and 11 to <16 years
EF	Exposure Frequency	days/year	225	USEPA, 2014c	Source references USEPA, 1991, page 15, outdoor worker RME scenario	30	Professional judgment	Assumes project of one month duration	50	Professional judgment	Assumes recreational user on site once per week every week of the year, except for 2 weeks vacation
IRS	Soil Ingestion Rate	mg/day	100	USEPA, 2014c	Source references USEPA, 1991, page 15, same as adult resident	330	USEPA, 2014b	Source references USEPA, 2002, Exhibit 5-1, USEPA recommended value for construction worker	50 (adult) 100 (adl)	USEPA, 2011	Adult: Table 5-1, General Population Central Tendency, Adult soil and dust ingestion Adl: Table 5-1, General Population Central Tendency, soil and dust ingestion for 6 to <21 years of age
EV	Event Frequency	events/day	1	USEPA, 2004a	Exhibit 3-5, industrial RME scenario	1	USEPA, 2004a	Exhibit 3-5, industrial RME scenario	1	Professional judgment	Recreational users are expected to be onsite one event per day
FI	Fraction Ingested	unitless	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site
CF_s	Conversion Factor-soil	kg/mg	1E-06	USEPA, 1989	Exhibit 6-14	1E-06	USEPA, 1989	Exhibit 6-14	1E-06	USEPA, 1989	Exhibit 6-14

Summary of Exposure Assumptions for Soil for each Potential Receptor (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rationale	Recreational User	Sources	Rationale
GIABS	Gastrointestinal Absorption Factor (also, OAF = Oral Absorption Factor)	unitless	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract
SA	Exposed Skin Surface Area	cm^2	3,470	USEPA, 2014c	Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assumes wearing shoes and long pants	3,470	USEPA, 2014c	Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assumes wearing shoes and long pants	3,470 (adult) 2,160 (adl)	USEPA, 2014c; USEPA, 2011	Adult: Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assume wearing shoes and long pants Adl: Table 7-2, weighted average of mean values for head, hands, and arms (mean value for arm times 45% to account for forearm) (Age 6 to <16 years of age); assume wearing shoes and long pants
AF	Adherence Factor	mg/cm^2	0.12 (1)	USEPA, 2014c	Source references USEPA, 2011, Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult commercial/ industrial activities	0.20	USEPA, 2011	Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult utility worker number 1	0.09 (adult) 0.04 (adl) (1)	USEPA, 2011	Adult: Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult Gardener number 1 Adl: Table 7-2, Table 7-4, and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, face, mean adherence factors for child playing outdoor sports
ABS_d	Dermal Absorption Factor	unitless	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table-	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table -	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table -
ET	Exposure Time	hour/day	8	USEPA, 2014c	The work day	8	USEPA, 2014c	The work day	2	Professional judgment	Assumes recreational users on site for two hours each event
VF	Volatilization Factor-soil	m^3/kg	Chemical Specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	Chemical Specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	Chemical specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document
PEF	Particulate Emission Factor	m^3/kg	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document

1
2
3

Summary of Exposure Parameters for VF / PEF

Abbreviation	Parameter	Units	All Receptors	Sources	Rationale
Q/C	Inverse of mean concentration at center of square source area for Philadelphia, Pennsylvania	g/m^2-s per kg/m^3	87.36898	USEPA, 2014b	Source references USEPA, 2002, Exhibit D-2
V	Fraction of vegetative cover	unitless	0.5 (50%)	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
U_m	Mean annual wind speed	m/s	4.69	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
U_t	Equivalent threshold value of wind speed at 7m	m/s	11.32	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
F(x)	Function Dependent on U_m /U_t	unitless	0.194	USEPA, 2014b, Cowherd et. al. 1985	Source references USEPA, 2002, Equation 4-5

4

Summary of Exposure Parameters for VF / PEF (Continued)					
Abbreviation	**Parameter**	**Units**	**All Receptors**	**Sources**	**Rationale**
D_A	Apparent diffusivity	cm^2/s	Chemical-specific	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
C_{sat}	Soil saturation concentration	mg/kg	Chemical-specific	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
T	Exposure interval	seconds	9.5E+08	USEPA, 2002	USEPA, 2002, Equation 4-8
ρ_b	Dry soil bulk density	g/cm^3	1.5	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
θ_a	Air-filled Soil Porosity	L_{air}/L_{soil}, calculated as $n - \theta_w$	0.28	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
n	Total Soil Porosity	L_{pore}/L_{soil}	0.43	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
θ_w	Water-filled Soil Porosity	L_{water}/L_{soil}	0.15	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8

1

Summary of Exposure Parameters for VF / PEF (Continued)					
Abbreviation	**Parameter**	**Units**	**All Receptors**	**Sources**	**Rationale**
ρ_s	Soil particle density	g/cm^3	2.65	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
D_i	Diffusivity in Air	cm^2/second	Chemical-specific	USEPA, 2015c	--
H'	Henry's law constant	Dimensionless	Chemical-specific	USEPA, 2015c	--
D_w	Diffusivity in Water	cm^2/second	Chemical-specific	USEPA, 2015c	--
K_d	Soil-water Partition Coefficient	L/kg	Chemical-specific	USEPA, 2015c	Calculated as K_{OC} X f_{OC}
K_{OC}	Soil organic carbon-water Partition Coefficient	L/kg	Chemical-specific	USEPA, 2015c	--
f_{OC}	Organic Carbon Content of Soil	g/g	0.006 (0.006%)	USEPA, 2014b	Source references USEPA, 2002, Equation 5-14
S	Water Solubility	mg/L	Chemical-specific	USEPA, 2015c	--

2

Summary of Exposure Parameters for Groundwater or Surface Water

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
IRW	Groundwater or Surface Water Ingestion	L/day	0.02	USEPA, 2014d	Section 4.5; During wading activities, water ingestion of 10 ml/hour for adults, converted to L/day assuming the outdoor worker is in contact with surface water for 2 hours per day	0.02	USEPA, 2014d	Section 4.5; During wading activities, water ingestion of 10 ml/hour for adults, converted to L/day assuming the utility worker is in contact with groundwater in a trench for 2 hours per day	0.02 (adult) 0.02(adl)	USEPA, 2014d	Section 4-5; During wading activities, water ingestion of 10 ml/hour for adolescents and adults, converted to L/day assuming the recreational user is in contact with surface water for 2 hours per day
K_p	Permeability Constant	cm/hour	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water
SA	Skin Surface Area	cm^2	4,835	USEPA, 2011	Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years)	4,840	USEPA, 2011	Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years)	4,835 (adult) 3093 (adl)	USEPA, 2011	Adult: Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years). Adl: Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (6 to <16 years of age)
VF_{air}	Volatilization Factor	L/m^3	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20
EV	Event Frequency	events/day	1	Professional judgment	Assumes an outdoor worker may come into contact with surface water during routine maintenance activities, for one event per day.	1	USEPA, 2002	Exhibit 1-2. Assumes a worker may come into contact with groundwater during excavation or trenching activities, for one event per day.	1	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day.
ET	Exposure time as a fraction of the day spent at the site	unitless	0.083 (2 hours/day)	Professional judgment	Assumes an outdoor worker may come into contact with surface water during work activities, for one event per day, 2 hours per event.	0.083 (2 hours/day)	Professional judgment	Assumes an utility worker may come into contact with groundwater during work activities, for one event per day, 2 hours per event.	0.083 (2 hours/day)	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day, 2 hours per event.

Summary of Exposure Parameters for Groundwater or Surface Water (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
t_{event}	Event Duration	hours/event	2	Professional judgment	Assumes an outdoor worker may come into contact with surface water during work activities, for one event per day, 2 hours per event.	2	Professional judgment	Assumes an utility worker may come into contact with groundwater during work activities, for one event per day, 2 hours per event.	2	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day, 2 hours per event.
EF	Exposure Frequency	days/year	225	USEPA, 2014c	Source references USEPA, 1991aa, page 15, outdoor worker RME scenario	30	Professional judgment	Assumes project of one month duration	50	Professional judgment	Assumes recreational user on site once per week every week of the year, except for 2 weeks vacation
ED	Exposure Duration	year	25	USEPA, 2014c	Source references USEPA, 1991a, Page 15; RME scenario for industrial worker	1	USEPA, 2002	Exhibit 5-1; USEPA, default value for construction workers	14 (adult) 10 (adl)	Professional judgment	Adult: Represents the number of years returning to the same location as an adult, age 16 to <30 years of age Adl: Represents the number of years returning to the same location as an adolescent; assumes adolescent recreational user 6 to <16 years of age
ED	Exposure Duration-for inhalation	year	--	--	--	--	--	--	23	Professional judgment	Combined 10 years as adolescent and 14 years as adult
BW	Body Weight	kg	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80 (adult) 44 (adl)	USEPA, 2014c, USEPA, 2011	Adult: Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78 Adl: Table 8-3, weighted mean value for adolescent age 6 to <16 years of age
AT_{nc}	Averaging Time – noncarcinogens	days	9,125	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (25 years x 365 days)	365	USEPA, 2014c	Source references USEPA, 1989, page 6-23; ED expressed in days (1 year x 365 days)	5,110 (adult) 3,650 (adl)	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (14 years adult x 365 days or 10 years adl x 365 days)
AT_c	Averaging Time – carcinogens	days	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)

Summary of Exposure Parameters for Groundwater or Surface Water (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
FA	Fraction absorbed	unitless	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3
B	Relative contribution of permeability coefficient	unitless	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--
t^*	Time it takes to reach steady state	hours	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3
τ_{event}	Lag Time per Event	hr/event	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--

Site-specific
Outdoor Worker Equation Inputs for Soil
MODIFIED FOR UTILITY WORKER

Variable	Value
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	1
AT_{ow} (averaging time)	365
EF_{ow} (exposure frequency) d/yr	30
ED_{ow} (exposure duration) yr	1
ET_{ow} (exposure time) hr	8
LT (lifetime) yr	70
BW_{ow} (body weight)	80
IR_{ow} (soil ingestion rate) mg/day	330
SA_{ow} (surface area) cm^2/day	3470
AF_{ow} (skin adherence factor) mg/cm^2	0.12
City (Climate Zone) PEF Selection	Philadelphia, P
A_s (acres) PEF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) PEF Selection	87.36898
PEF (particulate emission factor) m^3/kg	3232997857
A (PEF Dispersion Constant)	14.0111
B (PEF Dispersion Constant)	19.6154
C (PEF Dispersion Constant)	225.3397
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.29
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.0993
City (Climate Zone) VF Selection	Philadelphia, P
A_s (acres) VF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) VF Selection	87.36898
foc (fraction organic carbon in soil) g/g	0.006

ρ$_b$ (dry soil bulk density) g/cm^3	1.5
ρ$_s$ (soil particle density) g/cm^3	2.65
θ$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	950000000
A (VF Dispersion Constant)	14.0111
B (VF Dispersion Constant)	19.6154
C (VF Dispersion Constant)	225.3397

Output generated 18MAY2015:09:10:02

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
ALAR	1596-84-5	No	No	1.80E-02	U	5.10E-06	U	1.50E-01	U	-		1
Acenaphthene	83-32-9	No	Yes	-		-		6.00E-02	U	-		1
Acenaphthylene	208-96-8	No	Yes	-		-		-		-		1
Acephate	30560-19-1	No	No	8.70E-03	U	-		4.00E-03	U	-		1
Acetaldehyde	75-07-0	No	Yes	-		2.20E-06	U	-		9.00E-03	U	1
Acetochlor	34256-82-1	No	No	-		-		2.00E-02	U	-		1
Acetone	67-64-1	No	Yes	-		-		9.00E-01	U	3.09E+01	U	1
Acetone Cyanohydrin	75-86-5	No	Yes	-		-		-		2.00E-03	U	1
Acetonitrile	75-05-8	No	Yes	-		-		-		6.00E-02	U	1
Acetophenone	98-86-2	No	Yes	-		-		1.00E-01	U	-		1
Acetylaminofluorene, 2-	53-96-3	No	No	3.80E+00	U	1.30E-03	U	-		-		1
Acifluorofen	50594-66-6	No	No	-		-		-		-		1
Acridine	260-94-6	No	No	-		-		-		-		1
Acrolein	107-02-8	No	Yes	-		-		5.00E-04	U	2.00E-05	U	1
Acrylamide	79-06-1	Yes	No	5.00E-01	U	1.00E-04	U	2.00E-03	U	6.00E-03	U	1
Acrylic Acid	79-10-7	No	Yes	-		-		5.00E-01	U	1.00E-03	U	1
Acrylonitrile	107-13-1	No	Yes	5.40E-01	U	6.80E-05	U	4.00E-02	U	2.00E-03	U	1
Adiponitrile	111-69-3	No	No	-		-		-		6.00E-03	U	1
Alachlor	15972-60-8	No	No	5.60E-02	U	-		1.00E-02	U	-		1
Aldicarb	116-06-3	No	No	-		-		1.00E-03	U	-		1
Aldicarb Sulfone	1646-88-4	No	No	-		-		1.00E-03	U	-		1
Aldicarb sulfoxide	1646-87-3	No	No	-		-		-		-		1
Aldrin	309-00-2	No	Yes	1.70E+01	U	4.90E-03	U	3.00E-05	U	-		1
Aliphatic Chlorinated Hydrocarbons (each)	NA	No	No	-		-		-		-		1
Aliphatic Chlorinated Hydrocarbons (total)	NA	No	No	-		-		-		-		1
Alizarin Red Compounds	NA	No	No	-		-		-		-		1
Ally	74223-64-6	No	No	-		-		2.50E-01	U	-		1
Allyl Alcohol	107-18-6	No	Yes	-		-		5.00E-03	U	1.00E-04	U	1
Allyl Chloride	107-05-1	No	Yes	2.10E-02	U	6.00E-06	U	-		1.00E-03	U	1
Aluminum	7429-90-5	No	No	-		-		1.00E+00	U	5.00E-03	U	1
Aluminum Phosphide	20859-73-8	No	No	-		-		4.00E-04	U	-		1
Aluminum metaphosphate	13776-88-0	No	No	-		-		4.86E+01	U	-		1
Amdro	67485-29-4	No	No	-		-		3.00E-04	U	-		1
Ametryn	834-12-8	No	No	-		-		9.00E-03	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
ALAR	1596-84-5	0.1	1	-	-	3.23E+09	1.15E+04	9.09E+04	1.62E+09	1.02E+04	4.42E+05
Acenaphthene	83-32-9	0.13	1	1.94E+05	-	3.23E+09	-	-	-	-	1.77E+05
Acenaphthylene	208-96-8	0.13	1	2.61E+05	-	3.23E+09	-	-	-	-	-
Acephate	30560-19-1	0.1	1	-	-	3.23E+09	2.37E+04	1.88E+05	-	2.11E+04	1.18E+04
Acetaldehyde	75-07-0	-	1	1.20E+04	1.07E+05	3.23E+09	-	-	1.39E+04	1.39E+04	-
Acetochlor	34256-82-1	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Acetone	67-64-1	-	1	1.88E+04	1.14E+05	3.23E+09	-	-	-	-	2.65E+06
Acetone Cyanohydrin	75-86-5	-	1	3.28E+04	1.06E+05	3.23E+09	-	-	-	-	-
Acetonitrile	75-05-8	-	1	1.79E+04	1.28E+05	3.23E+09	-	-	-	-	-
Acetophenone	98-86-2	-	1	8.24E+04	2.52E+03	3.23E+09	-	-	-	-	2.95E+05
Acetylaminofluorene, 2-	53-96-3	0.1	1	-	-	3.23E+09	5.43E+01	4.31E+02	6.35E+06	4.82E+01	-
Acifluorofen	50594-66-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Acridine	260-94-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Acrolein	107-02-8	-	1	9.52E+03	2.27E+04	3.23E+09	-	-	-	-	1.47E+03
Acrylamide	79-06-1	0.1	1	-	-	3.23E+09	4.13E+02	3.27E+03	8.26E+07	3.67E+02	5.90E+03
Acrylic Acid	79-10-7	-	1	1.31E+05	1.09E+05	3.23E+09	-	-	-	-	1.47E+06
Acrylonitrile	107-13-1	-	1	1.06E+04	1.13E+04	3.23E+09	3.82E+02	-	3.98E+02	1.95E+02	1.18E+05
Adiponitrile	111-69-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Alachlor	15972-60-8	0.1	1	-	-	3.23E+09	3.69E+03	2.92E+04	-	3.27E+03	2.95E+04
Aldicarb	116-06-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Aldicarb Sulfone	1646-88-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Aldicarb sulfoxide	1646-87-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Aldrin	309-00-2	-	1	2.37E+06	-	3.23E+09	1.21E+01	-	1.23E+03	1.20E+01	8.85E+01
Aliphatic Chlorinated Hydrocarbons (each)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Aliphatic Chlorinated Hydrocarbons (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Alizarin Red Compounds	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ally	74223-64-6	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+05
Allyl Alcohol	107-18-6	-	1	4.71E+04	1.11E+05	3.23E+09	-	-	-	-	1.47E+04
Allyl Chloride	107-05-1	-	1	2.18E+03	1.42E+03	3.23E+09	9.83E+03	-	9.30E+02	8.49E+02	-
Aluminum	7429-90-5	-	1	-	-	3.23E+09	-	-	-	-	2.95E+06
Aluminum Phosphide	20859-73-8	-	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Aluminum metaphosphate	13776-88-0	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Amdro	67485-29-4	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Ametryn	834-12-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+04

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
ALAR	1596-84-5	3.51E+06	-	3.93E+05	1.02E+04 ca*
Acenaphthene	83-32-9	1.08E+06	-	1.52E+05	1.52E+05 max
Acenaphthylene	208-96-8	-	-	-	
Acephate	30560-19-1	9.35E+04	-	1.05E+04	1.05E+04 nc
Acetaldehyde	75-07-0	-	3.94E+03	3.94E+03	3.94E+03 nc
Acetochlor	34256-82-1	4.67E+05	-	5.24E+04	5.24E+04 nc
Acetone	67-64-1	-	2.13E+07	2.36E+06	2.36E+06 sat
Acetone Cyanohydrin	75-86-5	-	2.39E+03	2.39E+03	2.39E+03 nc
Acetonitrile	75-05-8	-	3.92E+04	3.92E+04	3.92E+04 nc
Acetophenone	98-86-2	-	-	2.95E+05	2.95E+05 sat
Acetylaminofluorene, 2-	53-96-3	-	-	-	4.82E+01 ca
Acifluorofen	50594-66-6	-	-	-	
Acridine	260-94-6	-	-	-	
Acrolein	107-02-8	-	6.95E+00	6.92E+00	6.92E+00 nc
Acrylamide	79-06-1	4.67E+04	7.08E+08	5.24E+03	3.67E+02 ca*
Acrylic Acid	79-10-7	-	4.80E+03	4.78E+03	4.78E+03 nc
Acrylonitrile	107-13-1	-	7.73E+02	7.68E+02	1.95E+02 ca**
Adiponitrile	111-69-3	-	7.08E+08	7.08E+08	7.08E+08 max
Alachlor	15972-60-8	2.34E+05	-	2.62E+04	3.27E+03 ca**
Aldicarb	116-06-3	2.34E+04	-	2.62E+03	2.62E+03 nc
Aldicarb Sulfone	1646-88-4	2.34E+04	-	2.62E+03	2.62E+03 nc
Aldicarb sulfoxide	1646-87-3	-	-	-	
Aldrin	309-00-2	-	-	8.85E+01	1.20E+01 ca**
Aliphatic Chlorinated Hydrocarbons (each)	NA	-	-	-	
Aliphatic Chlorinated Hydrocarbons (total)	NA	-	-	-	
Alizarin Red Compounds	NA	-	-	-	
Ally	74223-64-6	5.84E+06	-	6.55E+05	6.55E+05 max
Allyl Alcohol	107-18-6	-	1.72E+02	1.70E+02	1.70E+02 nc
Allyl Chloride	107-05-1	-	7.97E+01	7.97E+01	7.97E+01 nc
Aluminum	7429-90-5	-	5.90E+08	2.93E+06	2.93E+06 max
Aluminum Phosphide	20859-73-8	-	-	1.18E+03	1.18E+03 nc
Aluminum metaphosphate	13776-88-0	-	-	1.43E+08	1.43E+08 max
Amdro	67485-29-4	7.01E+03	-	7.86E+02	7.86E+02 nc
Ametryn	834-12-8	2.10E+05	-	2.36E+04	2.36E+04 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	No	Yes	-		-		-		-		1
Aminoazobenzene, p-	60-09-3	No	No	-		-		-		-		1
Aminobiphenyl, 4-	92-67-1	No	No	2.10E+01	U	6.00E-03	U	-		-		1
Aminophenol, m-	591-27-5	No	No	-		-		8.00E-02	U	-		1
Aminophenol, o-	95-55-6	No	No	-		-		-		-		1
Aminophenol, p-	123-30-8	No	No	-		-		2.00E-02	U	-		1
Aminopyridine, 4-	504-24-5	No	No	-		-		-		-		1
Amitraz	33089-61-1	No	No	-		-		2.50E-03	U	-		1
Ammonium Perchlorate	7790-98-9	No	No	-		-		7.00E-04	U	-		1
Ammonium Sulfamate	7773-06-0	No	No	-		-		2.00E-01	U	-		1
Ammonium polyphosphate	68333-79-9	No	No	-		-		4.86E+01	U	-		1
Amyl Alcohol, tert-	75-85-4	No	Yes	-		-		-		3.00E-03	U	1
Aniline	62-53-3	No	No	5.70E-03	U	1.60E-06	U	7.00E-03	U	1.00E-03	U	1
Anilinobenzothiazole	1843-21-6	No	No	-		-		-		-		1
Anthracene	120-12-7	No	Yes	-		-		3.00E-01	U	-		1
Anthraquinone, 9,10-	84-65-1	No	No	4.00E-02	U	-		2.00E-03	U	-		1
Antimony (metallic)	7440-36-0	No	No	-		-		4.00E-04	U	-		0.15
Antimony Pentoxide	1314-60-9	No	No	-		-		5.00E-04	U	-		0.15
Antimony Potassium Tartrate	11071-15-1	No	No	-		-		9.00E-04	U	-		0.15
Antimony Tetroxide	1332-81-6	No	No	-		-		4.00E-04	U	-		0.15
Antimony Trichloride	10025-91-9	No	No	-		-		-		-		1
Antimony Trioxide	1309-64-4	No	No	-		-		-		2.00E-04	U	0.15
Apollo	74115-24-5	No	No	-		-		1.30E-02	U	-		1
Aramite	140-57-8	No	No	2.50E-02	U	7.10E-06	U	5.00E-02	U	-		1
Aroclor 1016	12674-11-2	No	Yes	7.00E-02	U	2.00E-05	U	7.00E-05	U	-		1
Aroclor 1221	11104-28-2	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Aroclor 1232	11141-16-5	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Aroclor 1242	53469-21-9	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Aroclor 1248	12672-29-6	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Aroclor 1254	11097-69-1	No	Yes	2.00E+00	U	5.71E-04	U	2.00E-05	U	-		1
Aroclor 1260	11096-82-5	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Aroclor 5460	11126-42-4	No	Yes	-		-		6.00E-04	U	-		1
Arsenic Salts	NA	No	No	-		-		-		-		1
Arsenic, Inorganic	7440-38-2	No	No	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	-	1	3.69E+05	-	3.23E+09	-	-	-	-	-
Aminoazobenzene, p-	60-09-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Aminobiphenyl, 4-	92-67-1	0.1	1	-	-	3.23E+09	9.83E+00	7.79E+01	1.38E+06	8.73E+00	-
Aminophenol, m-	591-27-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+05
Aminophenol, o-	95-55-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Aminophenol, p-	123-30-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Aminopyridine, 4-	504-24-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Amitraz	33089-61-1	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+03
Ammonium Perchlorate	7790-98-9	-	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Ammonium Sulfamate	7773-06-0	-	1	-	-	3.23E+09	-	-	-	-	5.90E+05
Ammonium polyphosphate	68333-79-9	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Amyl Alcohol, tert-	75-85-4	-	1	3.62E+04	1.37E+04	3.23E+09	-	-	-	-	-
Aniline	62-53-3	0.1	1	-	-	3.23E+09	3.62E+04	2.87E+05	5.16E+09	3.22E+04	2.06E+04
Anilinobenzothiazole	1843-21-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Anthracene	120-12-7	0.13	1	7.23E+05	-	3.23E+09	-	-	-	-	8.85E+05
Anthraquinone, 9,10-	84-65-1	0.1	1	-	-	3.23E+09	5.16E+03	4.09E+04	-	4.58E+03	5.90E+03
Antimony (metallic)	7440-36-0	-	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Antimony Pentoxide	1314-60-9	-	1	-	-	3.23E+09	-	-	-	-	1.47E+03
Antimony Potassium Tartrate	11071-15-1	-	1	-	-	3.23E+09	-	-	-	-	2.65E+03
Antimony Tetroxide	1332-81-6	-	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Antimony Trichloride	10025-91-9	-	1	-	-	3.23E+09	-	-	-	-	-
Antimony Trioxide	1309-64-4	-	1	-	-	3.23E+09	-	-	-	-	-
Apollo	74115-24-5	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Aramite	140-57-8	0.1	1	-	-	3.23E+09	8.26E+03	6.54E+04	1.16E+09	7.33E+03	1.47E+05
Aroclor 1016	12674-11-2	0.14	1	8.07E+05	-	3.23E+09	2.95E+03	1.67E+04	1.03E+05	2.45E+03	2.06E+02
Aroclor 1221	11104-28-2	0.14	1	1.57E+05	-	3.23E+09	1.03E+02	5.84E+02	7.00E+02	7.80E+01	-
Aroclor 1232	11141-16-5	0.14	1	1.54E+05	-	3.23E+09	1.03E+02	5.84E+02	6.91E+02	7.78E+01	-
Aroclor 1242	53469-21-9	0.14	1	1.09E+06	-	3.23E+09	1.03E+02	5.84E+02	4.89E+03	8.62E+01	-
Aroclor 1248	12672-29-6	0.14	1	7.08E+05	-	3.23E+09	1.03E+02	5.84E+02	3.17E+03	8.54E+01	-
Aroclor 1254	11097-69-1	0.14	1	1.16E+06	-	3.23E+09	1.03E+02	5.84E+02	5.21E+03	8.63E+01	5.90E+01
Aroclor 1260	11096-82-5	0.14	1	1.82E+06	-	3.23E+09	1.03E+02	5.84E+02	8.13E+03	8.68E+01	-
Aroclor 5460	11126-42-4	0.14	1	9.89E+05	-	3.23E+09	-	-	-	-	1.77E+03
Arsenic Salts	NA	0.03	0.6	-	-	3.23E+09	-	-	-	-	-
Arsenic, Inorganic	7440-38-2	0.03	0.6	-	-	3.23E+09	2.29E+02	3.64E+03	1.92E+06	2.16E+02	1.47E+03

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	-	-	-	
Aminoazobenzene, p-	60-09-3	-	-	-	
Aminobiphenyl, 4-	92-67-1	-	-	-	8.73E+00 ca
Aminophenol, m-	591-27-5	1.87E+06	-	2.10E+05	2.10E+05 max
Aminophenol, o-	95-55-6	-	-	-	
Aminophenol, p-	123-30-8	4.67E+05	-	5.24E+04	5.24E+04 nc
Aminopyridine, 4-	504-24-5	-	-	-	
Amitraz	33089-61-1	5.84E+04	-	6.55E+03	6.55E+03 nc
Ammonium Perchlorate	7790-98-9	-	-	2.06E+03	2.06E+03 nc
Ammonium Sulfamate	7773-06-0	-	-	5.90E+05	5.90E+05 max
Ammonium polyphosphate	68333-79-9	-	-	1.43E+08	1.43E+08 max
Amyl Alcohol, tert-	75-85-4	-	3.96E+03	3.96E+03	3.96E+03 nc
Aniline	62-53-3	1.64E+05	1.18E+08	1.83E+04	1.83E+04 nc
Anilinobenzothiazole	1843-21-6	-	-	-	
Anthracene	120-12-7	5.39E+06	-	7.60E+05	7.60E+05 max
Anthraquinone, 9,10-	84-65-1	4.67E+04	-	5.24E+03	4.58E+03 ca**
Antimony (metallic)	7440-36-0	-	-	1.18E+03	1.18E+03 nc
Antimony Pentoxide	1314-60-9	-	-	1.47E+03	1.47E+03 nc
Antimony Potassium Tartrate	11071-15-1	-	-	2.65E+03	2.65E+03 nc
Antimony Tetroxide	1332-81-6	-	-	1.18E+03	1.18E+03 nc
Antimony Trichloride	10025-91-9	-	-	-	
Antimony Trioxide	1309-64-4	-	2.36E+07	2.36E+07	2.36E+07 max
Apollo	74115-24-5	3.04E+05	-	3.40E+04	3.40E+04 nc
Aramite	140-57-8	1.17E+06	-	1.31E+05	7.33E+03 ca*
Aroclor 1016	12674-11-2	1.17E+03	-	1.75E+02	1.75E+02 nc
Aroclor 1221	11104-28-2	-	-	-	7.80E+01 ca
Aroclor 1232	11141-16-5	-	-	-	7.78E+01 ca
Aroclor 1242	53469-21-9	-	-	-	8.62E+01 ca
Aroclor 1248	12672-29-6	-	-	-	8.54E+01 ca
Aroclor 1254	11097-69-1	3.34E+02	-	5.01E+01	5.01E+01 nc
Aroclor 1260	11096-82-5	-	-	-	8.68E+01 ca
Aroclor 5460	11126-42-4	1.00E+04	-	1.50E+03	1.50E+03 nc
Arsenic Salts	NA	-	-	-	
Arsenic, Inorganic	7440-38-2	2.34E+04	1.77E+06	1.39E+03	2.16E+02 ca**

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Arsine	7784-42-1	No	No	-		-		3.50E-06	U	5.00E-05	U	1
Assure	76578-14-8	No	No	-		-		9.00E-03	U	-		1
Asulam	3337-71-1	No	No	-		-		5.00E-02	U	-		1
Atrazine	1912-24-9	No	No	2.30E-01	U	-		3.50E-02	U	-		1
Auramine	492-80-8	No	No	8.80E-01	U	2.50E-04	U	-		-		1
Avermectin B1	65195-55-3	No	No	-		-		4.00E-04	U	-		1
Azobenzene	103-33-3	No	Yes	1.10E-01	U	3.10E-05	U	-		-		1
Azodicarbonamide	123-77-3	No	No	-		-		1.00E+00	U	7.00E-06	U	1
Barium	7440-39-3	No	No	-		-		2.00E-01	U	5.00E-04	U	0.07
Barium Chromate	10294-40-3	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Barium Cyanide	542-62-1	No	No	-		-		-		-		0.07
Baygon	114-26-1	No	No	-		-		4.00E-03	U	-		1
Bayleton	43121-43-3	No	No	-		-		3.00E-02	U	-		1
Baythroid	68359-37-5	No	No	-		-		2.50E-02	U	-		1
Benefin	1861-40-1	No	Yes	-		-		3.00E-01	U	-		1
Benomyl	17804-35-2	No	No	-		-		5.00E-02	U	-		1
Bentazon	25057-89-0	No	No	-		-		3.00E-02	U	-		1
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	U	1.10E-04	U	-		-		1
Benzaldehyde	100-52-7	No	Yes	-		-		1.00E-01	U	-		1
Benzene	71-43-2	No	Yes	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1
Benzene, Ethyldimethyl	29224-55-3	No	Yes	-		-		-		-		1
Benzene, Ethylmethyl	25550-14-5	No	Yes	-		-		-		-		1
Benzene, Methylpropenyl	768-00-3	No	Yes	-		-		-		-		1
Benzene, Methylpropyl	28729-54-6	No	No	-		-		-		-		1
Benzene, Trimethyl	25551-13-7	No	Yes	-		-		-		-		1
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	No	No	1.00E-01	U	-		3.00E-04	U	-		1
Benzenethiol	108-98-5	No	Yes	-		-		1.00E-03	U	-		1
Benzidine	92-87-5	Yes	No	2.30E+02	U	6.70E-02	U	3.00E-03	U	-		1
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	U	1.10E-04	U	-		-		1
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	U	1.10E-03	U	-		-		1
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	U	1.10E-04	U	-		-		1
Benzo[g,h,i]perylene	191-24-2	No	No	-		-		-		-		1
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	U	1.10E-04	U	-		-		1
Benzofluoranthenes, total	NA	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Arsine	7784-42-1	-	1	-	-	3.23E+09	-	-	-	-	1.03E+01
Assure	76578-14-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+04
Asulam	3337-71-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Atrazine	1912-24-9	0.1	1	-	-	3.23E+09	8.98E+02	7.11E+03	-	7.97E+02	1.03E+05
Auramine	492-80-8	0.1	1	-	-	3.23E+09	2.35E+02	1.86E+03	3.30E+07	2.08E+02	-
Avermectin B1	65195-55-3	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Azobenzene	103-33-3	-	1	7.21E+05	-	3.23E+09	1.88E+03	-	5.94E+04	1.82E+03	-
Azodicarbonamide	123-77-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+06
Barium	7440-39-3	-	1	-	-	3.23E+09	-	-	-	-	5.90E+05
Barium Chromate	10294-40-3	-	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04
Barium Cyanide	542-62-1	-	1	-	-	3.23E+09	-	-	-	-	-
Baygon	114-26-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+04
Bayleton	43121-43-3	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Baythroid	68359-37-5	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Benefin	1861-40-1	-	1	4.23E+05	-	3.23E+09	-	-	-	-	8.85E+05
Benomyl	17804-35-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Bentazon	25057-89-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Benz[a]anthracene	56-55-3	0.13	1	6.09E+06	-	3.23E+09	2.83E+02	1.72E+03	1.41E+05	2.43E+02	-
Benzaldehyde	100-52-7	-	1	3.10E+04	1.16E+03	3.23E+09	-	-	-	-	2.95E+05
Benzene	71-43-2	-	1	4.88E+03	1.82E+03	3.23E+09	3.75E+03	-	1.60E+03	1.12E+03	1.18E+04
Benzene, Ethyldimethyl	29224-55-3	-	1	1.26E+04	1.31E+02	3.23E+09	-	-	-	-	-
Benzene, Ethylmethyl	25550-14-5	-	1	1.30E+04	3.30E+02	3.23E+09	-	-	-	-	-
Benzene, Methylpropenyl	768-00-3	-	1	1.58E+04	4.90E+02	3.23E+09	-	-	-	-	-
Benzene, Methylpropyl	28729-54-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Benzene, Trimethyl	25551-13-7	-	1	9.03E+03	1.82E+02	3.23E+09	-	-	-	-	-
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	0.1	1	-	-	3.23E+09	2.06E+03	1.64E+04	-	1.83E+03	8.85E+02
Benzenethiol	108-98-5	-	1	2.67E+04	1.26E+03	3.23E+09	-	-	-	-	2.95E+03
Benzidine	92-87-5	0.1	1	-	-	3.23E+09	8.98E-01	7.11E+00	1.23E+05	7.97E-01	8.85E+03
Benzo(j)fluoranthene	205-82-3	0.13	1	-	-	3.23E+09	1.72E+02	1.05E+03	7.51E+07	1.48E+02	-
Benzo[a]pyrene	50-32-8	0.13	1	-	-	3.23E+09	2.83E+01	1.72E+02	7.51E+06	2.43E+01	-
Benzo[b]fluoranthene	205-99-2	0.13	1	-	-	3.23E+09	2.83E+02	1.72E+03	7.51E+07	2.43E+02	-
Benzo[g,h,i]perylene	191-24-2	0.13	1	-	-	3.23E+09	-	-	-	-	-
Benzo[k]fluoranthene	207-08-9	0.13	1	-	-	3.23E+09	2.83E+03	1.72E+04	7.51E+07	2.43E+03	-
Benzofluoranthenes, total	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Arsine	7784-42-1	-	5.90E+06	1.03E+01	1.03E+01 nc
Assure	76578-14-8	2.10E+05	-	2.36E+04	2.36E+04 nc
Asulam	3337-71-1	1.17E+06	-	1.31E+05	1.31E+05 max
Atrazine	1912-24-9	8.18E+05	-	9.17E+04	7.97E+02 ca
Auramine	492-80-8	-	-	-	2.08E+02 ca
Avermectin B1	65195-55-3	9.35E+03	-	1.05E+03	1.05E+03 nc
Azobenzene	103-33-3	-	-	-	1.82E+03 ca
Azodicarbonamide	123-77-3	2.34E+07	8.26E+05	6.28E+05	6.28E+05 max
Barium	7440-39-3	-	5.90E+07	5.84E+05	5.84E+05 max
Barium Chromate	10294-40-3	-	2.36E+07	5.88E+04	4.10E+02 ca
Barium Cyanide	542-62-1	-	-	-	
Baygon	114-26-1	9.35E+04	-	1.05E+04	1.05E+04 nc
Bayleton	43121-43-3	7.01E+05	-	7.86E+04	7.86E+04 nc
Baythroid	68359-37-5	5.84E+05	-	6.55E+04	6.55E+04 nc
Benefin	1861-40-1	-	-	8.85E+05	8.85E+05 max
Benomyl	17804-35-2	1.17E+06	-	1.31E+05	1.31E+05 max
Bentazon	25057-89-0	7.01E+05	-	7.86E+04	7.86E+04 nc
Benz[a]anthracene	56-55-3	-	-	-	2.43E+02 ca
Benzaldehyde	100-52-7	-	-	2.95E+05	2.95E+05 sat
Benzene	71-43-2	-	5.34E+03	3.68E+03	1.12E+03 ca**
Benzene, Ethyldimethyl	29224-55-3	-	-	-	
Benzene, Ethylmethyl	25550-14-5	-	-	-	
Benzene, Methylpropenyl	768-00-3	-	-	-	
Benzene, Methylpropyl	28729-54-6	-	-	-	
Benzene, Trimethyl	25551-13-7	-	-	-	
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	7.01E+03	-	7.86E+02	7.86E+02 nc
Benzenethiol	108-98-5	-	-	2.95E+03	2.95E+03 sat
Benzidine	92-87-5	7.01E+04	-	7.86E+03	7.97E-01 ca
Benzo(j)fluoranthene	205-82-3	-	-	-	1.48E+02 ca
Benzo[a]pyrene	50-32-8	-	-	-	2.43E+01 ca
Benzo[b]fluoranthene	205-99-2	-	-	-	2.43E+02 ca
Benzo[g,h,i]perylene	191-24-2	-	-	-	
Benzo[k]fluoranthene	207-08-9	-	-	-	2.43E+03 ca
Benzofluoranthenes, total	NA	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Benzofluorene, 2,3-	243-17-4	No	No	-		-		-		-		1
Benzoic Acid	65-85-0	No	No	-		-		4.00E+00	U	-		1
Benzoic acid, 3,5-dichloro-	51-36-5	No	No	-		-		-		-		1
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	No	No	-		-		-		-		1
Benzothiazole	95-16-9	No	No	-		-		-		-		1
Benzotrichloride	98-07-7	No	Yes	1.30E+01	U	-		-		-		1
Benzyl Alcohol	100-51-6	No	No	-		-		1.00E-01	U	-		1
Benzyl Chloride	100-44-7	No	Yes	1.70E-01	U	4.90E-05	U	2.00E-03	U	1.00E-03	U	1
Beryllium and compounds	7440-41-7	No	No	-		2.40E-03	U	2.00E-03	U	2.00E-05	U	0.007
Bidrin	141-66-2	No	No	-		-		1.00E-04	U	-		1
Bifenox	42576-02-3	No	No	-		-		9.00E-03	U	-		1
Biphenthrin	82657-04-3	No	No	-		-		1.50E-02	U	-		1
Biphenyl, 1,1'-	92-52-4	No	Yes	8.00E-03	U	-		5.00E-01	U	4.00E-04	U	1
Bis(2-chloro-1-methylethyl) ether	108-60-1	No	Yes	7.00E-02	U	1.00E-05	U	4.00E-02	U	-		1
Bis(2-chloroethoxy)methane	111-91-1	No	No	-		-		3.00E-03	U	-		1
Bis(2-chloroethyl)ether	111-44-4	No	Yes	1.10E+00	U	3.30E-04	U	-		-		1
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	1.40E-02	U	2.40E-06	U	2.00E-02	U	-		1
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	No	Yes	-		-		-		-		1
Bis(chloromethyl)ether	542-88-1	No	Yes	2.20E+02	U	6.20E-02	U	-		-		1
Bis(oleoyloxy)dibutyl tin	13323-62-1	No	Yes	-		-		-		-		1
Bisphenol A	80-05-7	No	No	-		-		5.00E-02	U	-		1
Boron And Borates Only	7440-42-8	No	No	-		-		2.00E-01	U	2.00E-02	U	1
Boron Trichloride	10294-34-5	No	Yes	-		-		2.00E+00	U	2.00E-02	U	1
Boron Trifluoride	7637-07-2	No	Yes	-		-		4.00E-02	U	1.30E-02	U	1
Bromacil	314-40-9	No	No	-		-		-		-		1
Bromate	15541-45-4	No	No	7.00E-01	U	-		4.00E-03	U	-		1
Bromine	7726-95-6	No	Yes	-		-		-		-		1
Bromo-2-chloroethane, 1-	107-04-0	No	Yes	2.00E+00	U	6.00E-04	U	-		-		1
Bromo-3-fluorobenzene, 1-	1073-06-9	No	Yes	-		-		-		-		1
Bromo-4-Ethylbenzene, 1-	1585-07-5	No	Yes	-		-		-		-		1
Bromoacetic acid	79-08-3	No	No	-		-		-		-		1
Bromoacetophenone, 3-	2142-63-4	No	No	-		-		-		-		1
Bromobenzene	108-86-1	No	Yes	-		-		8.00E-03	U	6.00E-02	U	1
Bromochloromethane	74-97-5	No	Yes	-		-		-		4.00E-02	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Benzofluorene, 2,3-	243-17-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Benzoic Acid	65-85-0	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+07
Benzoic acid, 3,5-dichloro-	51-36-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Benzothiazole	95-16-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Benzotrichloride	98-07-7	-	1	9.33E+04	3.23E+02	3.23E+09	1.59E+01	-	-	1.59E+01	-
Benzyl Alcohol	100-51-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Benzyl Chloride	100-44-7	-	1	3.52E+04	1.46E+03	3.23E+09	1.21E+03	-	1.83E+03	7.31E+02	5.90E+03
Beryllium and compounds	7440-41-7	-	1	-	-	3.23E+09	-	-	3.44E+06	3.44E+06	5.90E+03
Bidrin	141-66-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Bifenox	42576-02-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+04
Biphenthrin	82657-04-3	0.1	1	-	-	3.23E+09	-	-	-	-	4.42E+04
Biphenyl, 1,1'-	92-52-4	-	1	1.57E+05	-	3.23E+09	2.58E+04	-	-	2.58E+04	1.47E+06
Bis(2-chloro-1-methylethyl) ether	108-60-1	-	1	4.83E+04	1.02E+03	3.23E+09	2.95E+03	-	1.23E+04	2.38E+03	1.18E+05
Bis(2-chloroethoxy)methane	111-91-1	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Bis(2-chloroethyl)ether	111-44-4	-	1	5.87E+04	5.05E+03	3.23E+09	1.88E+02	-	4.54E+02	1.33E+02	-
Bis(2-ethylhexyl)phthalate	117-81-7	0.1	1	-	-	3.23E+09	1.47E+04	1.17E+05	3.44E+09	1.31E+04	5.90E+04
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	-	1	8.48E+04	-	3.23E+09	-	-	-	-	-
Bis(chloromethyl)ether	542-88-1	-	1	2.59E+03	4.22E+03	3.23E+09	9.38E-01	-	1.07E-01	9.58E-02	-
Bis(oleoyloxy)dibutyl tin	13323-62-1	-	1	2.64E+06	-	3.23E+09	-	-	-	-	-
Bisphenol A	80-05-7	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Boron And Borates Only	7440-42-8	-	1	-	-	3.23E+09	-	-	-	-	5.90E+05
Boron Trichloride	10294-34-5	-	1	-	-	3.23E+09	-	-	-	-	5.90E+06
Boron Trifluoride	7637-07-2	-	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Bromacil	314-40-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromate	15541-45-4	-	1	-	-	3.23E+09	2.95E+02	-	-	2.95E+02	1.18E+04
Bromine	7726-95-6	-	1	-	-	3.23E+09	-	-	-	-	-
Bromo-2-chloroethane, 1-	107-04-0	-	1	8.17E+03	2.38E+03	3.23E+09	1.03E+02	-	3.48E+01	2.60E+01	-
Bromo-3-fluorobenzene, 1-	1073-06-9	-	1	9.79E+03	9.07E+02	3.23E+09	-	-	-	-	-
Bromo-4-Ethylbenzene, 1-	1585-07-5	-	1	1.96E+04	2.06E+02	3.23E+09	-	-	-	-	-
Bromoacetic acid	79-08-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromoacetophenone, 3-	2142-63-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromobenzene	108-86-1	-	1	1.15E+04	6.79E+02	3.23E+09	-	-	-	-	2.36E+04
Bromochloromethane	74-97-5	-	1	4.94E+03	4.03E+03	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Benzofluorene, 2,3-	243-17-4	-	-	-	
Benzoic Acid	65-85-0	9.35E+07	-	1.05E+07	1.05E+07 max
Benzoic acid, 3,5-dichloro-	51-36-5	-	-	-	
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	-	-	-	
Benzothiazole	95-16-9	-	-	-	
Benzotrichloride	98-07-7	-	-	-	1.59E+01 ca
Benzyl Alcohol	100-51-6	2.34E+06	-	2.62E+05	2.62E+05 max
Benzyl Chloride	100-44-7	-	1.28E+03	1.05E+03	7.31E+02 ca**
Beryllium and compounds	7440-41-7	-	2.36E+06	5.88E+03	5.88E+03 nc
Bidrin	141-66-2	2.34E+03	-	2.62E+02	2.62E+02 nc
Bifenox	42576-02-3	2.10E+05	-	2.36E+04	2.36E+04 nc
Biphenthrin	82657-04-3	3.51E+05	-	3.93E+04	3.93E+04 nc
Biphenyl, 1,1'-	92-52-4	-	2.29E+03	2.29E+03	2.29E+03 nc
Bis(2-chloro-1-methylethyl) ether	108-60-1	-	-	1.18E+05	2.38E+03 sat
Bis(2-chloroethoxy)methane	111-91-1	7.01E+04	-	7.86E+03	7.86E+03 nc
Bis(2-chloroethyl)ether	111-44-4	-	-	-	1.33E+02 ca
Bis(2-ethylhexyl)phthalate	117-81-7	4.67E+05	-	5.24E+04	1.31E+04 ca**
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	-	-	-	
Bis(chloromethyl)ether	542-88-1	-	-	-	9.58E-02 ca
Bis(oleoyloxy)dibutyl tin	13323-62-1	-	-	-	
Bisphenol A	80-05-7	1.17E+06	-	1.31E+05	1.31E+05 max
Boron And Borates Only	7440-42-8	-	2.36E+09	5.90E+05	5.90E+05 max
Boron Trichloride	10294-34-5	-	2.36E+09	5.88E+06	5.88E+06 max
Boron Trifluoride	7637-07-2	-	1.53E+09	1.18E+05	1.18E+05 max
Bromacil	314-40-9	-	-	-	
Bromate	15541-45-4	-	-	1.18E+04	2.95E+02 ca*
Bromine	7726-95-6	-	-	-	
Bromo-2-chloroethane, 1-	107-04-0	-	-	-	2.60E+01 ca
Bromo-3-fluorobenzene, 1-	1073-06-9	-	-	-	
Bromo-4-Ethylbenzene, 1-	1585-07-5	-	-	-	
Bromoacetic acid	79-08-3	-	-	-	
Bromoacetophenone, 3-	2142-63-4	-	-	-	
Bromobenzene	108-86-1	-	2.53E+04	1.22E+04	1.22E+04 sat
Bromochloromethane	74-97-5	-	7.21E+03	7.21E+03	7.21E+03 sat

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Bromodichloromethane	75-27-4	No	Yes	6.20E-02	U	3.70E-05	U	2.00E-02	U	-		1
Bromodiphenyl Ether, p-	101-55-3	No	Yes	-		-		-		-		1
Bromofluorobenzene, p-	460-00-4	No	Yes	-		-		-		-		1
Bromoform	75-25-2	No	Yes	7.90E-03	U	1.10E-06	U	2.00E-02	U	-		1
Bromomethane	74-83-9	No	Yes	-		-		1.40E-03	U	5.00E-03	U	1
Bromophenol, p-	106-41-2	No	No	-		-		-		-		1
Bromophenyl-phenyl phthalate, 4-	NA	No	No	-		-		-		-		1
Bromophos	2104-96-3	No	Yes	-		-		5.00E-03	U	-		1
Bromopyridine, 2-	109-04-6	No	No	-		-		-		-		1
Bromotrichloromethane	75-62-7	No	Yes	-		-		-		-		1
Bromoxynil	1689-84-5	No	No	-		-		2.00E-02	U	-		1
Bromoxynil Octanoate	1689-99-2	No	Yes	-		-		2.00E-02	U	-		1
Butadiene, 1,3-	106-99-0	No	Yes	3.40E+00	U	3.00E-05	U	-		2.00E-03	U	1
Butanediol, 2,3-	513-85-9	No	No	-		-		-		-		1
Butanol	35296-72-1	No	Yes	-		-		-		-		1
Butanol, N-	71-36-3	No	Yes	-		-		1.00E-01	U	-		1
Butanone-2, 4-chloro-4,4-difluoro	NA	No	No	-		-		-		-		1
Butyl Alcohol, t-	75-65-0	No	Yes	-		-		-		-		1
Butyl Benzyl Phthlate	85-68-7	No	No	1.90E-03	U	-		2.00E-01	U	-		1
Butyl Formate, tert-	762-75-4	No	Yes	-		-		-		-		1
Butyl alcohol, sec-	78-92-2	No	Yes	-		-		2.00E+00	U	3.00E+01	U	1
Butylacetate	123-86-4	No	Yes	-		-		-		-		1
Butylate	2008-41-5	No	Yes	-		-		5.00E-02	U	-		1
Butylated hydroxyanisole	25013-16-5	No	No	2.00E-04	U	5.70E-08	U	-		-		1
Butylated hydroxytoluene	128-37-0	No	No	3.60E-03	U	-		3.00E-01	U	-		1
Butylbenzene, n-	104-51-8	No	Yes	-		-		5.00E-02	U	-		1
Butylbenzene, sec-	135-98-8	No	Yes	-		-		1.00E-01	U	-		1
Butylbenzene, tert-	98-06-6	No	Yes	-		-		1.00E-01	U	-		1
Butylchloride, t-	507-20-0	No	Yes	-		-		-		-		1
Butylphthalyl Butylglycolate	85-70-1	No	No	-		-		1.00E+00	U	-		1
Butyltin	NA	No	No	-		-		-		-		1
Cacodylic Acid	75-60-5	No	No	-		-		2.00E-02	U	-		1
Cadmium (Diet)	7440-43-9	No	No	-		1.80E-03	U	1.00E-03	U	1.00E-05	U	0.025
Calcium	7440-70-2	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Bromodichloromethane	75-27-4	-	1	5.47E+03	9.31E+02	3.23E+09	3.33E+03	-	3.77E+02	3.39E+02	5.90E+04
Bromodiphenyl Ether, p-	101-55-3	-	1	2.57E+05	1.06E+02	3.23E+09	-	-	-	-	-
Bromofluorobenzene, p-	460-00-4	-	1	9.95E+03	1.06E+03	3.23E+09	-	-	-	-	-
Bromoform	75-25-2	-	1	1.34E+04	9.14E+02	3.23E+09	2.61E+04	-	3.11E+04	1.42E+04	5.90E+04
Bromomethane	74-83-9	-	1	1.93E+03	3.59E+03	3.23E+09	-	-	-	-	4.13E+03
Bromophenol, p-	106-41-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromophenyl-phenyl phthalate, 4-	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromophos	2104-96-3	-	1	1.71E+05	-	3.23E+09	-	-	-	-	1.47E+04
Bromopyridine, 2-	109-04-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Bromotrichloromethane	75-62-7	-	1	1.80E+04	4.25E+02	3.23E+09	-	-	-	-	-
Bromoxynil	1689-84-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Bromoxynil Octanoate	1689-99-2	-	1	6.55E+05	-	3.23E+09	-	-	-	-	5.90E+04
Butadiene, 1,3-	106-99-0	-	1	1.20E+03	6.67E+02	3.23E+09	6.07E+01	-	1.02E+02	3.81E+01	-
Butanediol, 2,3-	513-85-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Butanol	35296-72-1	-	1	4.02E+04	1.47E+04	3.23E+09	-	-	-	-	-
Butanol, N-	71-36-3	-	1	4.13E+04	7.64E+03	3.23E+09	-	-	-	-	2.95E+05
Butanone-2, 4-chloro-4,4-difluoro	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Butyl Alcohol, t-	75-65-0	-	1	3.96E+04	-	3.23E+09	-	-	-	-	-
Butyl Benzyl Phthlate	85-68-7	0.1	1	-	-	3.23E+09	1.09E+05	8.61E+05	-	9.65E+04	5.90E+05
Butyl Formate, tert-	762-75-4	-	1	6.00E+03	2.99E+03	3.23E+09	-	-	-	-	-
Butyl alcohol, sec-	78-92-2	-	1	4.03E+04	2.13E+04	3.23E+09	-	-	-	-	5.90E+06
Butylacetate	123-86-4	-	1	1.18E+04	1.79E+03	3.23E+09	-	-	-	-	-
Butylate	2008-41-5	-	1	1.19E+05	-	3.23E+09	-	-	-	-	1.47E+05
Butylated hydroxyanisole	25013-16-5	0.1	1	-	-	3.23E+09	1.03E+06	8.18E+06	1.45E+11	9.17E+05	-
Butylated hydroxytoluene	128-37-0	0.1	1	-	-	3.23E+09	5.74E+04	4.55E+05	-	5.09E+04	8.85E+05
Butylbenzene, n-	104-51-8	-	1	1.12E+04	1.07E+02	3.23E+09	-	-	-	-	1.47E+05
Butylbenzene, sec-	135-98-8	-	1	1.01E+04	1.45E+02	3.23E+09	-	-	-	-	2.95E+05
Butylbenzene, tert-	98-06-6	-	1	1.01E+04	1.83E+02	3.23E+09	-	-	-	-	2.95E+05
Butylchloride, t-	507-20-0	-	1	2.34E+03	1.33E+03	3.23E+09	-	-	-	-	-
Butylphthalyl Butylglycolate	85-70-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+06
Butyltin	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Cacodylic Acid	75-60-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Cadmium (Diet)	7440-43-9	0.001	1	-	-	3.23E+09	-	-	4.59E+06	4.59E+06	2.95E+03
Calcium	7440-70-2	-	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Bromodichloromethane	75-27-4	-	-	5.90E+04	3.39E+02 ca
Bromodiphenyl Ether, p-	101-55-3	-	-	-	
Bromofluorobenzene, p-	460-00-4	-	-	-	
Bromoform	75-25-2	-	-	5.90E+04	1.42E+04 sat
Bromomethane	74-83-9	-	3.53E+02	3.25E+02	3.25E+02 nc
Bromophenol, p-	106-41-2	-	-	-	
Bromophenyl-phenyl phthalate, 4-	NA	-	-	-	
Bromophos	2104-96-3	-	-	1.47E+04	1.47E+04 nc
Bromopyridine, 2-	109-04-6	-	-	-	
Bromotrichloromethane	75-62-7	-	-	-	
Bromoxynil	1689-84-5	4.67E+05	-	5.24E+04	5.24E+04 nc
Bromoxynil Octanoate	1689-99-2	-	-	5.90E+04	5.90E+04 nc
Butadiene, 1,3-	106-99-0	-	8.73E+01	8.73E+01	3.81E+01 ca**
Butanediol, 2,3-	513-85-9	-	-	-	
Butanol	35296-72-1	-	-	-	
Butanol, N-	71-36-3	-	-	2.95E+05	2.95E+05 sat
Butanone-2, 4-chloro-4,4-difluoro	NA	-	-	-	
Butyl Alcohol, t-	75-65-0	-	-	-	
Butyl Benzyl Phthlate	85-68-7	4.67E+06	-	5.24E+05	9.65E+04 ca**
Butyl Formate, tert-	762-75-4	-	-	-	
Butyl alcohol, sec-	78-92-2	-	4.41E+07	5.20E+06	5.20E+06 sat
Butylacetate	123-86-4	-	-	-	
Butylate	2008-41-5	-	-	1.47E+05	1.47E+05 max
Butylated hydroxyanisole	25013-16-5	-	-	-	9.17E+05 max
Butylated hydroxytoluene	128-37-0	7.01E+06	-	7.86E+05	5.09E+04 ca*
Butylbenzene, n-	104-51-8	-	-	1.47E+05	1.47E+05 sat
Butylbenzene, sec-	135-98-8	-	-	2.95E+05	2.95E+05 sat
Butylbenzene, tert-	98-06-6	-	-	2.95E+05	2.95E+05 sat
Butylchloride, t-	507-20-0	-	-	-	
Butylphthalyl Butylglycolate	85-70-1	2.34E+07	-	2.62E+06	2.62E+06 max
Butyltin	NA	-	-	-	
Cacodylic Acid	75-60-5	4.67E+05	-	5.24E+04	5.24E+04 nc
Cadmium (Diet)	7440-43-9	5.84E+04	1.18E+06	2.80E+03	2.80E+03 nc
Calcium	7440-70-2	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Calcium Chlorate	10137-74-3	No	No	-		-		-		-		1
Calcium Chromate	13765-19-0	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Calcium Cyanide	592-01-8	No	No	-		-		1.00E-03	U	-		1
Calcium pyrophosphate	7790-76-3	No	No	-		-		4.86E+01	U	-		1
Caprolactam	105-60-2	No	No	-		-		5.00E-01	U	2.20E-03	U	1
Captafol	2425-06-1	No	No	1.50E-01	U	4.30E-05	U	2.00E-03	U	-		1
Captan	133-06-2	No	No	2.30E-03	U	6.60E-07	U	1.30E-01	U	-		1
Carbaryl	63-25-2	No	No	-		-		1.00E-01	U	-		1
Carbazole	86-74-8	No	No	-		-		-		-		1
Carbofuran	1563-66-2	No	No	-		-		5.00E-03	U	-		1
Carbon Disulfide	75-15-0	No	Yes	-		-		1.00E-01	U	7.00E-01	U	1
Carbon Tetrachloride	56-23-5	No	Yes	7.00E-02	U	6.00E-06	U	4.00E-03	U	1.00E-01	U	1
Carbosulfan	55285-14-8	No	No	-		-		1.00E-02	U	-		1
Carboxin	5234-68-4	No	No	-		-		1.00E-01	U	-		1
Catechol	120-80-9	No	No	-		-		-		-		1
Ceric oxide	1306-38-3	No	No	-		-		-		9.00E-04	U	1
Cerium, Stable	7440-45-1	No	No	-		-		-		-		1
Chloral	75-87-6	No	Yes	-		-		-		-		1
Chloral Hydrate	302-17-0	No	Yes	-		-		1.00E-01	U	-		1
Chloramben	133-90-4	No	No	-		-		1.50E-02	U	-		1
Chloramine	127-65-1	No	No	-		-		-		-		1
Chloranil	118-75-2	No	No	4.03E-01	U	-		-		-		1
Chlorate (ClO3) as	14866-68-3	No	No	-		-		-		-		1
Chlordane	12789-03-6	No	Yes	3.50E-01	U	1.00E-04	U	5.00E-04	U	7.00E-04	U	1
Chlordane (alpha)	5103-71-9	No	Yes	-		-		-		-		1
Chlordane (gamma)	5103-74-2	No	Yes	-		-		-		-		1
Chlordecone (Kepone)	143-50-0	No	No	1.00E+01	U	4.60E-03	U	3.00E-04	U	-		1
Chlorfenvinphos	470-90-6	No	No	-		-		7.00E-04	U	-		1
Chloride	16887-00-6	No	No	-		-		-		-		1
Chlorimuron, Ethyl-	90982-32-4	No	No	-		-		2.00E-02	U	-		1
Chlorinated Hydrocarbons (total)	NA	No	No	-		-		-		-		1
Chlorine	7782-50-5	No	Yes	-		-		1.00E-01	U	1.45E-04	U	1
Chlorine Dioxide	10049-04-4	No	Yes	-		-		3.00E-02	U	2.00E-04	U	1
Chlorite	14998-27-7	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Calcium Chlorate	10137-74-3	-	1	-	-	3.23E+09	-	-	-	-	-
Calcium Chromate	13765-19-0	-	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04
Calcium Cyanide	592-01-8	-	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Calcium pyrophosphate	7790-76-3	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Caprolactam	105-60-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+06
Captafol	2425-06-1	0.1	1	-	-	3.23E+09	1.38E+03	1.09E+04	1.92E+08	1.22E+03	5.90E+03
Captan	133-06-2	0.1	1	-	-	3.23E+09	8.98E+04	7.11E+05	1.25E+10	7.97E+04	3.83E+05
Carbaryl	63-25-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Carbazole	86-74-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Carbofuran	1563-66-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Carbon Disulfide	75-15-0	-	1	1.61E+03	7.38E+02	3.23E+09	-	-	-	-	2.95E+05
Carbon Tetrachloride	56-23-5	-	1	2.06E+03	4.58E+02	3.23E+09	2.95E+03	-	8.78E+02	6.76E+02	1.18E+04
Carbosulfan	55285-14-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Carboxin	5234-68-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Catechol	120-80-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ceric oxide	1306-38-3	-	1	-	-	3.23E+09	-	-	-	-	-
Cerium, Stable	7440-45-1	-	1	-	-	3.23E+09	-	-	-	-	-
Chloral	75-87-6	-	1	2.14E+05	3.39E+03	3.23E+09	-	-	-	-	-
Chloral Hydrate	302-17-0	-	1	2.02E+05	-	3.23E+09	-	-	-	-	2.95E+05
Chloramben	133-90-4	0.1	1	-	-	3.23E+09	-	-	-	-	4.42E+04
Chloramine	127-65-1	-	1	-	-	3.23E+09	-	-	-	-	-
Chloranil	118-75-2	0.1	1	-	-	3.23E+09	5.12E+02	4.06E+03	-	4.55E+02	-
Chlorate (ClO3) as	14866-68-3	-	1	-	-	3.23E+09	-	-	-	-	-
Chlordane	12789-03-6	0.04	1	1.49E+06	-	3.23E+09	5.90E+02	1.17E+04	3.81E+04	5.53E+02	1.47E+03
Chlordane (alpha)	5103-71-9	-	1	2.05E+06	-	3.23E+09	-	-	-	-	-
Chlordane (gamma)	5103-74-2	-	1	2.05E+06	-	3.23E+09	-	-	-	-	-
Chlordecone (Kepone)	143-50-0	0.1	1	-	-	3.23E+09	2.06E+01	1.64E+02	1.80E+06	1.83E+01	8.85E+02
Chlorfenvinphos	470-90-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Chloride	16887-00-6	-	1	-	-	3.23E+09	-	-	-	-	-
Chlorimuron, Ethyl-	90982-32-4	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Chlorinated Hydrocarbons (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorine	7782-50-5	-	1	1.69E+03	2.78E+03	3.23E+09	-	-	-	-	2.95E+05
Chlorine Dioxide	10049-04-4	-	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Chlorite	14998-27-7	-	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Calcium Chlorate	10137-74-3	-	-	-	
Calcium Chromate	13765-19-0	-	2.36E+07	5.88E+04	4.10E+02 ca
Calcium Cyanide	592-01-8	-	-	2.95E+03	2.95E+03 nc
Calcium pyrophosphate	7790-76-3	-	-	1.43E+08	1.43E+08 max
Caprolactam	105-60-2	1.17E+07	2.60E+08	1.30E+06	1.30E+06 max
Captafol	2425-06-1	4.67E+04	-	5.24E+03	1.22E+03 ca**
Captan	133-06-2	3.04E+06	-	3.40E+05	7.97E+04 ca**
Carbaryl	63-25-2	2.34E+06	-	2.62E+05	2.62E+05 max
Carbazole	86-74-8	-	-	-	
Carbofuran	1563-66-2	1.17E+05	-	1.31E+04	1.31E+04 nc
Carbon Disulfide	75-15-0	-	4.12E+04	3.61E+04	3.61E+04 sat
Carbon Tetrachloride	56-23-5	-	7.52E+03	4.59E+03	6.76E+02 sat
Carbosulfan	55285-14-8	2.34E+05	-	2.62E+04	2.62E+04 nc
Carboxin	5234-68-4	2.34E+06	-	2.62E+05	2.62E+05 max
Catechol	120-80-9	-	-	-	
Ceric oxide	1306-38-3	-	1.06E+08	1.06E+08	1.06E+08 max
Cerium, Stable	7440-45-1	-	-	-	
Chloral	75-87-6	-	-	-	
Chloral Hydrate	302-17-0	-	-	2.95E+05	2.95E+05 max
Chloramben	133-90-4	3.51E+05	-	3.93E+04	3.93E+04 nc
Chloramine	127-65-1	-	-	-	
Chloranil	118-75-2	-	-	-	4.55E+02 ca
Chlorate (ClO3) as	14866-68-3	-	-	-	
Chlordane	12789-03-6	2.92E+04	3.81E+04	1.35E+03	5.53E+02 ca**
Chlordane (alpha)	5103-71-9	-	-	-	
Chlordane (gamma)	5103-74-2	-	-	-	
Chlordecone (Kepone)	143-50-0	7.01E+03	-	7.86E+02	1.83E+01 ca*
Chlorfenvinphos	470-90-6	1.64E+04	-	1.83E+03	1.83E+03 nc
Chloride	16887-00-6	-	-	-	
Chlorimuron, Ethyl-	90982-32-4	4.67E+05	-	5.24E+04	5.24E+04 nc
Chlorinated Hydrocarbons (total)	NA	-	-	-	
Chlorine	7782-50-5	-	8.92E+00	8.92E+00	8.92E+00 nc
Chlorine Dioxide	10049-04-4	-	2.36E+07	8.82E+04	8.82E+04 nc
Chlorite	14998-27-7	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Chlorite (Sodium Salt)	7758-19-2	No	No	-		-		3.00E-02	U	-		1
Chloro-1,1-difluoroethane, 1-	75-68-3	No	Yes	-		-		-		5.00E+01	U	1
Chloro-1,3-butadiene, 2-	126-99-8	No	Yes	-		3.00E-04	U	2.00E-02	U	2.00E-02	U	1
Chloro-2-methylaniline HCl, 4-	3165-93-3	No	No	4.60E-01	U	-		-		-		1
Chloro-2-methylaniline, 4-	95-69-2	No	No	1.00E-01	U	7.70E-05	U	3.00E-03	U	-		1
Chloro-2-methylphenol, 4-	1570-64-5	No	No	-		-		-		-		1
Chloro-4-methylphenol	35421-08-0	No	No	-		-		-		-		1
Chloro-6-fluorophenol, 2-	2040-90-6	No	No	-		-		-		-		1
Chloroacetaldehyde, 2-	107-20-0	No	Yes	2.70E-01	U	-		-		-		1
Chloroacetamide	79-07-2	No	No	-		-		-		-		1
Chloroacetic Acid	79-11-8	No	No	-		-		2.00E-03	U	-		1
Chloroacetophenone, 2-	532-27-4	No	No	-		-		-		3.00E-05	U	1
Chloroaniline	27134-26-5	No	No	-		-		-		-		1
Chloroaniline, 3-	108-42-9	No	No	-		-		-		-		1
Chloroaniline, p-	106-47-8	No	No	2.00E-01	U	-		4.00E-03	U	-		1
Chlorobenzene	108-90-7	No	Yes	-		-		2.00E-02	U	5.00E-02	U	1
Chlorobenzene sulfonic acid, p-	98-66-8	No	No	-		-		-		-		1
Chlorobenzenes (total)	NA	No	No	-		-		-		-		1
Chlorobenzilate	510-15-6	No	No	1.10E-01	U	3.10E-05	U	2.00E-02	U	-		1
Chlorobenzoic Acid, p-	74-11-3	No	No	-		-		3.00E-02	U	-		1
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	No	Yes	-		-		-		-		1
Chlorobenzotrifluoride, 4-	98-56-6	No	Yes	-		-		3.00E-03	U	3.00E-01	U	1
Chlorobiphenyl, p-	2051-62-9	No	Yes	-		-		-		-		1
Chlorobutane, 1-	109-69-3	No	Yes	-		-		4.00E-02	U	-		1
Chlorobutane, 2-	78-86-4	No	Yes	-		-		-		-		1
Chlorocyclopentadiene	41851-50-7	No	Yes	-		-		-		-		1
Chlorodibromoethane	73506-94-2	No	No	-		-		-		-		1
Chlorodifluoromethane	75-45-6	No	Yes	-		-		-		5.00E+01	U	1
Chloroethanol, 2-	107-07-3	No	Yes	-		-		2.00E-02	U	-		1
Chloroethylvinyl ether, 2-	110-75-8	No	Yes	-		-		-		-		1
Chloroform	67-66-3	No	Yes	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1
Chloromethane	74-87-3	No	Yes	-		-		-		9.00E-02	U	1
Chloromethyl Methyl Ether	107-30-2	No	Yes	2.40E+00	U	6.90E-04	U	-		-		1
Chloronaphthalene, Beta-	91-58-7	No	Yes	-		-		8.00E-02	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Chlorite (Sodium Salt)	7758-19-2	-	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Chloro-1,1-difluoroethane, 1-	75-68-3	-	1	1.42E+03	1.14E+03	3.23E+09	-	-	-	-	-
Chloro-1,3-butadiene, 2-	126-99-8	-	1	1.49E+03	7.51E+02	3.23E+09	-	-	1.27E+01	1.27E+01	5.90E+04
Chloro-2-methylaniline HCl, 4-	3165-93-3	0.1	1	-	-	3.23E+09	4.49E+02	3.56E+03	-	3.99E+02	-
Chloro-2-methylaniline, 4-	95-69-2	0.1	1	-	-	3.23E+09	2.06E+03	1.64E+04	1.07E+08	1.83E+03	8.85E+03
Chloro-2-methylphenol, 4-	1570-64-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloro-4-methylphenol	35421-08-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloro-6-fluorophenol, 2-	2040-90-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloroacetaldehyde, 2-	107-20-0	-	1	2.56E+04	2.83E+04	3.23E+09	7.65E+02	-	-	7.65E+02	-
Chloroacetamide	79-07-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloroacetic Acid	79-11-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Chloroacetophenone, 2-	532-27-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloroaniline	27134-26-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloroaniline, 3-	108-42-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chloroaniline, p-	106-47-8	0.1	1	-	-	3.23E+09	1.03E+03	8.18E+03	-	9.17E+02	1.18E+04
Chlorobenzene	108-90-7	-	1	8.90E+03	7.61E+02	3.23E+09	-	-	-	-	5.90E+04
Chlorobenzene sulfonic acid, p-	98-66-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorobenzenes (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorobenzilate	510-15-6	0.1	1	-	-	3.23E+09	1.88E+03	1.49E+04	2.66E+08	1.67E+03	5.90E+04
Chlorobenzoic Acid, p-	74-11-3	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	-	1	2.14E+05	9.07E+01	3.23E+09	-	-	-	-	-
Chlorobenzotrifluoride, 4-	98-56-6	-	1	9.33E+03	1.17E+02	3.23E+09	-	-	-	-	8.85E+03
Chlorobiphenyl, p-	2051-62-9	-	1	1.78E+05	-	3.23E+09	-	-	-	-	-
Chlorobutane, 1-	109-69-3	-	1	2.42E+03	7.29E+02	3.23E+09	-	-	-	-	1.18E+05
Chlorobutane, 2-	78-86-4	-	1	2.01E+03	6.51E+02	3.23E+09	-	-	-	-	-
Chlorocyclopentadiene	41851-50-7	-	1	2.60E+03	9.88E+02	3.23E+09	-	-	-	-	-
Chlorodibromoethane	73506-94-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorodifluoromethane	75-45-6	-	1	1.30E+03	1.68E+03	3.23E+09	-	-	-	-	-
Chloroethanol, 2-	107-07-3	-	1	1.08E+05	1.11E+05	3.23E+09	-	-	-	-	5.90E+04
Chloroethylvinyl ether, 2-	110-75-8	-	1	2.21E+03	1.64E+03	3.23E+09	-	-	-	-	-
Chloroform	67-66-3	-	1	3.62E+03	2.54E+03	3.23E+09	6.66E+03	-	4.03E+02	3.80E+02	2.95E+04
Chloromethane	74-87-3	-	1	1.62E+03	1.32E+03	3.23E+09	-	-	-	-	-
Chloromethyl Methyl Ether	107-30-2	-	1	7.35E+03	2.58E+04	3.23E+09	8.60E+01	-	2.72E+01	2.07E+01	-
Chloronaphthalene, Beta-	91-58-7	0.13	1	1.10E+05	-	3.23E+09	-	-	-	-	2.36E+05

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Chlorite (Sodium Salt)	7758-19-2	-	-	8.85E+04	8.85E+04 nc
Chloro-1,1-difluoroethane, 1-	75-68-3	-	2.59E+06	2.59E+06	2.59E+06 sat
Chloro-1,3-butadiene, 2-	126-99-8	-	1.09E+03	1.07E+03	1.27E+01 ca*
Chloro-2-methylaniline HCl, 4-	3165-93-3	-	-	-	3.99E+02 ca
Chloro-2-methylaniline, 4-	95-69-2	7.01E+04	-	7.86E+03	1.83E+03 ca**
Chloro-2-methylphenol, 4-	1570-64-5	-	-	-	
Chloro-4-methylphenol	35421-08-0	-	-	-	
Chloro-6-fluorophenol, 2-	2040-90-6	-	-	-	
Chloroacetaldehyde, 2-	107-20-0	-	-	-	7.65E+02 ca
Chloroacetamide	79-07-2	-	-	-	
Chloroacetic Acid	79-11-8	4.67E+04	-	5.24E+03	5.24E+03 nc
Chloroacetophenone, 2-	532-27-4	-	3.54E+06	3.54E+06	3.54E+06 max
Chloroaniline	27134-26-5	-	-	-	
Chloroaniline, 3-	108-42-9	-	-	-	
Chloroaniline, p-	106-47-8	9.35E+04	-	1.05E+04	9.17E+02 ca*
Chlorobenzene	108-90-7	-	1.62E+04	1.27E+04	1.27E+04 sat
Chlorobenzene sulfonic acid, p-	98-66-8	-	-	-	
Chlorobenzenes (total)	NA	-	-	-	
Chlorobenzilate	510-15-6	4.67E+05	-	5.24E+04	1.67E+03 ca*
Chlorobenzoic Acid, p-	74-11-3	7.01E+05	-	7.86E+04	7.86E+04 nc
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	-	-	-	
Chlorobenzotrifluoride, 4-	98-56-6	-	1.02E+05	8.14E+03	8.14E+03 sat
Chlorobiphenyl, p-	2051-62-9	-	-	-	
Chlorobutane, 1-	109-69-3	-	-	1.18E+05	1.18E+05 sat
Chlorobutane, 2-	78-86-4	-	-	-	
Chlorocyclopentadiene	41851-50-7	-	-	-	
Chlorodibromoethane	73506-94-2	-	-	-	
Chlorodifluoromethane	75-45-6	-	2.37E+06	2.37E+06	2.37E+06 sat
Chloroethanol, 2-	107-07-3	-	-	5.90E+04	5.90E+04 nc
Chloroethylvinyl ether, 2-	110-75-8	-	-	-	
Chloroform	67-66-3	-	1.29E+04	8.99E+03	3.80E+02 ca*
Chloromethane	74-87-3	-	5.32E+03	5.32E+03	5.32E+03 sat
Chloromethyl Methyl Ether	107-30-2	-	-	-	2.07E+01 ca
Chloronaphthalene, Beta-	91-58-7	1.44E+06	-	2.03E+05	2.03E+05 max

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Chloronaphthalene, alpha-	90-13-1	No	Yes	-		-		-		-		1
Chloronitrobenzene, o-	88-73-3	No	No	3.00E-01	U	-		3.00E-03	U	1.00E-05	U	1
Chloronitrobenzene, p-	100-00-5	No	No	6.30E-03	U	-		1.00E-03	U	6.00E-04	U	1
Chlorophenol, 2-	95-57-8	No	Yes	-		-		5.00E-03	U	-		1
Chlorophenol, 3-	108-43-0	No	No	-		-		-		-		1
Chlorophenol, 4-	106-48-9	No	No	-		-		-		-		1
Chlorophenols (each)	NA	No	No	-		-		-		-		1
Chlorophenols (total)	NA	No	No	-		-		-		-		1
Chlorophenyl Methyl Sulfide, p-	123-09-1	No	Yes	-		-		-		-		1
Chlorophenyl Methyl Sulfoxide	934-73-6	No	No	-		-		-		-		1
Chlorophenyl phenyl ether, 4-	7005-72-3	No	Yes	-		-		-		-		1
Chloropicrin	76-06-2	No	Yes	-		-		-		4.00E-04	U	1
Chloropropane, 2-	75-29-6	No	Yes	-		-		-		-		1
Chlorothalonil	1897-45-6	No	No	3.10E-03	U	8.90E-07	U	1.50E-02	U	-		1
Chlorotoluene, o-	95-49-8	No	Yes	-		-		2.00E-02	U	-		1
Chlorotoluene, p-	106-43-4	No	Yes	-		-		2.00E-02	U	-		1
Chlorozotocin	54749-90-5	No	No	2.40E+02	U	6.90E-02	U	-		-		1
Chlorpropham	101-21-3	No	No	-		-		2.00E-01	U	-		1
Chlorpyrifos	2921-88-2	No	No	-		-		1.00E-03	U	-		1
Chlorpyrifos Methyl	5598-13-0	No	No	-		-		1.00E-02	U	-		1
Chlorsulfuron	64902-72-3	No	No	-		-		5.00E-02	U	-		1
Chlorthiophos	60238-56-4	No	No	-		-		8.00E-04	U	-		1
Chromium(III), Insoluble Salts	16065-83-1	No	No	-		-		1.50E+00	U	-		0.013
Chromium(VI)	18540-29-9	Yes	No	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025
Chromium, Total	7440-47-3	No	No	-		-		-		-		0.013
Chrysene	218-01-9	Yes	No	7.30E-03	U	1.10E-05	U	-		-		1
Cobalt	7440-48-4	No	No	-		9.00E-03	U	3.00E-04	U	6.00E-06	U	1
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	No	No	-		-		-		-		1
Copper	7440-50-8	No	No	-		-		4.00E-02	U	-		1
Copper Cyanide	544-92-3	No	No	-		-		5.00E-03	U	-		1
Coronene	191-07-1	No	No	-		-		-		-		1
Creosote	8001-58-9	No	No	-		-		-		-		1
Cresol, m-	108-39-4	No	No	-		-		5.00E-02	U	6.00E-01	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Chloronaphthalene, alpha-	90-13-1	-	1	1.05E+05	2.66E+02	3.23E+09	-	-	-	-	-
Chloronitrobenzene, o-	88-73-3	0.1	1	-	-	3.23E+09	6.88E+02	5.45E+03	-	6.11E+02	8.85E+03
Chloronitrobenzene, p-	100-00-5	0.1	1	-	-	3.23E+09	3.28E+04	2.60E+05	-	2.91E+04	2.95E+03
Chlorophenol, 2-	95-57-8	-	1	1.71E+05	2.19E+04	3.23E+09	-	-	-	-	1.47E+04
Chlorophenol, 3-	108-43-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorophenol, 4-	106-48-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorophenols (each)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorophenols (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorophenyl Methyl Sulfide, p-	123-09-1	-	1	6.97E+04	2.73E+02	3.23E+09	-	-	-	-	-
Chlorophenyl Methyl Sulfoxide	934-73-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Chlorophenyl phenyl ether, 4-	7005-72-3	-	1	1.83E+05	-	3.23E+09	-	-	-	-	-
Chloropicrin	76-06-2	-	1	6.46E+03	6.17E+02	3.23E+09	-	-	-	-	-
Chloropropane, 2-	75-29-6	-	1	1.79E+03	1.32E+03	3.23E+09	-	-	-	-	-
Chlorothalonil	1897-45-6	0.1	1	-	-	3.23E+09	6.66E+04	5.28E+05	9.28E+09	5.91E+04	4.42E+04
Chlorotoluene, o-	95-49-8	-	1	1.12E+04	9.07E+02	3.23E+09	-	-	-	-	5.90E+04
Chlorotoluene, p-	106-43-4	-	1	1.01E+04	2.53E+02	3.23E+09	-	-	-	-	5.90E+04
Chlorozotocin	54749-90-5	0.1	1	-	-	3.23E+09	8.60E-01	6.82E+00	1.20E+05	7.64E-01	-
Chlorpropham	101-21-3	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+05
Chlorpyrifos	2921-88-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Chlorpyrifos Methyl	5598-13-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Chlorsulfuron	64902-72-3	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Chlorthiophos	60238-56-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+03
Chromium(III), Insoluble Salts	16065-83-1	-	1	-	-	3.23E+09	-	-	-	-	4.42E+06
Chromium(VI)	18540-29-9	-	1	-	-	3.23E+09	4.13E+02	-	9.83E+04	4.11E+02	8.85E+03
Chromium, Total	7440-47-3	-	1	-	-	3.23E+09	-	-	-	-	-
Chrysene	218-01-9	0.13	1	-	-	3.23E+09	2.83E+04	1.72E+05	7.51E+08	2.43E+04	-
Cobalt	7440-48-4	-	1	-	-	3.23E+09	-	-	9.18E+05	9.18E+05	8.85E+02
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Copper	7440-50-8	-	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Copper Cyanide	544-92-3	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Coronene	191-07-1	0.13	1	-	-	3.23E+09	-	-	-	-	-
Creosote	8001-58-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Cresol, m-	108-39-4	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Chloronaphthalene, alpha-	90-13-1	-	-	-	
Chloronitrobenzene, o-	88-73-3	7.01E+04	1.18E+06	7.81E+03	6.11E+02 ca*
Chloronitrobenzene, p-	100-00-5	2.34E+04	7.08E+07	2.62E+03	2.62E+03 nc
Chlorophenol, 2-	95-57-8	-	-	1.47E+04	1.47E+04 nc
Chlorophenol, 3-	108-43-0	-	-	-	
Chlorophenol, 4-	106-48-9	-	-	-	
Chlorophenols (each)	NA	-	-	-	
Chlorophenols (total)	NA	-	-	-	
Chlorophenyl Methyl Sulfide, p-	123-09-1	-	-	-	
Chlorophenyl Methyl Sulfoxide	934-73-6	-	-	-	
Chlorophenyl phenyl ether, 4-	7005-72-3	-	-	-	
Chloropicrin	76-06-2	-	9.43E+01	9.43E+01	9.43E+01 nc
Chloropropane, 2-	75-29-6	-	-	-	
Chlorothalonil	1897-45-6	3.51E+05	-	3.93E+04	3.93E+04 nc
Chlorotoluene, o-	95-49-8	-	-	5.90E+04	5.90E+04 sat
Chlorotoluene, p-	106-43-4	-	-	5.90E+04	5.90E+04 sat
Chlorozotocin	54749-90-5	-	-	-	7.64E-01 ca
Chlorpropham	101-21-3	4.67E+06	-	5.24E+05	5.24E+05 max
Chlorpyrifos	2921-88-2	2.34E+04	-	2.62E+03	2.62E+03 nc
Chlorpyrifos Methyl	5598-13-0	2.34E+05	-	2.62E+04	2.62E+04 nc
Chlorsulfuron	64902-72-3	1.17E+06	-	1.31E+05	1.31E+05 max
Chlorthiophos	60238-56-4	1.87E+04	-	2.10E+03	2.10E+03 nc
Chromium(III), Insoluble Salts	16065-83-1	-	-	4.42E+06	4.42E+06 max
Chromium(VI)	18540-29-9	-	1.18E+07	8.84E+03	4.11E+02 ca*
Chromium, Total	7440-47-3	-	-	-	
Chrysene	218-01-9	-	-	-	2.43E+04 ca
Cobalt	7440-48-4	-	7.08E+05	8.84E+02	8.84E+02 nc
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	-	-	-	
Copper	7440-50-8	-	-	1.18E+05	1.18E+05 max
Copper Cyanide	544-92-3	-	-	1.47E+04	1.47E+04 nc
Coronene	191-07-1	-	-	-	
Creosote	8001-58-9	-	-	-	
Cresol, m-	108-39-4	1.17E+06	7.08E+10	1.31E+05	1.31E+05 max

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Cresol, o-	95-48-7	No	No	-		-		5.00E-02	U	6.00E-01	U	1
Cresol, p-	106-44-5	No	No	-		-		1.00E-01	U	6.00E-01	U	1
Cresol, p-chloro-m-	59-50-7	No	No	-		-		1.00E-01	U	-		1
Cresols	1319-77-3	No	No	-		-		1.00E-01	U	6.00E-01	U	1
Crotonaldehyde	4170-30-3	No	Yes	-		-		-		-		1
Crotonaldehyde, trans-	123-73-9	No	Yes	1.90E+00	U	-		1.00E-03	U	-		1
Cumene	98-82-8	No	Yes	-		-		1.00E-01	U	4.00E-01	U	1
Cupferron	135-20-6	No	No	2.20E-01	U	6.30E-05	U	-		-		1
Cyanazine	21725-46-2	No	No	8.40E-01	U	-		2.00E-03	U	-		1
Cyanide (CN-)	57-12-5	No	Yes	-		-		6.00E-04	U	8.00E-04	U	1
Cyanide (total complex)	NA	No	No	-		-		-		-		1
Cyanogen	460-19-5	No	Yes	-		-		1.00E-03	U	-		1
Cyanogen Bromide	506-68-3	No	Yes	-		-		9.00E-02	U	-		1
Cyanogen Chloride	506-77-4	No	Yes	-		-		5.00E-02	U	-		1
Cyclohexane	110-82-7	No	Yes	-		-		-		6.00E+00	U	1
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	No	No	2.30E-02	U	-		-		-		1
Cyclohexanone	108-94-1	No	Yes	-		-		5.00E+00	U	7.00E-01	U	1
Cyclohexene	110-83-8	No	Yes	-		-		5.00E-03	U	1.00E+00	U	1
Cyclohexylamine	108-91-8	No	Yes	-		-		2.00E-01	U	-		1
Cyclopentadiene	542-92-7	No	Yes	-		-		-		-		1
Cyhalothrin/karate	68085-85-8	No	No	-		-		5.00E-03	U	-		1
Cypermethrin	52315-07-8	No	No	-		-		1.00E-02	U	-		1
Cyromazine	66215-27-8	No	No	-		-		7.50E-03	U	-		1
DDD	72-54-8	No	No	2.40E-01	U	6.90E-05	U	-		-		1
DDD, o,p'-	53-19-0	No	No	-		-		-		-		1
DDE, p,p'-	72-55-9	No	Yes	3.40E-01	U	9.70E-05	U	-		-		1
DDT	50-29-3	No	No	3.40E-01	U	9.70E-05	U	5.00E-04	U	-		1
DDT, o,p'-	789-02-6	No	No	-		-		-		-		1
DDT/DDE/DDD (total)	NA	No	No	-		-		-		-		1
Dacthal	1861-32-1	No	No	-		-		1.00E-02	U	-		1
Dalapon	75-99-0	No	No	-		-		3.00E-02	U	-		1
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	No	No	7.00E-04	U	-		7.00E-03	U	-		1
Decane	124-18-5	No	Yes	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Cresol, o-	95-48-7	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Cresol, p-	106-44-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Cresol, p-chloro-m-	59-50-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Cresols	1319-77-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Crotonaldehyde	4170-30-3	-	1	2.61E+04	2.00E+04	3.23E+09	-	-	-	-	-
Crotonaldehyde, trans-	123-73-9	-	1	2.61E+04	1.66E+04	3.23E+09	1.09E+02	-	-	1.09E+02	2.95E+03
Cumene	98-82-8	-	1	8.56E+03	2.68E+02	3.23E+09	-	-	-	-	2.95E+05
Cupferron	135-20-6	0.1	1	-	-	3.23E+09	9.38E+02	7.44E+03	1.31E+08	8.33E+02	-
Cyanazine	21725-46-2	0.1	1	-	-	3.23E+09	2.46E+02	1.95E+03	-	2.18E+02	5.90E+03
Cyanide (CN-)	57-12-5	-	1	6.42E+04	1.00E+07	3.23E+09	-	-	-	-	1.77E+03
Cyanide (total complex)	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Cyanogen	460-19-5	-	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Cyanogen Bromide	506-68-3	-	1	-	-	3.23E+09	-	-	-	-	2.65E+05
Cyanogen Chloride	506-77-4	-	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Cyclohexane	110-82-7	-	1	1.44E+03	1.18E+02	3.23E+09	-	-	-	-	-
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	0.1	1	-	-	3.23E+09	8.98E+03	7.11E+04	-	7.97E+03	-
Cyclohexanone	108-94-1	-	1	5.75E+04	5.11E+03	3.23E+09	-	-	-	-	1.47E+07
Cyclohexene	110-83-8	-	1	2.02E+03	2.83E+02	3.23E+09	-	-	-	-	1.47E+04
Cyclohexylamine	108-91-8	-	1	1.03E+05	2.93E+05	3.23E+09	-	-	-	-	5.90E+05
Cyclopentadiene	542-92-7	-	1	2.05E+03	1.34E+03	3.23E+09	-	-	-	-	-
Cyhalothrin/karate	68085-85-8	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Cypermethrin	52315-07-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Cyromazine	66215-27-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.21E+04
DDD	72-54-8	0.1	1	-	-	3.23E+09	8.60E+02	6.82E+03	1.20E+08	7.64E+02	-
DDD, o,p'-	53-19-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
DDE, p,p'-	72-55-9	-	1	2.91E+06	-	3.23E+09	6.07E+02	-	7.65E+04	6.02E+02	-
DDT	50-29-3	0.03	1	-	-	3.23E+09	6.07E+02	1.60E+04	8.52E+07	5.85E+02	1.47E+03
DDT, o,p'-	789-02-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
DDT/DDE/DDD (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dacthal	1861-32-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Dalapon	75-99-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	0.1	1	-	-	3.23E+09	2.95E+05	2.34E+06	-	2.62E+05	2.06E+04
Decane	124-18-5	-	1	1.56E+03	2.53E+00	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Cresol, o-	95-48-7	1.17E+06	7.08E+10	1.31E+05	1.31E+05 max
Cresol, p-	106-44-5	2.34E+06	7.08E+10	2.62E+05	2.62E+05 max
Cresol, p-chloro-m-	59-50-7	2.34E+06	-	2.62E+05	2.62E+05 max
Cresols	1319-77-3	2.34E+06	7.08E+10	2.62E+05	2.62E+05 max
Crotonaldehyde	4170-30-3	-	-	-	
Crotonaldehyde, trans-	123-73-9	-	-	2.95E+03	1.09E+02 ca*
Cumene	98-82-8	-	1.25E+05	8.78E+04	8.78E+04 sat
Cupferron	135-20-6	-	-	-	8.33E+02 ca
Cyanazine	21725-46-2	4.67E+04	-	5.24E+03	2.18E+02 ca*
Cyanide (CN-)	57-12-5	-	1.88E+03	9.11E+02	9.11E+02 nc
Cyanide (total complex)	NA	-	-	-	
Cyanogen	460-19-5	-	-	2.95E+03	2.95E+03 nc
Cyanogen Bromide	506-68-3	-	-	2.65E+05	2.65E+05 max
Cyanogen Chloride	506-77-4	-	-	1.47E+05	1.47E+05 max
Cyclohexane	110-82-7	-	3.15E+05	3.15E+05	3.15E+05 sat
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	-	-	-	7.97E+03 ca
Cyclohexanone	108-94-1	-	1.47E+06	1.34E+06	1.34E+06 sat
Cyclohexene	110-83-8	-	7.37E+04	1.23E+04	1.23E+04 sat
Cyclohexylamine	108-91-8	-	-	5.90E+05	5.90E+05 sat
Cyclopentadiene	542-92-7	-	-	-	
Cyhalothrin/karate	68085-85-8	1.17E+05	-	1.31E+04	1.31E+04 nc
Cypermethrin	52315-07-8	2.34E+05	-	2.62E+04	2.62E+04 nc
Cyromazine	66215-27-8	1.75E+05	-	1.96E+04	1.96E+04 nc
DDD	72-54-8	-	-	-	7.64E+02 ca
DDD, o,p'-	53-19-0	-	-	-	
DDE, p,p'-	72-55-9	-	-	-	6.02E+02 ca
DDT	50-29-3	3.90E+04	-	1.42E+03	5.85E+02 ca**
DDT, o,p'-	789-02-6	-	-	-	
DDT/DDE/DDD (total)	NA	-	-	-	
Dacthal	1861-32-1	2.34E+05	-	2.62E+04	2.62E+04 nc
Dalapon	75-99-0	7.01E+05	-	7.86E+04	7.86E+04 nc
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	1.64E+05	-	1.83E+04	1.83E+04 nc
Decane	124-18-5	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Decanol, n-	112-30-1	No	Yes	-		-		-		-		1
Deltamethrin	52918-63-5	No	No	-		-		-		-		1
Demeton	8065-48-3	No	No	-		-		4.00E-05	U	-		1
Di(2-ethylhexyl)adipate	103-23-1	No	No	1.20E-03	U	-		6.00E-01	U	-		1
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	No	Yes	-		-		-		-		1
Di-n-butyltin bis(methyl maleate)	15546-11-9	No	No	-		-		-		-		1
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	No	No	-		-		-		-		1
Di-n-butyltin dilaurate	77-58-7	No	Yes	-		-		-		-		1
Di-n-butyltin distearate	5847-55-2	No	Yes	-		-		-		-		1
Di-n-hexylphthalate	84-75-3	No	Yes	-		-		-		-		1
Diallate	2303-16-4	No	No	6.10E-02	U	-		-		-		1
Diammonium phosphate	7783-28-0	No	No	-		-		4.86E+01	U	-		1
Diazinon	333-41-5	No	No	-		-		7.00E-04	U	-		1
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	U	1.20E-03	U	-		-		1
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	U	1.10E-03	U	-		-		1
Dibenzofuran	132-64-9	No	Yes	-		-		1.00E-03	U	-		1
Dibenzothiophene	132-65-0	No	Yes	-		-		1.00E-02	U	-		1
Dibromo-3-chloropropane, 1,2-	96-12-8	Yes	Yes	8.00E-01	U	6.00E-03	U	2.00E-04	U	2.00E-04	U	1
Dibromoacetic acid	631-64-1	No	No	-		-		-		-		1
Dibromobenzene, 1,3-	108-36-1	No	Yes	-		-		4.00E-04	U	-		1
Dibromobenzene, 1,4-	106-37-6	No	Yes	-		-		1.00E-02	U	-		1
Dibromochloromethane	124-48-1	No	Yes	8.40E-02	U	2.70E-05	U	2.00E-02	U	-		1
Dibromodichloromethane	594-18-3	No	Yes	-		-		-		-		1
Dibromodiphenyl Ether, p,p'-	2050-47-7	No	Yes	-		-		-		-		1
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	U	6.00E-04	U	9.00E-03	U	9.00E-03	U	1
Dibromomethane (Methylene Bromide)	74-95-3	No	Yes	-		-		1.00E-02	U	4.00E-03	U	1
Dibutoxy di-n-butyltin	3349-36-8	No	Yes	-		-		-		-		1
Dibutyl Phthalate	84-74-2	No	No	-		-		1.00E-01	U	-		1
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	No	No	-		-		-		-		1
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	No	Yes	-		-		-		-		1
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	No	No	-		-		-		-		1
Dibutylbis(palmitoyloxy)stannane	13323-63-2	No	Yes	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Decanol, n-	112-30-1	-	1	8.71E+04	3.19E+01	3.23E+09	-	-	-	-	-
Deltamethrin	52918-63-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Demeton	8065-48-3	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+02
Di(2-ethylhexyl)adipate	103-23-1	0.1	1	-	-	3.23E+09	1.72E+05	1.36E+06	-	1.53E+05	1.77E+06
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	-	1	1.29E+05	-	3.23E+09	-	-	-	-	-
Di-n-butyltin bis(methyl maleate)	15546-11-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Di-n-butyltin dilaurate	77-58-7	-	1	4.40E+05	-	3.23E+09	-	-	-	-	-
Di-n-butyltin distearate	5847-55-2	-	1	2.33E+06	-	3.23E+09	-	-	-	-	-
Di-n-hexylphthalate	84-75-3	-	1	1.33E+06	3.85E+00	3.23E+09	-	-	-	-	-
Diallate	2303-16-4	0.1	1	-	-	3.23E+09	3.38E+03	2.68E+04	-	3.01E+03	-
Diammonium phosphate	7783-28-0	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Diazinon	333-41-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Dibenz[a,h]anthracene	53-70-3	0.13	1	-	-	3.23E+09	2.83E+01	1.72E+02	6.88E+06	2.43E+01	-
Dibenzo(a,e)pyrene	192-65-4	0.13	1	-	-	3.23E+09	1.72E+01	1.05E+02	7.51E+06	1.48E+01	-
Dibenzofuran	132-64-9	0.03	1	2.70E+05	-	3.23E+09	-	-	-	-	2.95E+03
Dibenzothiophene	132-65-0	-	1	7.24E+05	-	3.23E+09	-	-	-	-	2.95E+04
Dibromo-3-chloropropane, 1,2-	96-12-8	-	1	4.42E+04	9.80E+02	3.23E+09	2.58E+02	-	1.88E+01	1.75E+01	5.90E+02
Dibromoacetic acid	631-64-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dibromobenzene, 1,3-	108-36-1	-	1	2.66E+04	1.59E+02	3.23E+09	-	-	-	-	1.18E+03
Dibromobenzene, 1,4-	106-37-6	-	1	3.03E+04	-	3.23E+09	-	-	-	-	2.95E+04
Dibromochloromethane	124-48-1	-	1	1.10E+04	8.02E+02	3.23E+09	2.46E+03	-	1.04E+03	7.30E+02	5.90E+04
Dibromodichloromethane	594-18-3	-	1	3.20E+04	-	3.23E+09	-	-	-	-	-
Dibromodiphenyl Ether, p,p'-	2050-47-7	-	1	5.22E+05	-	3.23E+09	-	-	-	-	-
Dibromoethane, 1,2-	106-93-4	-	1	1.19E+04	1.34E+03	3.23E+09	1.03E+02	-	5.08E+01	3.40E+01	2.65E+04
Dibromomethane (Methylene Bromide)	74-95-3	-	1	7.79E+03	2.82E+03	3.23E+09	-	-	-	-	2.95E+04
Dibutoxy di-n-butyltin	3349-36-8	-	1	8.25E+04	-	3.23E+09	-	-	-	-	-
Dibutyl Phthalate	84-74-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	-	1	3.40E+06	-	3.23E+09	-	-	-	-	-
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dibutylbis(palmitoyloxy)stannane	13323-63-2	-	1	1.20E+06	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Decanol, n-	112-30-1	-	-	-	
Deltamethrin	52918-63-5	-	-	-	
Demeton	8065-48-3	9.35E+02	-	1.05E+02	1.05E+02 nc
Di(2-ethylhexyl)adipate	103-23-1	1.40E+07	-	1.57E+06	1.53E+05 max
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	-	-	-	
Di-n-butyltin bis(methyl maleate)	15546-11-9	-	-	-	
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	-	-	-	
Di-n-butyltin dilaurate	77-58-7	-	-	-	
Di-n-butyltin distearate	5847-55-2	-	-	-	
Di-n-hexylphthalate	84-75-3	-	-	-	
Diallate	2303-16-4	-	-	-	3.01E+03 ca
Diammonium phosphate	7783-28-0	-	-	1.43E+08	1.43E+08 max
Diazinon	333-41-5	1.64E+04	-	1.83E+03	1.83E+03 nc
Dibenz[a,h]anthracene	53-70-3	-	-	-	2.43E+01 ca
Dibenzo(a,e)pyrene	192-65-4	-	-	-	1.48E+01 ca
Dibenzofuran	132-64-9	7.79E+04	-	2.84E+03	2.84E+03 nc
Dibenzothiophene	132-65-0	-	-	2.95E+04	2.95E+04 nc
Dibromo-3-chloropropane, 1,2-	96-12-8	-	3.22E+02	2.08E+02	1.75E+01 ca*
Dibromoacetic acid	631-64-1	-	-	-	
Dibromobenzene, 1,3-	108-36-1	-	-	1.18E+03	1.18E+03 sat
Dibromobenzene, 1,4-	106-37-6	-	-	2.95E+04	2.95E+04 nc
Dibromochloromethane	124-48-1	-	-	5.90E+04	7.30E+02 ca*
Dibromodichloromethane	594-18-3	-	-	-	
Dibromodiphenyl Ether, p,p'-	2050-47-7	-	-	-	
Dibromoethane, 1,2-	106-93-4	-	3.92E+03	3.41E+03	3.40E+01 ca
Dibromomethane (Methylene Bromide)	74-95-3	-	1.14E+03	1.09E+03	1.09E+03 nc
Dibutoxy di-n-butyltin	3349-36-8	-	-	-	
Dibutyl Phthalate	84-74-2	2.34E+06	-	2.62E+05	2.62E+05 max
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	-	-	-	
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	-	-	-	
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	-	-	-	
Dibutylbis(palmitoyloxy)stannane	13323-63-2	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dibutyltin Compounds	NA	No	No	-		-		3.00E-04	U	-		1
Dibutyltin diacetate	1067-33-0	No	Yes	-		-		-		-		1
Dibutyltin dichloride	683-18-1	No	Yes	-		-		-		-		1
Dibutyltin oxide	818-08-6	No	Yes	-		-		-		-		1
Dicalcium phosphate	7757-93-9	No	No	-		-		4.86E+01	U	-		1
Dicamba	1918-00-9	No	No	-		-		3.00E-02	U	-		1
Dichloro-2-butene, 1,4-	764-41-0	No	Yes	-		4.20E-03	U	-		-		1
Dichloro-2-butene, cis-1,4-	1476-11-5	No	Yes	-		4.20E-03	U	-		-		1
Dichloro-2-butene, trans-1,4-	110-57-6	No	Yes	-		4.20E-03	U	-		-		1
Dichloroacetic Acid	79-43-6	No	No	5.00E-02	U	-		4.00E-03	U	-		1
Dichloroaniline, 2,4-	554-00-7	No	No	-		-		-		-		1
Dichloroaniline, 3,4-	95-76-1	No	Yes	-		-		-		-		1
Dichlorobenzene	25321-22-6	No	Yes	-		-		-		-		1
Dichlorobenzene, 1,2-	95-50-1	No	Yes	-		-		9.00E-02	U	2.00E-01	U	1
Dichlorobenzene, 1,3-	541-73-1	No	Yes	-		-		-		-		1
Dichlorobenzene, 1,4-	106-46-7	No	Yes	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1
Dichlorobenzidine, 3,3'-	91-94-1	No	No	4.50E-01	U	3.40E-04	U	-		-		1
Dichlorobenzoic acid, -3,5	51-36-5	No	No	-		-		-		-		1
Dichlorobenzophenone, 4,4'-	90-98-2	No	No	-		-		9.00E-03	U	-		1
Dichlorobenzotrifluoride, 3,4-	328-84-7	No	Yes	-		-		-		-		1
Dichlorodifluoromethane	75-71-8	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	No	Yes	-		-		-		-		1
Dichloroethane, 1,1-	75-34-3	No	Yes	5.70E-03	U	1.60E-06	U	2.00E-01	U	-		1
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1
Dichloroethylene, 1,1-	75-35-4	No	Yes	-		-		5.00E-02	U	2.00E-01	U	1
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes	-		-		2.00E-03	U	-		1
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes	-		-		2.00E-02	U	-		1
Dichlorophenol, 2,3-	576-24-9	Yes	No	-		-		-		-		1
Dichlorophenol, 2,4-	120-83-2	No	No	-		-		3.00E-03	U	-		1
Dichlorophenol, 2,5-	583-78-8	No	No	-		-		-		-		1
Dichlorophenol, 2,6-	87-65-0	No	No	-		-		-		-		1
Dichlorophenol, 3,4-	95-77-2	No	No	-		-		-		-		1
Dichlorophenols (total)	NA	No	No	-		-		-		-		1
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	No	No	-		-		1.00E-02	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Dibutyltin Compounds	NA	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Dibutyltin diacetate	1067-33-0	-	1	1.75E+04	1.86E+00	3.23E+09	-	-	-	-	-
Dibutyltin dichloride	683-18-1	-	1	3.93E+04	-	3.23E+09	-	-	-	-	-
Dibutyltin oxide	818-08-6	-	1	-	-	3.23E+09	-	-	-	-	-
Dicalcium phosphate	7757-93-9	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Dicamba	1918-00-9	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Dichloro-2-butene, 1,4-	764-41-0	-	1	1.54E+04	5.20E+02	3.23E+09	-	-	9.35E+00	9.35E+00	-
Dichloro-2-butene, cis-1,4-	1476-11-5	-	1	1.54E+04	5.20E+02	3.23E+09	-	-	9.35E+00	9.35E+00	-
Dichloro-2-butene, trans-1,4-	110-57-6	-	1	1.54E+04	7.63E+02	3.23E+09	-	-	9.36E+00	9.36E+00	-
Dichloroacetic Acid	79-43-6	0.1	1	-	-	3.23E+09	4.13E+03	3.27E+04	-	3.67E+03	1.18E+04
Dichloroaniline, 2,4-	554-00-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichloroaniline, 3,4-	95-76-1	-	1	1.39E+05	-	3.23E+09	-	-	-	-	-
Dichlorobenzene	25321-22-6	-	1	1.61E+04	1.93E+02	3.23E+09	-	-	-	-	-
Dichlorobenzene, 1,2-	95-50-1	-	1	1.61E+04	3.76E+02	3.23E+09	-	-	-	-	2.65E+05
Dichlorobenzene, 1,3-	541-73-1	-	1	1.37E+04	2.96E+02	3.23E+09	-	-	-	-	-
Dichlorobenzene, 1,4-	106-46-7	-	1	1.44E+04	-	3.23E+09	3.82E+04	-	3.35E+03	3.08E+03	2.06E+05
Dichlorobenzidine, 3,3'-	91-94-1	0.1	1	-	-	3.23E+09	4.59E+02	3.64E+03	2.43E+07	4.07E+02	-
Dichlorobenzoic acid, -3,5	51-36-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorobenzophenone, 4,4'-	90-98-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+04
Dichlorobenzotrifluoride, 3,4-	328-84-7	-	1	1.59E+04	4.57E+01	3.23E+09	-	-	-	-	-
Dichlorodifluoromethane	75-71-8	-	1	1.16E+03	8.44E+02	3.23E+09	-	-	-	-	5.90E+05
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	-	1	1.81E+04	2.35E+02	3.23E+09	-	-	-	-	-
Dichloroethane, 1,1-	75-34-3	-	1	2.87E+03	1.69E+03	3.23E+09	3.62E+04	-	4.59E+03	4.07E+03	5.90E+05
Dichloroethane, 1,2-	107-06-2	-	1	6.31E+03	2.98E+03	3.23E+09	2.27E+03	-	6.20E+02	4.87E+02	1.77E+04
Dichloroethylene, 1,1-	75-35-4	-	1	1.59E+03	1.19E+03	3.23E+09	-	-	-	-	1.47E+05
Dichloroethylene, 1,2-cis-	156-59-2	-	1	3.45E+03	2.37E+03	3.23E+09	-	-	-	-	5.90E+03
Dichloroethylene, 1,2-trans-	156-60-5	-	1	3.46E+03	1.67E+03	3.23E+09	-	-	-	-	5.90E+04
Dichlorophenol, 2,3-	576-24-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorophenol, 2,4-	120-83-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Dichlorophenol, 2,5-	583-78-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorophenol, 2,6-	87-65-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorophenol, 3,4-	95-77-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorophenols (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	0.05	1	-	-	3.23E+09	-	-	-	-	2.95E+04

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dibutyltin Compounds	NA	7.01E+03	-	7.86E+02	7.86E+02 nc
Dibutyltin diacetate	1067-33-0	-	-	-	
Dibutyltin dichloride	683-18-1	-	-	-	
Dibutyltin oxide	818-08-6	-	-	-	
Dicalcium phosphate	7757-93-9	-	-	1.43E+08	1.43E+08 max
Dicamba	1918-00-9	7.01E+05	-	7.86E+04	7.86E+04 nc
Dichloro-2-butene, 1,4-	764-41-0	-	-	-	9.35E+00 ca
Dichloro-2-butene, cis-1,4-	1476-11-5	-	-	-	9.35E+00 ca
Dichloro-2-butene, trans-1,4-	110-57-6	-	-	-	9.36E+00 ca
Dichloroacetic Acid	79-43-6	9.35E+04	-	1.05E+04	3.67E+03 ca**
Dichloroaniline, 2,4-	554-00-7	-	-	-	
Dichloroaniline, 3,4-	95-76-1	-	-	-	
Dichlorobenzene	25321-22-6	-	-	-	
Dichlorobenzene, 1,2-	95-50-1	-	1.18E+05	8.15E+04	8.15E+04 sat
Dichlorobenzene, 1,3-	541-73-1	-	-	-	
Dichlorobenzene, 1,4-	106-46-7	-	4.21E+05	1.38E+05	3.08E+03 ca*
Dichlorobenzidine, 3,3'-	91-94-1	-	-	-	4.07E+02 ca
Dichlorobenzoic acid, -3,5	51-36-5	-	-	-	
Dichlorobenzophenone, 4,4'-	90-98-2	2.10E+05	-	2.36E+04	2.36E+04 nc
Dichlorobenzotrifluoride, 3,4-	328-84-7	-	-	-	
Dichlorodifluoromethane	75-71-8	-	4.23E+03	4.20E+03	4.20E+03 sat
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	-	-	-	
Dichloroethane, 1,1-	75-34-3	-	-	5.90E+05	4.07E+03 sat
Dichloroethane, 1,2-	107-06-2	-	1.61E+03	1.48E+03	4.87E+02 ca**
Dichloroethylene, 1,1-	75-35-4	-	1.16E+04	1.08E+04	1.08E+04 sat
Dichloroethylene, 1,2-cis-	156-59-2	-	-	5.90E+03	5.90E+03 sat
Dichloroethylene, 1,2-trans-	156-60-5	-	-	5.90E+04	5.90E+04 sat
Dichlorophenol, 2,3-	576-24-9	-	-	-	
Dichlorophenol, 2,4-	120-83-2	7.01E+04	-	7.86E+03	7.86E+03 nc
Dichlorophenol, 2,5-	583-78-8	-	-	-	
Dichlorophenol, 2,6-	87-65-0	-	-	-	
Dichlorophenol, 3,4-	95-77-2	-	-	-	
Dichlorophenols (total)	NA	-	-	-	
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	4.67E+05	-	2.77E+04	2.77E+04 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	No	No	-		-		8.00E-03	U	-		1
Dichloropropane, 1,2-	78-87-5	No	Yes	3.60E-02	U	1.00E-05	U	9.00E-02	U	4.00E-03	U	1
Dichloropropane, 1,3-	142-28-9	No	Yes	-		-		2.00E-02	U	-		1
Dichloropropane, 2,2-	594-20-7	Yes	Yes	-		-		-		-		1
Dichloropropanol, 2,3-	616-23-9	No	No	-		-		3.00E-03	U	-		1
Dichloropropene, 1,3-	542-75-6	No	Yes	1.00E-01	U	4.00E-06	U	3.00E-02	U	2.00E-02	U	1
Dichloropropene, 2,3-	78-88-6	No	Yes	-		-		-		-		1
Dichloropropene, cis-1,3-	10061-01-5	No	Yes	-		-		-		-		1
Dichloropropene, trans-1,3-	10061-02-6	No	Yes	-		-		-		-		1
Dichlorvos	62-73-7	No	No	2.90E-01	U	8.30E-05	U	5.00E-04	U	5.00E-04	U	1
Diclofop-methyl	51338-27-3	No	No	-		-		-		-		1
Dicofol	115-32-2	No	No	-		-		-		-		1
Dicyclohexylamine	101-83-7	No	Yes	-		-		-		-		1
Dicyclopentadiene	77-73-6	No	Yes	-		-		8.00E-02	U	3.00E-04	U	1
Didecyl dimethyl ammonium chloride	7173-51-5	No	No	-		-		-		-		1
Dieldrin	60-57-1	No	No	1.60E+01	U	4.60E-03	U	5.00E-05	U	-		1
Diepoxybutane	1464-53-5	No	Yes	-		-		-		-		1
Diethanolamine	111-42-2	No	No	-		-		2.00E-03	U	2.00E-04	U	1
Diethyl Phthalate	84-66-2	No	No	-		-		8.00E-01	U	-		1
Diethyl sulfate	64-67-5	No	No	-		-		-		-		1
Diethyl-p-nitrophenylphosphate	311-45-5	No	No	-		-		-		-		1
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	No	No	-		-		-		-		1
Diethylene Glycol Monobutyl Ether	112-34-5	No	No	-		-		3.00E-02	U	1.00E-04	U	1
Diethylene Glycol Monoethyl Ether	111-90-0	No	No	-		-		6.00E-02	U	3.00E-04	U	1
Diethylene-glycol	111-46-6	No	No	-		-		-		-		1
Diethylformamide	617-84-5	No	Yes	-		-		1.00E-03	U	-		1
Diethylphosphorodithioate	298-06-6	No	Yes	-		-		-		-		1
Diethylstilbestrol	56-53-1	No	No	3.50E+02	U	1.00E-01	U	-		-		1
Difenzoquat	43222-48-6	No	No	-		-		8.00E-02	U	-		1
Diflubenzuron	35367-38-5	No	No	-		-		2.00E-02	U	-		1
Difluoroethane, 1,1-	75-37-6	No	Yes	-		-		-		4.00E+01	U	1
Difluoropropane, 2,2-	420-45-1	No	Yes	-		-		-		-		1
Dihydrosafrole	94-58-6	No	Yes	4.40E-02	U	1.30E-05	U	-		-		1
Diisopropyl Ether	108-20-3	No	Yes	-		-		-		7.00E-01	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+04
Dichloropropane, 1,2-	78-87-5	-	1	5.23E+03	1.36E+03	3.23E+09	5.74E+03	-	1.34E+03	1.08E+03	2.65E+05
Dichloropropane, 1,3-	142-28-9	-	1	9.33E+03	1.49E+03	3.23E+09	-	-	-	-	5.90E+04
Dichloropropane, 2,2-	594-20-7	-	1	2.21E+03	5.27E+02	3.23E+09	-	-	-	-	-
Dichloropropanol, 2,3-	616-23-9	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Dichloropropene, 1,3-	542-75-6	-	1	4.91E+03	1.57E+03	3.23E+09	2.06E+03	-	3.13E+03	1.24E+03	8.85E+04
Dichloropropene, 2,3-	78-88-6	-	1	4.27E+03	1.07E+03	3.23E+09	-	-	-	-	-
Dichloropropene, cis-1,3-	10061-01-5	-	1	4.90E+03	1.22E+03	3.23E+09	-	-	-	-	-
Dichloropropene, trans-1,3-	10061-02-6	-	1	4.91E+03	1.57E+03	3.23E+09	-	-	-	-	-
Dichlorvos	62-73-7	0.1	1	-	-	3.23E+09	7.12E+02	5.64E+03	9.95E+07	6.32E+02	1.47E+03
Diclofop-methyl	51338-27-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dicofol	115-32-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dicyclohexylamine	101-83-7	-	1	8.62E+04	2.16E+03	3.23E+09	-	-	-	-	-
Dicyclopentadiene	77-73-6	-	1	5.67E+03	-	3.23E+09	-	-	-	-	2.36E+05
Didecyl dimethyl ammonium chloride	7173-51-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dieldrin	60-57-1	0.1	1	-	-	3.23E+09	1.29E+01	1.02E+02	1.80E+06	1.15E+01	1.47E+02
Diepoxybutane	1464-53-5	-	1	2.02E+05	1.15E+05	3.23E+09	-	-	-	-	-
Diethanolamine	111-42-2	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Diethyl Phthalate	84-66-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+06
Diethyl sulfate	64-67-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Diethyl-p-nitrophenylphosphate	311-45-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Diethylene Glycol Monobutyl Ether	112-34-5	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Diethylene Glycol Monoethyl Ether	111-90-0	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+05
Diethylene-glycol	111-46-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Diethylformamide	617-84-5	-	1	1.91E+05	1.12E+05	3.23E+09	-	-	-	-	2.95E+03
Diethylphosphorodithioate	298-06-6	-	1	1.79E+04	2.15E-02	3.23E+09	-	-	-	-	-
Diethylstilbestrol	56-53-1	0.1	1	-	-	3.23E+09	5.90E-01	4.67E+00	8.26E+04	5.24E-01	-
Difenzoquat	43222-48-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+05
Diflubenzuron	35367-38-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Difluoroethane, 1,1-	75-37-6	-	1	1.59E+03	1.43E+03	3.23E+09	-	-	-	-	-
Difluoropropane, 2,2-	420-45-1	-	1	1.01E+03	4.63E+04	3.23E+09	-	-	-	-	-
Dihydrosafrole	94-58-6	-	1	2.08E+03	-	3.23E+09	4.69E+03	-	4.09E+02	3.76E+02	-
Diisopropyl Ether	108-20-3	-	1	4.21E+03	2.26E+03	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	1.87E+05	-	2.10E+04	2.10E+04 nc
Dichloropropane, 1,2-	78-87-5	-	7.64E+02	7.62E+02	7.62E+02 nc
Dichloropropane, 1,3-	142-28-9	-	-	5.90E+04	5.90E+04 sat
Dichloropropane, 2,2-	594-20-7	-	-	-	
Dichloropropanol, 2,3-	616-23-9	7.01E+04	-	7.86E+03	7.86E+03 nc
Dichloropropene, 1,3-	542-75-6	-	3.58E+03	3.44E+03	1.24E+03 ca**
Dichloropropene, 2,3-	78-88-6	-	-	-	
Dichloropropene, cis-1,3-	10061-01-5	-	-	-	
Dichloropropene, trans-1,3-	10061-02-6	-	-	-	
Dichlorvos	62-73-7	1.17E+04	5.90E+07	1.31E+03	6.32E+02 ca**
Diclofop-methyl	51338-27-3	-	-	-	
Dicofol	115-32-2	-	-	-	
Dicyclohexylamine	101-83-7	-	-	-	
Dicyclopentadiene	77-73-6	-	6.21E+01	6.20E+01	6.20E+01 nc
Didecyl dimethyl ammonium chloride	7173-51-5	-	-	-	
Dieldrin	60-57-1	1.17E+03	-	1.31E+02	1.15E+01 ca*
Diepoxybutane	1464-53-5	-	-	-	
Diethanolamine	111-42-2	4.67E+04	2.36E+07	5.24E+03	5.24E+03 nc
Diethyl Phthalate	84-66-2	1.87E+07	-	2.10E+06	2.10E+06 max
Diethyl sulfate	64-67-5	-	-	-	
Diethyl-p-nitrophenylphosphate	311-45-5	-	-	-	
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	-	-	-	
Diethylene Glycol Monobutyl Ether	112-34-5	7.01E+05	1.18E+07	7.81E+04	7.81E+04 nc
Diethylene Glycol Monoethyl Ether	111-90-0	1.40E+06	3.54E+07	1.56E+05	1.56E+05 max
Diethylene-glycol	111-46-6	-	-	-	
Diethylformamide	617-84-5	-	-	2.95E+03	2.95E+03 nc
Diethylphosphorodithioate	298-06-6	-	-	-	
Diethylstilbestrol	56-53-1	-	-	-	5.24E-01 ca
Difenzoquat	43222-48-6	1.87E+06	-	2.10E+05	2.10E+05 max
Diflubenzuron	35367-38-5	4.67E+05	-	5.24E+04	5.24E+04 nc
Difluoroethane, 1,1-	75-37-6	-	2.31E+06	2.31E+06	2.31E+06 sat
Difluoropropane, 2,2-	420-45-1	-	-	-	
Dihydrosafrole	94-58-6	-	-	-	3.76E+02 ca
Diisopropyl Ether	108-20-3	-	1.08E+05	1.08E+05	1.08E+05 sat

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Diisopropyl Methylphosphonate	1445-75-6	No	Yes	-		-		8.00E-02	U	-		1
Dimagnesium phosphate	7782-75-4	No	No	-		-		4.86E+01	U	-		1
Dimethipin	55290-64-7	No	No	-		-		2.00E-02	U	-		1
Dimethoate	60-51-5	No	No	-		-		2.00E-04	U	-		1
Dimethoxybenzidine, 3,3'-	119-90-4	No	No	1.60E+00	U	-		-		-		1
Dimethyl Sulfate	77-78-1	No	No	-		-		-		-		1
Dimethyl Sulfide	75-18-3	No	Yes	-		-		-		-		1
Dimethyl methylphosphonate	756-79-6	No	No	1.70E-03	U	-		6.00E-02	U	-		1
Dimethylamino azobenzene [p-]	60-11-7	No	No	4.60E+00	U	1.30E-03	U	-		-		1
Dimethylaniline HCl, 2,4-	21436-96-4	No	No	5.80E-01	U	-		-		-		1
Dimethylaniline, 2,4-	95-68-1	No	No	2.00E-01	U	-		2.00E-03	U	-		1
Dimethylaniline, N,N-	121-69-7	No	Yes	-		-		2.00E-03	U	-		1
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	U	7.10E-02	U	-		-		1
Dimethylbenzidine, 3,3'-	119-93-7	No	No	1.10E+01	U	-		-		-		1
Dimethylcyclohexylamine, n,n-	98-94-2	No	Yes	-		-		-		-		1
Dimethylethyl Lead	107584-40-7	No	No	-		-		-		-		1
Dimethylformamide	68-12-2	No	Yes	-		-		1.00E-01	U	3.00E-02	U	1
Dimethylhydrazine, 1,1-	57-14-7	No	Yes	-		-		1.00E-04	U	2.00E-06	U	1
Dimethylhydrazine, 1,2-	540-73-8	No	Yes	5.50E+02	U	1.60E-01	U	-		-		1
Dimethylmercury	593-74-8	No	Yes	-		-		-		-		1
Dimethylphenethylamine	122-09-8	No	No	-		-		-		-		1
Dimethylphenol, 2,4-	105-67-9	No	No	-		-		2.00E-02	U	-		1
Dimethylphenol, 2,6-	576-26-1	No	No	-		-		6.00E-04	U	-		1
Dimethylphenol, 3,4-	95-65-8	No	No	-		-		1.00E-03	U	-		1
Dimethylphthalate	131-11-3	No	No	-		-		-		-		1
Dimethylterephthalate	120-61-6	No	Yes	-		-		1.00E-01	U	-		1
Dimethylvinylchloride	513-37-1	No	Yes	4.50E-02	U	1.30E-05	U	-		-		1
Dinitro-o-cresol, 4,6-	534-52-1	No	No	-		-		8.00E-05	U	-		1
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	No	No	-		-		2.00E-03	U	-		1
Dinitroaniline, 3,5-	618-87-1	No	No	-		-		-		-		1
Dinitrobenzene, 1,2-	528-29-0	No	No	-		-		1.00E-04	U	-		1
Dinitrobenzene, 1,3-	99-65-0	No	No	-		-		1.00E-04	U	-		1
Dinitrobenzene, 1,4-	100-25-4	No	No	-		-		1.00E-04	U	-		1
Dinitrophenol, 2,4-	51-28-5	No	No	-		-		2.00E-03	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Diisopropyl Methylphosphonate	1445-75-6	-	1	5.26E+04	5.30E+02	3.23E+09	-	-	-	-	2.36E+05
Dimagnesium phosphate	7782-75-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Dimethipin	55290-64-7	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Dimethoate	60-51-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Dimethoxybenzidine, 3,3'-	119-90-4	0.1	1	-	-	3.23E+09	1.29E+02	1.02E+03	-	1.15E+02	-
Dimethyl Sulfate	77-78-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dimethyl Sulfide	75-18-3	-	1	4.10E+03	5.34E+03	3.23E+09	-	-	-	-	-
Dimethyl methylphosphonate	756-79-6	0.1	1	-	-	3.23E+09	1.21E+05	9.62E+05	-	1.08E+05	1.77E+05
Dimethylamino azobenzene [p-]	60-11-7	0.1	1	-	-	3.23E+09	4.49E+01	3.56E+02	6.35E+06	3.99E+01	-
Dimethylaniline HCl, 2,4-	21436-96-4	0.1	1	-	-	3.23E+09	3.56E+02	2.82E+03	-	3.16E+02	-
Dimethylaniline, 2,4-	95-68-1	0.1	1	-	-	3.23E+09	1.03E+03	8.18E+03	-	9.17E+02	5.90E+03
Dimethylaniline, N,N-	121-69-7	-	1	4.32E+04	8.30E+02	3.23E+09	-	-	-	-	5.90E+03
Dimethylbenz(a)anthracene, 7,12-	57-97-6	0.13	1	-	-	3.23E+09	8.26E-01	5.03E+00	1.16E+05	7.09E-01	-
Dimethylbenzidine, 3,3'-	119-93-7	0.1	1	-	-	3.23E+09	1.88E+01	1.49E+02	-	1.67E+01	-
Dimethylcyclohexylamine, n,n-	98-94-2	-	1	5.23E+04	-	3.23E+09	-	-	-	-	-
Dimethylethyl Lead	107584-40-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dimethylformamide	68-12-2	-	1	1.76E+05	1.06E+05	3.23E+09	-	-	-	-	2.95E+05
Dimethylhydrazine, 1,1-	57-14-7	-	1	2.23E+05	1.72E+05	3.23E+09	-	-	-	-	2.95E+02
Dimethylhydrazine, 1,2-	540-73-8	-	1	2.31E+05	1.89E+05	3.23E+09	3.75E-01	-	3.69E+00	3.41E-01	-
Dimethylmercury	593-74-8	-	1	5.88E+03	4.14E+03	3.23E+09	-	-	-	-	-
Dimethylphenethylamine	122-09-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dimethylphenol, 2,4-	105-67-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Dimethylphenol, 2,6-	576-26-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+03
Dimethylphenol, 3,4-	95-65-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Dimethylphthalate	131-11-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dimethylterephthalate	120-61-6	-	1	2.95E+04	-	3.23E+09	-	-	-	-	2.95E+05
Dimethylvinylchloride	513-37-1	-	1	1.39E+03	1.09E+03	3.23E+09	4.59E+03	-	2.73E+02	2.58E+02	-
Dinitro-o-cresol, 4,6-	534-52-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+02
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Dinitroaniline, 3,5-	618-87-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dinitrobenzene, 1,2-	528-29-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Dinitrobenzene, 1,3-	99-65-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Dinitrobenzene, 1,4-	100-25-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Dinitrophenol, 2,4-	51-28-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Diisopropyl Methylphosphonate	1445-75-6	-	-	2.36E+05	2.36E+05 sat
Dimagnesium phosphate	7782-75-4	-	-	1.43E+08	1.43E+08 max
Dimethipin	55290-64-7	4.67E+05	-	5.24E+04	5.24E+04 nc
Dimethoate	60-51-5	4.67E+03	-	5.24E+02	5.24E+02 nc
Dimethoxybenzidine, 3,3'-	119-90-4	-	-	-	1.15E+02 ca
Dimethyl Sulfate	77-78-1	-	-	-	
Dimethyl Sulfide	75-18-3	-	-	-	
Dimethyl methylphosphonate	756-79-6	1.40E+06	-	1.57E+05	1.08E+05 max
Dimethylamino azobenzene [p-]	60-11-7	-	-	-	3.99E+01 ca
Dimethylaniline HCl, 2,4-	21436-96-4	-	-	-	3.16E+02 ca
Dimethylaniline, 2,4-	95-68-1	4.67E+04	-	5.24E+03	9.17E+02 ca**
Dimethylaniline, N,N-	121-69-7	-	-	5.90E+03	5.90E+03 sat
Dimethylbenz(a)anthracene, 7,12-	57-97-6	-	-	-	7.09E-01 ca
Dimethylbenzidine, 3,3'-	119-93-7	-	-	-	1.67E+01 ca
Dimethylcyclohexylamine, n,n-	98-94-2	-	-	-	
Dimethylethyl Lead	107584-40-7	-	-	-	
Dimethylformamide	68-12-2	-	1.93E+05	1.16E+05	1.16E+05 sat
Dimethylhydrazine, 1,1-	57-14-7	-	1.63E+01	1.54E+01	1.54E+01 nc
Dimethylhydrazine, 1,2-	540-73-8	-	-	-	3.41E-01 ca
Dimethylmercury	593-74-8	-	-	-	
Dimethylphenethylamine	122-09-8	-	-	-	
Dimethylphenol, 2,4-	105-67-9	4.67E+05	-	5.24E+04	5.24E+04 nc
Dimethylphenol, 2,6-	576-26-1	1.40E+04	-	1.57E+03	1.57E+03 nc
Dimethylphenol, 3,4-	95-65-8	2.34E+04	-	2.62E+03	2.62E+03 nc
Dimethylphthalate	131-11-3	-	-	-	
Dimethylterephthalate	120-61-6	-	-	2.95E+05	2.95E+05 max
Dimethylvinylchloride	513-37-1	-	-	-	2.58E+02 ca
Dinitro-o-cresol, 4,6-	534-52-1	1.87E+03	-	2.10E+02	2.10E+02 nc
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	4.67E+04	-	5.24E+03	5.24E+03 nc
Dinitroaniline, 3,5-	618-87-1	-	-	-	
Dinitrobenzene, 1,2-	528-29-0	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrobenzene, 1,3-	99-65-0	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrobenzene, 1,4-	100-25-4	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrophenol, 2,4-	51-28-5	4.67E+04	-	5.24E+03	5.24E+03 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dinitrophenols	25550-58-7	Yes	No	-		-		-		-		1
Dinitrosopentamethylenetetramine, N,N-	101-25-7	No	No	-		-		-		-		1
Dinitrotoluene Mixture, 2,4/2,6-	NA	No	No	6.80E-01	U	-		-		-		1
Dinitrotoluene, 2,4-	121-14-2	No	No	3.10E-01	U	8.90E-05	U	2.00E-03	U	-		1
Dinitrotoluene, 2,6-	606-20-2	No	No	1.50E+00	U	-		3.00E-04	U	-		1
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	No	No	-		-		2.00E-03	U	-		1
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	No	No	-		-		2.00E-03	U	-		1
Dinitrotoluene, Technical grade	25321-14-6	No	No	4.50E-01	U	-		9.00E-04	U	-		1
Dinoseb	88-85-7	No	No	-		-		1.00E-03	U	-		1
Dioxane, 1,4-	123-91-1	No	Yes	1.00E-01	U	5.00E-06	U	3.00E-02	U	3.00E-02	U	1
Diphenamid	957-51-7	No	No	-		-		3.00E-02	U	-		1
Diphenyl Sulfone	127-63-9	No	No	-		-		8.00E-04	U	-		1
Diphenylamine	122-39-4	No	No	-		-		2.50E-02	U	-		1
Diphenylhydrazine, 1,2-	122-66-7	No	No	8.00E-01	U	2.20E-04	U	-		-		1
Dipotassium phosphate	7758-11-4	No	No	-		-		4.86E+01	U	-		1
Diquat	85-00-7	No	No	-		-		2.20E-03	U	-		1
Direct Black 38	1937-37-7	No	No	7.10E+00	U	1.40E-01	U	-		-		1
Direct Blue 6	2602-46-2	No	No	7.40E+00	U	1.40E-01	U	-		-		1
Direct Brown 95	16071-86-6	No	No	6.70E+00	U	1.40E-01	U	-		-		1
Direct Sky Blue	2610-05-1	No	No	-		-		-		-		1
Disodium phosphate	7558-79-4	No	No	-		-		4.86E+01	U	-		1
Disulfoton	298-04-4	No	No	-		-		4.00E-05	U	-		1
Dithiane, 1,4-	505-29-3	No	Yes	-		-		1.00E-02	U	-		1
Diuron	330-54-1	No	No	-		-		2.00E-03	U	-		1
Dodecyl benzenesulfonic acid	27176-87-0	No	No	-		-		-		-		1
Dodine	2439-10-3	No	No	-		-		4.00E-03	U	-		1
EPTC	759-94-4	No	Yes	-		-		2.50E-02	U	-		1
Endosulfan	115-29-7	No	Yes	-		-		6.00E-03	U	-		1
Endosulfan I	959-98-8	No	Yes	-		-		-		-		1
Endosulfan II	33213-65-9	No	Yes	-		-		-		-		1
Endosulfan Sulfate	1031-07-8	No	No	-		-		-		-		1
Endothall	145-73-3	No	No	-		-		2.00E-02	U	-		1
Endrin	72-20-8	No	No	-		-		3.00E-04	U	-		1
Endrin aldehyde	7421-93-4	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Dinitrophenols	25550-58-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dinitrosopentamethylenetetramine, N,N-	101-25-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dinitrotoluene Mixture, 2,4/2,6-	NA	0.1	1	-	-	3.23E+09	3.04E+02	2.41E+03	-	2.70E+02	-
Dinitrotoluene, 2,4-	121-14-2	0.102	1	-	-	3.23E+09	6.66E+02	5.17E+03	9.28E+07	5.90E+02	5.90E+03
Dinitrotoluene, 2,6-	606-20-2	0.099	1	-	-	3.23E+09	1.38E+02	1.10E+03	-	1.22E+02	8.85E+02
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	0.006	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	0.009	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Dinitrotoluene, Technical grade	25321-14-6	0.1	1	-	-	3.23E+09	4.59E+02	3.64E+03	-	4.07E+02	2.65E+03
Dinoseb	88-85-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Dioxane, 1,4-	123-91-1	-	1	5.47E+04	1.16E+05	3.23E+09	2.06E+03	-	2.80E+04	1.92E+03	8.85E+04
Diphenamid	957-51-7	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Diphenyl Sulfone	127-63-9	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+03
Diphenylamine	122-39-4	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Diphenylhydrazine, 1,2-	122-66-7	0.1	1	-	-	3.23E+09	2.58E+02	2.05E+03	3.75E+07	2.29E+02	-
Dipotassium phosphate	7758-11-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Diquat	85-00-7	0.1	1	-	-	3.23E+09	-	-	-	-	6.49E+03
Direct Black 38	1937-37-7	0.1	1	-	-	3.23E+09	2.91E+01	2.30E+02	5.90E+04	2.58E+01	-
Direct Blue 6	2602-46-2	0.1	1	-	-	3.23E+09	2.79E+01	2.21E+02	5.90E+04	2.48E+01	-
Direct Brown 95	16071-86-6	0.1	1	-	-	3.23E+09	3.08E+01	2.44E+02	5.90E+04	2.74E+01	-
Direct Sky Blue	2610-05-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Disodium phosphate	7558-79-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Disulfoton	298-04-4	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+02
Dithiane, 1,4-	505-29-3	-	1	6.26E+04	-	3.23E+09	-	-	-	-	2.95E+04
Diuron	330-54-1	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Dodecyl benzenesulfonic acid	27176-87-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Dodine	2439-10-3	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+04
EPTC	759-94-4	-	1	1.62E+05	-	3.23E+09	-	-	-	-	7.37E+04
Endosulfan	115-29-7	-	1	5.65E+05	-	3.23E+09	-	-	-	-	1.77E+04
Endosulfan I	959-98-8	-	1	5.65E+05	-	3.23E+09	-	-	-	-	-
Endosulfan II	33213-65-9	-	1	5.51E+05	-	3.23E+09	-	-	-	-	-
Endosulfan Sulfate	1031-07-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Endothall	145-73-3	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Endrin	72-20-8	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Endrin aldehyde	7421-93-4	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dinitrophenols	25550-58-7	-	-	-	
Dinitrosopentamethylenetetramine, N,N-	101-25-7	-	-	-	
Dinitrotoluene Mixture, 2,4/2,6-	NA	-	-	-	2.70E+02 ca
Dinitrotoluene, 2,4-	121-14-2	4.58E+04	-	5.23E+03	5.90E+02 ca**
Dinitrotoluene, 2,6-	606-20-2	7.08E+03	-	7.87E+02	1.22E+02 ca**
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	7.79E+05	-	5.85E+03	5.85E+03 nc
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	5.19E+05	-	5.83E+03	5.83E+03 nc
Dinitrotoluene, Technical grade	25321-14-6	2.10E+04	-	2.36E+03	4.07E+02 ca**
Dinoseb	88-85-7	2.34E+04	-	2.62E+03	2.62E+03 nc
Dioxane, 1,4-	123-91-1	-	5.99E+04	3.57E+04	1.92E+03 ca*
Diphenamid	957-51-7	7.01E+05	-	7.86E+04	7.86E+04 nc
Diphenyl Sulfone	127-63-9	1.87E+04	-	2.10E+03	2.10E+03 nc
Diphenylamine	122-39-4	5.84E+05	-	6.55E+04	6.55E+04 nc
Diphenylhydrazine, 1,2-	122-66-7	-	-	-	2.29E+02 ca
Dipotassium phosphate	7758-11-4	-	-	1.43E+08	1.43E+08 max
Diquat	85-00-7	5.14E+04	-	5.76E+03	5.76E+03 nc
Direct Black 38	1937-37-7	-	-	-	2.58E+01 ca
Direct Blue 6	2602-46-2	-	-	-	2.48E+01 ca
Direct Brown 95	16071-86-6	-	-	-	2.74E+01 ca
Direct Sky Blue	2610-05-1	-	-	-	
Disodium phosphate	7558-79-4	-	-	1.43E+08	1.43E+08 max
Disulfoton	298-04-4	9.35E+02	-	1.05E+02	1.05E+02 nc
Dithiane, 1,4-	505-29-3	-	-	2.95E+04	2.95E+04 nc
Diuron	330-54-1	4.67E+04	-	5.24E+03	5.24E+03 nc
Dodecyl benzenesulfonic acid	27176-87-0	-	-	-	
Dodine	2439-10-3	9.35E+04	-	1.05E+04	1.05E+04 nc
EPTC	759-94-4	-	-	7.37E+04	7.37E+04 nc
Endosulfan	115-29-7	-	-	1.77E+04	1.77E+04 nc
Endosulfan I	959-98-8	-	-	-	
Endosulfan II	33213-65-9	-	-	-	
Endosulfan Sulfate	1031-07-8	-	-	-	
Endothall	145-73-3	4.67E+05	-	5.24E+04	5.24E+04 nc
Endrin	72-20-8	7.01E+03	-	7.86E+02	7.86E+02 nc
Endrin aldehyde	7421-93-4	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Endrin ketone	53494-70-5	No	No	-		-		-		-		1
Epichlorohydrin	106-89-8	No	Yes	9.90E-03	U	1.20E-06	U	6.00E-03	U	1.00E-03	U	1
Epoxybutane, 1,2-	106-88-7	No	Yes	-		-		-		2.00E-02	U	1
Ethanol	64-17-5	No	Yes	-		-		-		-		1
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	No	No	-		-		-		-		1
Ethephon	16672-87-0	No	No	-		-		5.00E-03	U	-		1
Ethion	563-12-2	No	No	-		-		5.00E-04	U	-		1
Ethoxy Propanol	52125-53-8	No	Yes	-		-		-		-		1
Ethoxyethanol Acetate, 2-	111-15-9	No	Yes	-		-		1.00E-01	U	6.00E-02	U	1
Ethoxyethanol, 2-	110-80-5	No	Yes	-		-		9.00E-02	U	2.00E-01	U	1
Ethyl Acetate	141-78-6	No	Yes	-		-		9.00E-01	U	7.00E-02	U	1
Ethyl Acrylate	140-88-5	No	Yes	4.80E-02	U	-		5.00E-03	U	8.00E-03	U	1
Ethyl Chloride	75-00-3	No	Yes	-		-		-		1.00E+01	U	1
Ethyl Ether	60-29-7	No	Yes	-		-		2.00E-01	U	-		1
Ethyl Methacrylate	97-63-2	No	Yes	-		-		9.00E-02	U	3.00E-01	U	1
Ethyl methane sulfonate	62-50-0	No	No	-		-		-		-		1
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	No	No	-		-		1.00E-05	U	-		1
Ethylbenzene	100-41-4	No	Yes	1.10E-02	U	2.50E-06	U	1.00E-01	U	1.00E+00	U	1
Ethylene Cyanohydrin	109-78-4	No	No	-		-		7.00E-02	U	-		1
Ethylene Diamine	107-15-3	No	Yes	-		-		9.00E-02	U	-		1
Ethylene Glycol	107-21-1	No	No	-		-		2.00E+00	U	4.00E-01	U	1
Ethylene Glycol Monobutyl Ether	111-76-2	No	No	-		-		1.00E-01	U	1.60E+00	U	1
Ethylene Oxide	75-21-8	No	Yes	3.10E-01	U	8.80E-05	U	-		3.00E-02	U	1
Ethylene Thiourea	96-45-7	No	No	4.50E-02	U	1.30E-05	U	8.00E-05	U	-		1
Ethyleneimine	151-56-4	No	Yes	6.50E+01	U	1.90E-02	U	-		-		1
Ethylphenol, 4-	123-07-9	No	No	-		-		-		-		1
Ethylphthalyl Ethyl Glycolate	84-72-0	No	No	-		-		3.00E+00	U	-		1
Express	101200-48-0	No	No	-		-		8.00E-03	U	-		1
Famphur	52-85-7	No	No	-		-		-		-		1
Fenamiphos	22224-92-6	No	No	-		-		2.50E-04	U	-		1
Fenpropathrin	39515-41-8	No	No	-		-		2.50E-02	U	-		1
Fluometuron	2164-17-2	No	No	-		-		1.30E-02	U	-		1
Fluoranthene	206-44-0	No	No	-		-		4.00E-02	U	-		1
Fluorene	86-73-7	No	Yes	-		-		4.00E-02	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Endrin ketone	53494-70-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Epichlorohydrin	106-89-8	-	1	2.61E+04	1.05E+04	3.23E+09	2.09E+04	-	5.55E+04	1.52E+04	1.77E+04
Epoxybutane, 1,2-	106-88-7	-	1	1.06E+04	1.53E+04	3.23E+09	-	-	-	-	-
Ethanol	64-17-5	-	1	4.34E+04	1.06E+05	3.23E+09	-	-	-	-	-
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ethephon	16672-87-0	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Ethion	563-12-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+03
Ethoxy Propanol	52125-53-8	-	1	1.26E+05	8.55E+04	3.23E+09	-	-	-	-	-
Ethoxyethanol Acetate, 2-	111-15-9	-	1	8.47E+04	3.14E+04	3.23E+09	-	-	-	-	2.95E+05
Ethoxyethanol, 2-	110-80-5	-	1	1.36E+05	1.06E+05	3.23E+09	-	-	-	-	2.65E+05
Ethyl Acetate	141-78-6	-	1	1.19E+04	1.08E+04	3.23E+09	-	-	-	-	2.65E+06
Ethyl Acrylate	140-88-5	-	1	8.74E+03	2.50E+03	3.23E+09	4.30E+03	-	-	4.30E+03	1.47E+04
Ethyl Chloride	75-00-3	-	1	1.78E+03	2.12E+03	3.23E+09	-	-	-	-	-
Ethyl Ether	60-29-7	-	1	4.31E+03	1.01E+04	3.23E+09	-	-	-	-	5.90E+05
Ethyl Methacrylate	97-63-2	-	1	7.97E+03	1.11E+03	3.23E+09	-	-	-	-	2.65E+05
Ethyl methane sulfonate	62-50-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+01
Ethylbenzene	100-41-4	-	1	7.82E+03	4.79E+02	3.23E+09	1.88E+04	-	7.99E+03	5.60E+03	2.95E+05
Ethylene Cyanohydrin	109-78-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+05
Ethylene Diamine	107-15-3	-	1	2.48E+05	1.89E+05	3.23E+09	-	-	-	-	2.65E+05
Ethylene Glycol	107-21-1	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+06
Ethylene Glycol Monobutyl Ether	111-76-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Ethylene Oxide	75-21-8	-	1	8.40E+03	1.21E+05	3.23E+09	6.66E+02	-	2.44E+02	1.78E+02	-
Ethylene Thiourea	96-45-7	0.1	1	-	-	3.23E+09	4.59E+03	3.64E+04	6.35E+08	4.07E+03	2.36E+02
Ethyleneimine	151-56-4	-	1	3.29E+04	1.54E+05	3.23E+09	3.18E+00	-	4.43E+00	1.85E+00	-
Ethylphenol, 4-	123-07-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ethylphthalyl Ethyl Glycolate	84-72-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+06
Express	101200-48-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+04
Famphur	52-85-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Fenamiphos	22224-92-6	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+02
Fenpropathrin	39515-41-8	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Fluometuron	2164-17-2	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Fluoranthene	206-44-0	0.13	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Fluorene	86-73-7	0.13	1	3.88E+05	-	3.23E+09	-	-	-	-	1.18E+05

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Endrin ketone	53494-70-5	-	-	-	
Epichlorohydrin	106-89-8	-	9.52E+02	9.03E+02	9.03E+02 nc
Epoxybutane, 1,2-	106-88-7	-	7.71E+03	7.71E+03	7.71E+03 nc
Ethanol	64-17-5	-	-	-	
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	-	-	-	
Ethephon	16672-87-0	1.17E+05	-	1.31E+04	1.31E+04 nc
Ethion	563-12-2	1.17E+04	-	1.31E+03	1.31E+03 nc
Ethoxy Propanol	52125-53-8	-	-	-	
Ethoxyethanol Acetate, 2-	111-15-9	-	1.86E+05	1.14E+05	1.14E+05 sat
Ethoxyethanol, 2-	110-80-5	-	9.91E+05	2.09E+05	2.09E+05 sat
Ethyl Acetate	141-78-6	-	3.04E+04	3.00E+04	3.00E+04 sat
Ethyl Acrylate	140-88-5	-	2.55E+03	2.18E+03	2.18E+03 nc
Ethyl Chloride	75-00-3	-	6.51E+05	6.51E+05	6.51E+05 sat
Ethyl Ether	60-29-7	-	-	5.90E+05	5.90E+05 sat
Ethyl Methacrylate	97-63-2	-	8.73E+04	6.57E+04	6.57E+04 sat
Ethyl methane sulfonate	62-50-0	-	-	-	
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	2.34E+02	-	2.62E+01	2.62E+01 nc
Ethylbenzene	100-41-4	-	2.85E+05	1.45E+05	5.60E+03 sat
Ethylene Cyanohydrin	109-78-4	1.64E+06	-	1.83E+05	1.83E+05 max
Ethylene Diamine	107-15-3	-	-	2.65E+05	2.65E+05 sat
Ethylene Glycol	107-21-1	4.67E+07	4.72E+10	5.24E+06	5.24E+06 max
Ethylene Glycol Monobutyl Ether	111-76-2	2.34E+06	1.89E+11	2.62E+05	2.62E+05 max
Ethylene Oxide	75-21-8	-	9.19E+03	9.19E+03	1.78E+02 ca*
Ethylene Thiourea	96-45-7	1.87E+03	-	2.10E+02	2.10E+02 nc
Ethyleneimine	151-56-4	-	-	-	1.85E+00 ca
Ethylphenol, 4-	123-07-9	-	-	-	
Ethylphthalyl Ethyl Glycolate	84-72-0	7.01E+07	-	7.86E+06	7.86E+06 max
Express	101200-48-0	1.87E+05	-	2.10E+04	2.10E+04 nc
Famphur	52-85-7	-	-	-	
Fenamiphos	22224-92-6	5.84E+03	-	6.55E+02	6.55E+02 nc
Fenpropathrin	39515-41-8	5.84E+05	-	6.55E+04	6.55E+04 nc
Fluometuron	2164-17-2	3.04E+05	-	3.40E+04	3.40E+04 nc
Fluoranthene	206-44-0	7.19E+05	-	1.01E+05	1.01E+05 max
Fluorene	86-73-7	7.19E+05	-	1.01E+05	1.01E+05 max

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Fluoride	16984-48-8	No	No	-		-		4.00E-02	U	1.30E-02	U	1
Fluorine (Soluble Fluoride)	7782-41-4	No	No	-		-		6.00E-02	U	1.30E-02	U	1
Fluorobenzene	462-06-6	No	Yes	-		-		-		-		1
Fluorobiphenyl, 2-	321-60-8	No	Yes	-		-		-		-		1
Fluorophenol, 2-	367-12-4	No	Yes	-		-		-		-		1
Fluridone	59756-60-4	No	No	-		-		8.00E-02	U	-		1
Flurprimidol	56425-91-3	No	No	-		-		2.00E-02	U	-		1
Flutolanil	66332-96-5	No	No	-		-		6.00E-02	U	-		1
Fluvalinate	69409-94-5	No	No	-		-		1.00E-02	U	-		1
Folpet	133-07-3	No	No	3.50E-03	U	-		1.00E-01	U	-		1
Fomesafen	72178-02-0	No	No	1.90E-01	U	-		-		-		1
Fonofos	944-22-9	No	No	-		-		2.00E-03	U	-		1
Formaldehyde	50-00-0	No	Yes	-		1.30E-05	U	2.00E-01	U	9.83E-03	U	1
Formic Acid	64-18-6	No	Yes	-		-		9.00E-01	U	3.00E-04	U	1
Fosetyl-AL	39148-24-8	No	No	-		-		3.00E+00	U	-		1
Fuel Oil Number 2	68476-30-2	No	No	-		-		-		-		1
Furan	110-00-9	No	Yes	-		-		1.00E-03	U	-		1
Furazolidone	67-45-8	No	No	3.80E+00	U	-		-		-		1
Furfural	98-01-1	No	Yes	-		-		3.00E-03	U	5.00E-02	U	1
Furium	531-82-8	No	No	1.50E+00	U	4.30E-04	U	-		-		1
Furmecyclox	60568-05-0	No	No	3.00E-02	U	8.60E-06	U	-		-		1
Gadolinium	7440-54-2	No	No	-		-		-		-		1
Gallium	7440-55-3	No	No	-		-		-		-		1
Germanium	7440-56-4	No	No	-		-		-		-		1
Glufosinate, Ammonium	77182-82-2	No	No	-		-		4.00E-04	U	-		1
Glutaraldehyde	111-30-8	No	No	-		-		-		8.00E-05	U	1
Glycerol	56-81-5	No	No	-		-		-		-		1
Glycidyl	765-34-4	No	Yes	-		-		4.00E-04	U	1.00E-03	U	1
Glyphosate	1071-83-6	No	No	-		-		1.00E-01	U	-		1
Goal	42874-03-3	No	No	-		-		3.00E-03	U	-		1
Guanidine	113-00-8	No	Yes	-		-		1.00E-02	U	-		1
Guanidine Chloride	50-01-1	No	No	-		-		2.00E-02	U	-		1
Guanidine Nitrate	506-93-4	No	No	-		-		-		-		1
Guthion	86-50-0	No	No	-		-		3.00E-03	U	1.00E-02	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Fluoride	16984-48-8	-	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Fluorine (Soluble Fluoride)	7782-41-4	-	1	-	-	3.23E+09	-	-	-	-	1.77E+05
Fluorobenzene	462-06-6	-	1	6.49E+03	2.39E+03	3.23E+09	-	-	-	-	-
Fluorobiphenyl, 2-	321-60-8	-	1	1.08E+05	-	3.23E+09	-	-	-	-	-
Fluorophenol, 2-	367-12-4	-	1	2.93E+05	9.21E+04	3.23E+09	-	-	-	-	-
Fluridone	59756-60-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+05
Flurprimidol	56425-91-3	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Flutolanil	66332-96-5	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+05
Fluvalinate	69409-94-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Folpet	133-07-3	0.1	1	-	-	3.23E+09	5.90E+04	4.67E+05	-	5.24E+04	2.95E+05
Fomesafen	72178-02-0	0.1	1	-	-	3.23E+09	1.09E+03	8.61E+03	-	9.65E+02	-
Fonofos	944-22-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Formaldehyde	50-00-0	-	1	1.07E+05	4.24E+04	3.23E+09	-	-	2.11E+04	2.11E+04	5.90E+05
Formic Acid	64-18-6	-	1	1.28E+05	1.06E+05	3.23E+09	-	-	-	-	2.65E+06
Fosetyl-AL	39148-24-8	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+06
Fuel Oil Number 2	68476-30-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Furan	110-00-9	0.03	1	3.60E+03	6.22E+03	3.23E+09	-	-	-	-	2.95E+03
Furazolidone	67-45-8	0.1	1	-	-	3.23E+09	5.43E+01	4.31E+02	-	4.82E+01	-
Furfural	98-01-1	-	1	6.71E+04	1.01E+04	3.23E+09	-	-	-	-	8.85E+03
Furium	531-82-8	0.1	1	-	-	3.23E+09	1.38E+02	1.09E+03	1.92E+07	1.22E+02	-
Furmecyclox	60568-05-0	0.1	1	-	-	3.23E+09	6.88E+03	5.45E+04	9.61E+08	6.11E+03	-
Gadolinium	7440-54-2	-	1	-	-	3.23E+09	-	-	-	-	-
Gallium	7440-55-3	-	1	-	-	3.23E+09	-	-	-	-	-
Germanium	7440-56-4	-	1	-	-	3.23E+09	-	-	-	-	-
Glufosinate, Ammonium	77182-82-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Glutaraldehyde	111-30-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Glycerol	56-81-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Glycidyl	765-34-4	-	1	1.01E+05	1.06E+05	3.23E+09	-	-	-	-	1.18E+03
Glyphosate	1071-83-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Goal	42874-03-3	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Guanidine	113-00-8	-	1	2.00E+05	-	3.23E+09	-	-	-	-	2.95E+04
Guanidine Chloride	50-01-1	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Guanidine Nitrate	506-93-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Guthion	86-50-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Fluoride	16984-48-8	-	1.53E+09	1.18E+05	1.18E+05 max
Fluorine (Soluble Fluoride)	7782-41-4	-	1.53E+09	1.77E+05	1.77E+05 max
Fluorobenzene	462-06-6	-	-	-	
Fluorobiphenyl, 2-	321-60-8	-	-	-	
Fluorophenol, 2-	367-12-4	-	-	-	
Fluridone	59756-60-4	1.87E+06	-	2.10E+05	2.10E+05 max
Flurprimidol	56425-91-3	4.67E+05	-	5.24E+04	5.24E+04 nc
Flutolanil	66332-96-5	1.40E+06	-	1.57E+05	1.57E+05 max
Fluvalinate	69409-94-5	2.34E+05	-	2.62E+04	2.62E+04 nc
Folpet	133-07-3	2.34E+06	-	2.62E+05	5.24E+04 ca**
Fomesafen	72178-02-0	-	-	-	9.65E+02 ca
Fonofos	944-22-9	4.67E+04	-	5.24E+03	5.24E+03 nc
Formaldehyde	50-00-0	-	3.85E+04	3.61E+04	2.11E+04 ca**
Formic Acid	64-18-6	-	1.40E+03	1.40E+03	1.40E+03 nc
Fosetyl-AL	39148-24-8	7.01E+07	-	7.86E+06	7.86E+06 max
Fuel Oil Number 2	68476-30-2	-	-	-	
Furan	110-00-9	7.79E+04	-	2.84E+03	2.84E+03 nc
Furazolidone	67-45-8	-	-	-	4.82E+01 ca
Furfural	98-01-1	-	1.22E+05	8.25E+03	8.25E+03 nc
Furium	531-82-8	-	-	-	1.22E+02 ca
Furmecyclox	60568-05-0	-	-	-	6.11E+03 ca
Gadolinium	7440-54-2	-	-	-	
Gallium	7440-55-3	-	-	-	
Germanium	7440-56-4	-	-	-	
Glufosinate, Ammonium	77182-82-2	9.35E+03	-	1.05E+03	1.05E+03 nc
Glutaraldehyde	111-30-8	-	9.44E+06	9.44E+06	9.44E+06 max
Glycerol	56-81-5	-	-	-	
Glycidyl	765-34-4	-	3.70E+03	8.94E+02	8.94E+02 nc
Glyphosate	1071-83-6	2.34E+06	-	2.62E+05	2.62E+05 max
Goal	42874-03-3	7.01E+04	-	7.86E+03	7.86E+03 nc
Guanidine	113-00-8	-	-	2.95E+04	2.95E+04 nc
Guanidine Chloride	50-01-1	4.67E+05	-	5.24E+04	5.24E+04 nc
Guanidine Nitrate	506-93-4	-	-	-	
Guthion	86-50-0	7.01E+04	1.18E+09	7.86E+03	7.86E+03 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	No	Yes	1.30E+03	U	3.80E-01	U	1.00E-06	U	4.00E-06	U	1
Haloacetic acids	NA	No	No	-		-		-		-		1
Haloxyfop, Methyl	69806-40-2	No	No	-		-		5.00E-05	U	-		1
Harmony	79277-27-3	No	No	-		-		1.30E-02	U	-		1
Heptachlor	76-44-8	No	Yes	4.50E+00	U	1.30E-03	U	5.00E-04	U	-		1
Heptachlor Epoxide	1024-57-3	No	Yes	9.10E+00	U	2.60E-03	U	1.30E-05	U	-		1
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
Heptanal, n-	111-71-7	No	Yes	-		-		-		-		1
Heptane, N-	142-82-5	No	Yes	-		-		-		-		1
Heptanol, n-	111-70-6	No	Yes	-		-		-		-		1
Hexabromobenzene	87-82-1	No	Yes	-		-		2.00E-03	U	-		1
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	No	No	-		-		2.00E-04	U	-		1
Hexachlorobenzene	118-74-1	No	Yes	1.60E+00	U	4.60E-04	U	8.00E-04	U	-		1
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Hexachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 157)	69782-90-7	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	No	Yes	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1
Hexachlorobutadiene	87-68-3	No	Yes	7.80E-02	U	2.20E-05	U	1.00E-03	U	-		1
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	6.30E+00	U	1.80E-03	U	8.00E-03	U	-		1
Hexachlorocyclohexane, Beta-	319-85-7	No	No	1.80E+00	U	5.30E-04	U	-		-		1
Hexachlorocyclohexane, Delta-	319-86-8	No	No	-		-		-		-		1
Hexachlorocyclohexane, Epsilon	6108-10-7	No	No	-		-		-		-		1
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	No	No	1.10E+00	U	3.10E-04	U	3.00E-04	U	-		1
Hexachlorocyclohexane, Technical	608-73-1	No	No	1.80E+00	U	5.10E-04	U	-		-		1
Hexachlorocyclopentadiene	77-47-4	No	Yes	-		-		6.00E-03	U	2.00E-04	U	1
Hexachlorodibenzo-p-dioxin	34465-46-8	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachlorodibenzo-p-dioxin, Mixture	NA	No	No	6.20E+03	U	1.30E+00	U	-		-		1
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachloroethane	67-72-1	No	Yes	4.00E-02	U	1.10E-05	U	7.00E-04	U	3.00E-02	U	1
Hexachlorophene	70-30-4	No	No	-		-		3.00E-04	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	-	1	4.52E+06	-	3.23E+09	1.59E-01	-	3.04E+01	1.58E-01	2.95E+00
Haloacetic acids	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Haloxyfop, Methyl	69806-40-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+02
Harmony	79277-27-3	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Heptachlor	76-44-8	-	1	6.62E+05	-	3.23E+09	4.59E+01	-	1.30E+03	4.43E+01	1.47E+03
Heptachlor Epoxide	1024-57-3	-	1	1.16E+06	-	3.23E+09	2.27E+01	-	1.14E+03	2.22E+01	3.83E+01
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	0.14	1	2.81E+06	-	3.23E+09	5.29E+01	3.00E+02	6.29E+03	4.47E+01	6.87E+01
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	0.03	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01
Heptanal, n-	111-71-7	-	1	1.08E+04	2.09E+02	3.23E+09	-	-	-	-	-
Heptane, N-	142-82-5	-	1	1.23E+03	5.79E+01	3.23E+09	-	-	-	-	-
Heptanol, n-	111-70-6	-	1	4.73E+04	3.78E+02	3.23E+09	-	-	-	-	-
Hexabromobenzene	87-82-1	-	1	5.24E+05	-	3.23E+09	-	-	-	-	5.90E+03
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Hexachlorobenzene	118-74-1	-	1	9.37E+04	-	3.23E+09	1.29E+02	-	5.21E+02	1.03E+02	2.36E+03
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	0.14	1	1.98E+06	-	3.23E+09	5.29E+01	3.00E+02	4.43E+03	4.45E+01	6.87E+01
Hexachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 157)	69782-90-7	0.14	1	2.00E+06	-	3.23E+09	5.29E+01	3.00E+02	4.48E+03	4.45E+01	6.87E+01
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	0.14	1	2.13E+06	-	3.23E+09	5.29E+01	3.00E+02	4.77E+03	4.46E+01	6.87E+01
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	0.14	1	1.98E+06	-	3.23E+09	5.29E-02	3.00E-01	4.43E+00	4.45E-02	6.87E-02
Hexachlorobutadiene	87-68-3	-	1	1.49E+04	1.68E+01	3.23E+09	2.65E+03	-	1.73E+03	1.05E+03	2.95E+03
Hexachlorocyclohexane, Alpha-	319-84-6	0.1	1	-	-	3.23E+09	3.28E+01	2.60E+02	4.59E+06	2.91E+01	2.36E+04
Hexachlorocyclohexane, Beta-	319-85-7	0.1	1	-	-	3.23E+09	1.15E+02	9.09E+02	1.56E+07	1.02E+02	-
Hexachlorocyclohexane, Delta-	319-86-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Hexachlorocyclohexane, Epsilon	6108-10-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	0.04	1	-	-	3.23E+09	1.88E+02	3.72E+03	2.66E+07	1.79E+02	8.85E+02
Hexachlorocyclohexane, Technical	608-73-1	0.1	1	-	-	3.23E+09	1.15E+02	9.09E+02	1.62E+07	1.02E+02	-
Hexachlorocyclopentadiene	77-47-4	-	1	1.18E+04	1.57E+01	3.23E+09	-	-	-	-	1.77E+04
Hexachlorodibenzo-p-dioxin	34465-46-8	0.03	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	0.03	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02
Hexachlorodibenzo-p-dioxin, Mixture	NA	0.03	1	-	-	3.23E+09	3.33E-02	8.80E-01	6.35E+03	3.21E-02	-
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	0.03	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02
Hexachloroethane	67-72-1	-	1	1.10E+04	-	3.23E+09	5.16E+03	-	2.57E+03	1.71E+03	2.06E+03
Hexachlorophene	70-30-4	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	-	6.59E+02	2.94E+00	1.58E-01 ca*
Haloacetic acids	NA	-	-	-	
Haloxyfop, Methyl	69806-40-2	1.17E+03	-	1.31E+02	1.31E+02 nc
Harmony	79277-27-3	3.04E+05	-	3.40E+04	3.40E+04 nc
Heptachlor	76-44-8	-	-	1.47E+03	4.43E+01 ca*
Heptachlor Epoxide	1024-57-3	-	-	3.83E+01	2.22E+01 ca**
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	3.89E+02	1.36E+05	5.84E+01	4.47E+01 ca**
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
Heptanal, n-	111-71-7	-	-	-	
Heptane, N-	142-82-5	-	-	-	
Heptanol, n-	111-70-6	-	-	-	
Hexabromobenzene	87-82-1	-	-	5.90E+03	5.90E+03 nc
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	4.67E+03	-	5.24E+02	5.24E+02 nc
Hexachlorobenzene	118-74-1	-	-	2.36E+03	1.03E+02 ca*
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	3.89E+02	9.59E+04	5.84E+01	4.45E+01 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	3.89E+02	9.71E+04	5.84E+01	4.45E+01 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	3.89E+02	1.03E+05	5.84E+01	4.46E+01 ca**
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	3.89E-01	9.59E+01	5.84E-02	4.45E-02 ca**
Hexachlorobutadiene	87-68-3	-	-	2.95E+03	1.05E+03 sat
Hexachlorocyclohexane, Alpha-	319-84-6	1.87E+05	-	2.10E+04	2.91E+01 ca
Hexachlorocyclohexane, Beta-	319-85-7	-	-	-	1.02E+02 ca
Hexachlorocyclohexane, Delta-	319-86-8	-	-	-	
Hexachlorocyclohexane, Epsilon	6108-10-7	-	-	-	
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	1.75E+04	-	8.42E+02	1.79E+02 ca**
Hexachlorocyclohexane, Technical	608-73-1	-	-	-	1.02E+02 ca
Hexachlorocyclopentadiene	77-47-4	-	8.58E+01	8.54E+01	8.54E+01 sat
Hexachlorodibenzo-p-dioxin	34465-46-8	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
Hexachlorodibenzo-p-dioxin, Mixture	NA	-	-	-	3.21E-02 ca
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
Hexachloroethane	67-72-1	-	1.21E+04	1.76E+03	1.71E+03 ca**
Hexachlorophene	70-30-4	7.01E+03	-	7.86E+02	7.86E+02 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Hexachloropropene	1888-71-7	No	Yes	-		-		-		-		1
Hexadecanoic Acid	57-10-3	No	Yes	-		-		-		-		1
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	No	No	1.10E-01	U	-		3.00E-03	U	-		1
Hexamethylene Diisocyanate, 1,6-	822-06-0	No	Yes	-		-		-		1.00E-05	U	1
Hexamethylphosphoramide	680-31-9	No	No	-		-		4.00E-04	U	-		1
Hexane, N-	110-54-3	No	Yes	-		-		6.00E-02	U	7.00E-01	U	1
Hexanedioic Acid	124-04-9	No	No	-		-		2.00E+00	U	-		1
Hexanol, n-	111-27-3	No	Yes	-		-		-		-		1
Hexanone, 2-	591-78-6	No	Yes	-		-		5.00E-03	U	3.00E-02	U	1
Hexazinone	51235-04-2	No	No	-		-		3.30E-02	U	-		1
HpCDD, 2,3,7,8-	37871-00-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HpCDF, 2,3,7,8-	38998-75-3	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HxCDD, 1,2,3,6,7,8-	57653-85-7	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDD, 1,2,3,7,8,9-	19408-74-3	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 1,2,3,6,7,8-	57117-44-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 1,2,3,7,8,9-	72918-21-9	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 2,3,4,6,7,8-	60851-34-5	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 2,3,7,8-	55684-94-1	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hydrazine	302-01-2	No	Yes	3.00E+00	U	4.90E-03	U	-		3.00E-05	U	1
Hydrazine Sulfate	10034-93-2	No	No	3.00E+00	U	4.90E-03	U	-		-		1
Hydrogen Chloride	7647-01-0	No	Yes	-		-		-		2.00E-02	U	1
Hydrogen Cyanide	74-90-8	No	Yes	-		-		6.00E-04	U	8.00E-04	U	1
Hydrogen Fluoride	7664-39-3	No	Yes	-		-		4.00E-02	U	1.40E-02	U	1
Hydrogen Selenide	77830-70-5	No	No	-		-		-		-		1
Hydrogen Sulfate	12143-45-2	No	No	-		-		-		-		1
Hydrogen Sulfide	7783-06-4	No	Yes	-		-		-		2.00E-03	U	1
Hydroquinone	123-31-9	No	No	6.00E-02	U	-		4.00E-02	U	-		1
Imazalil	35554-44-0	No	No	-		-		1.30E-02	U	-		1
Imazaquin	81335-37-7	No	No	-		-		2.50E-01	U	-		1
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	U	1.10E-04	U	-		-		1
Indium	7440-74-6	No	No	-		-		-		-		1
Iodide	20461-54-5	No	No	-		-		-		-		1
Iodine	7553-56-2	No	No	-		-		1.00E-02	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Hexachloropropene	1888-71-7	-	1	1.48E+04	4.37E+01	3.23E+09	-	-	-	-	-
Hexadecanoic Acid	57-10-3	-	1	7.66E+05	-	3.23E+09	-	-	-	-	-
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	0.015	1	-	-	3.23E+09	1.88E+03	9.92E+04	-	1.84E+03	8.85E+03
Hexamethylene Diisocyanate, 1,6-	822-06-0	-	1	4.15E+05	5.19E+03	3.23E+09	-	-	-	-	-
Hexamethylphosphoramide	680-31-9	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+03
Hexane, N-	110-54-3	-	1	1.14E+03	1.41E+02	3.23E+09	-	-	-	-	1.77E+05
Hexanedioic Acid	124-04-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+06
Hexanol, n-	111-27-3	-	1	4.03E+04	9.98E+02	3.23E+09	-	-	-	-	-
Hexanone, 2-	591-78-6	-	1	1.83E+04	3.28E+03	3.23E+09	-	-	-	-	1.47E+04
Hexazinone	51235-04-2	0.1	1	-	-	3.23E+09	-	-	-	-	9.73E+04
HpCDD, 2,3,7,8-	37871-00-4	0.03	1	3.36E+06	-	3.23E+09	1.59E-01	4.20E+00	2.26E+01	1.52E-01	2.06E-01
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	0.03	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01
HpCDF, 2,3,7,8-	38998-75-3	0.03	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01
HxCDD, 1,2,3,6,7,8-	57653-85-7	0.03	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02
HxCDD, 1,2,3,7,8,9-	19408-74-3	0.03	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02
HxCDF, 1,2,3,6,7,8-	57117-44-9	0.03	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02
HxCDF, 1,2,3,7,8,9-	72918-21-9	0.03	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02
HxCDF, 2,3,4,6,7,8-	60851-34-5	0.03	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02
HxCDF, 2,3,7,8-	55684-94-1	0.03	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02
Hydrazine	302-01-2	-	1	-	-	3.23E+09	6.88E+01	-	1.69E+06	6.88E+01	-
Hydrazine Sulfate	10034-93-2	-	1	-	-	3.23E+09	6.88E+01	-	1.69E+06	6.88E+01	-
Hydrogen Chloride	7647-01-0	-	1	-	-	3.23E+09	-	-	-	-	-
Hydrogen Cyanide	74-90-8	-	1	7.20E+04	1.00E+07	3.23E+09	-	-	-	-	1.77E+03
Hydrogen Fluoride	7664-39-3	-	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Hydrogen Selenide	77830-70-5	-	1	-	-	3.23E+09	-	-	-	-	-
Hydrogen Sulfate	12143-45-2	-	1	-	-	3.23E+09	-	-	-	-	-
Hydrogen Sulfide	7783-06-4	-	1	-	-	3.23E+09	-	-	-	-	-
Hydroquinone	123-31-9	0.1	1	-	-	3.23E+09	3.44E+03	2.73E+04	-	3.06E+03	1.18E+05
Imazalil	35554-44-0	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Imazaquin	81335-37-7	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+05
Indeno[1,2,3-cd]pyrene	193-39-5	0.13	1	-	-	3.23E+09	2.83E+02	1.72E+03	7.51E+07	2.43E+02	-
Indium	7440-74-6	-	1	-	-	3.23E+09	-	-	-	-	-
Iodide	20461-54-5	-	1	-	-	3.23E+09	-	-	-	-	-
Iodine	7553-56-2	-	1	-	-	3.23E+09	-	-	-	-	2.95E+04

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Hexachloropropene	1888-71-7	-	-	-	
Hexadecanoic Acid	57-10-3	-	-	-	
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	4.67E+05	-	8.68E+03	1.84E+03 ca**
Hexamethylene Diisocyanate, 1,6-	822-06-0	-	1.51E+02	1.51E+02	1.51E+02 nc
Hexamethylphosphoramide	680-31-9	9.35E+03	-	1.05E+03	1.05E+03 nc
Hexane, N-	110-54-3	-	2.92E+04	2.51E+04	2.51E+04 sat
Hexanedioic Acid	124-04-9	4.67E+07	-	5.24E+06	5.24E+06 max
Hexanol, n-	111-27-3	-	-	-	
Hexanone, 2-	591-78-6	-	2.01E+04	8.50E+03	8.50E+03 sat
Hexazinone	51235-04-2	7.71E+05	-	8.64E+04	8.64E+04 nc
HpCDD, 2,3,7,8-	37871-00-4	5.45E+00	4.90E+02	1.99E-01	1.52E-01 ca**
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
HpCDF, 2,3,7,8-	38998-75-3	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
HxCDD, 1,2,3,6,7,8-	57653-85-7	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
HxCDD, 1,2,3,7,8,9-	19408-74-3	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
HxCDF, 1,2,3,6,7,8-	57117-44-9	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
HxCDF, 1,2,3,7,8,9-	72918-21-9	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
HxCDF, 2,3,4,6,7,8-	60851-34-5	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
HxCDF, 2,3,7,8-	55684-94-1	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
Hydrazine	302-01-2	-	3.54E+06	3.54E+06	6.88E+01 ca
Hydrazine Sulfate	10034-93-2	-	-	-	6.88E+01 ca
Hydrogen Chloride	7647-01-0	-	2.36E+09	2.36E+09	2.36E+09 max
Hydrogen Cyanide	74-90-8	-	2.10E+03	9.61E+02	9.61E+02 nc
Hydrogen Fluoride	7664-39-3	-	1.65E+09	1.18E+05	1.18E+05 max
Hydrogen Selenide	77830-70-5	-	-	-	
Hydrogen Sulfate	12143-45-2	-	-	-	
Hydrogen Sulfide	7783-06-4	-	2.36E+08	2.36E+08	2.36E+08 max
Hydroquinone	123-31-9	9.35E+05	-	1.05E+05	3.06E+03 ca*
Imazalil	35554-44-0	3.04E+05	-	3.40E+04	3.40E+04 nc
Imazaquin	81335-37-7	5.84E+06	-	6.55E+05	6.55E+05 max
Indeno[1,2,3-cd]pyrene	193-39-5	-	-	-	2.43E+02 ca
Indium	7440-74-6	-	-	-	
Iodide	20461-54-5	-	-	-	
Iodine	7553-56-2	-	-	2.95E+04	2.95E+04 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Iodomethane	74-88-4	No	Yes	-		-		-		-		1
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	No	No	-		-		-		-		1
Iprodione	36734-19-7	No	No	-		-		4.00E-02	U	-		1
Iron	7439-89-6	No	No	-		-		7.00E-01	U	-		1
Iron Sulfide	11126-12-8	No	No	-		-		-		-		1
Isobutyl Alcohol	78-83-1	No	Yes	-		-		3.00E-01	U	-		1
Isodrin	465-73-6	No	Yes	-		-		-		-		1
Isophorone	78-59-1	No	No	9.50E-04	U	-		2.00E-01	U	2.00E+00	U	1
Isopropalin	33820-53-0	No	Yes	-		-		1.50E-02	U	-		1
Isopropanol	67-63-0	No	Yes	-		-		2.00E+00	U	2.00E-01	U	1
Isopropyl Methyl Phosphonic Acid	1832-54-8	No	No	-		-		1.00E-01	U	-		1
Isopropyltoluene, p-	99-87-6	No	Yes	-		-		-		-		1
Isosafrole	120-58-1	No	Yes	-		-		-		-		1
Isoxaben	82558-50-7	No	No	-		-		5.00E-02	U	-		1
JP-4	50815-00-4	No	Yes	-		-		-		-		1
JP-5/JP-8	8002-20-6	No	Yes	-		-		-		-		1
JP-7	NA	No	Yes	-		-		-		3.00E-01	U	1
Kerb	23950-58-5	No	No	-		-		7.50E-02	U	-		1
Kerosene	8008-20-6	No	Yes	-		-		-		-		1
Lactofen	77501-63-4	No	No	-		-		2.00E-03	U	-		1
Lactonitrile	78-97-7	No	No	-		-		-		-		1
Lanthanum	7439-91-0	No	No	-		-		-		-		1
Lead Alkyls	NA	No	No	-		-		-		-		1
Lead Chromate	7758-97-6	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Lead Phosphate	7446-27-7	No	No	8.50E-03	U	1.20E-05	U	-		-		1
Lead acetate	301-04-2	No	No	2.80E-01	U	8.00E-05	U	-		-		1
Lead and Compounds	7439-92-1	No	No	-		-		-		-		1
Lead subacetate	1335-32-6	No	No	8.50E-03	U	1.20E-05	U	-		-		1
Linuron	330-55-2	No	No	-		-		2.00E-03	U	-		1
Lithium	7439-93-2	No	No	-		-		2.00E-03	U	-		1
Lithium Perchlorate	7791-03-9	No	No	-		-		7.00E-04	U	-		1
Londax	83055-99-6	No	No	-		-		2.00E-01	U	-		1
Lutetium	7439-94-3	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Iodomethane	74-88-4	-	1	2.55E+03	3.03E+03	3.23E+09	-	-	-	-	-
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Iprodione	36734-19-7	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Iron	7439-89-6	-	1	-	-	3.23E+09	-	-	-	-	2.06E+06
Iron Sulfide	11126-12-8	-	1	-	-	3.23E+09	-	-	-	-	-
Isobutyl Alcohol	78-83-1	-	1	3.88E+04	1.00E+04	3.23E+09	-	-	-	-	8.85E+05
Isodrin	465-73-6	-	1	2.32E+06	-	3.23E+09	-	-	-	-	-
Isophorone	78-59-1	0.1	1	-	-	3.23E+09	2.17E+05	1.72E+06	-	1.93E+05	5.90E+05
Isopropalin	33820-53-0	-	1	5.78E+05	-	3.23E+09	-	-	-	-	4.42E+04
Isopropanol	67-63-0	-	1	3.83E+04	1.09E+05	3.23E+09	-	-	-	-	5.90E+06
Isopropyl Methyl Phosphonic Acid	1832-54-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Isopropyltoluene, p-	99-87-6	-	1	1.18E+04	1.62E+02	3.23E+09	-	-	-	-	-
Isosafrole	120-58-1	-	1	3.42E+03	2.04E+01	3.23E+09	-	-	-	-	-
Isoxaben	82558-50-7	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
JP-4	50815-00-4	-	1	-	-	3.23E+09	-	-	-	-	-
JP-5/JP-8	8002-20-6	-	1	-	-	3.23E+09	-	-	-	-	-
JP-7	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Kerb	23950-58-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.21E+05
Kerosene	8008-20-6	-	1	-	-	3.23E+09	-	-	-	-	-
Lactofen	77501-63-4	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Lactonitrile	78-97-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Lanthanum	7439-91-0	-	1	-	-	3.23E+09	-	-	-	-	-
Lead Alkyls	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Lead Chromate	7758-97-6	-	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04
Lead Phosphate	7446-27-7	-	1	-	-	3.23E+09	2.43E+04	-	6.88E+08	2.43E+04	-
Lead acetate	301-04-2	0.1	1	-	-	3.23E+09	7.37E+02	5.84E+03	1.03E+08	6.55E+02	-
Lead and Compounds	7439-92-1	-	1	-	-	3.23E+09	-	-	-	-	-
Lead subacetate	1335-32-6	0.1	1	-	-	3.23E+09	2.43E+04	1.92E+05	6.88E+08	2.16E+04	-
Linuron	330-55-2	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Lithium	7439-93-2	-	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Lithium Perchlorate	7791-03-9	-	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Londax	83055-99-6	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+05
Lutetium	7439-94-3	-	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Iodomethane	74-88-4	-	-	-	
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	-	-	-	
Iprodione	36734-19-7	9.35E+05	-	1.05E+05	1.05E+05 max
Iron	7439-89-6	-	-	2.06E+06	2.06E+06 max
Iron Sulfide	11126-12-8	-	-	-	
Isobutyl Alcohol	78-83-1	-	-	8.85E+05	8.85E+05 sat
Isodrin	465-73-6	-	-	-	
Isophorone	78-59-1	4.67E+06	2.36E+11	5.24E+05	1.93E+05 max
Isopropalin	33820-53-0	-	-	4.42E+04	4.42E+04 nc
Isopropanol	67-63-0	-	2.79E+05	2.67E+05	2.67E+05 sat
Isopropyl Methyl Phosphonic Acid	1832-54-8	2.34E+06	-	2.62E+05	2.62E+05 max
Isopropyltoluene, p-	99-87-6	-	-	-	
Isosafrole	120-58-1	-	-	-	
Isoxaben	82558-50-7	1.17E+06	-	1.31E+05	1.31E+05 max
JP-4	50815-00-4	-	-	-	
JP-5/JP-8	8002-20-6	-	-	-	
JP-7	NA	-	3.54E+10	3.54E+10	3.54E+10 max
Kerb	23950-58-5	1.75E+06	-	1.96E+05	1.96E+05 max
Kerosene	8008-20-6	-	-	-	
Lactofen	77501-63-4	4.67E+04	-	5.24E+03	5.24E+03 nc
Lactonitrile	78-97-7	-	-	-	
Lanthanum	7439-91-0	-	-	-	
Lead Alkyls	NA	-	-	-	
Lead Chromate	7758-97-6	-	2.36E+07	5.88E+04	4.10E+02 ca
Lead Phosphate	7446-27-7	-	-	-	2.43E+04 ca
Lead acetate	301-04-2	-	-	-	6.55E+02 ca
Lead and Compounds	7439-92-1	-	-	8.00E+02	8.00E+02 nc
Lead subacetate	1335-32-6	-	-	-	2.16E+04 ca
Linuron	330-55-2	4.67E+04	-	5.24E+03	5.24E+03 nc
Lithium	7439-93-2	-	-	5.90E+03	5.90E+03 nc
Lithium Perchlorate	7791-03-9	-	-	2.06E+03	2.06E+03 nc
Londax	83055-99-6	4.67E+06	-	5.24E+05	5.24E+05 max
Lutetium	7439-94-3	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
MCPA	94-74-6	No	No	-		-		5.00E-04	U	-		1
MCPB	94-81-5	No	No	-		-		1.00E-02	U	-		1
MCPP	93-65-2	No	No	-		-		1.00E-03	U	-		1
Magnesium	7439-95-4	No	No	-		-		-		-		1
Magnesium Chlorate	10326-21-3	No	No	-		-		-		-		1
Malathion	121-75-5	No	No	-		-		2.00E-02	U	-		1
Maleic Anhydride	108-31-6	No	No	-		-		1.00E-01	U	7.00E-04	U	1
Maleic Hydrazide	123-33-1	No	No	-		-		5.00E-01	U	-		1
Malononitrile	109-77-3	No	No	-		-		1.00E-04	U	-		1
Mancozeb	8018-01-7	No	No	-		-		3.00E-02	U	-		1
Maneb	12427-38-2	No	No	-		-		5.00E-03	U	-		1
Manganese (Non-diet)	7439-96-5	No	No	-		-		2.40E-02	U	5.00E-05	U	0.04
Mechlorethamine	51-75-2	No	No	-		-		-		-		1
Mephosfolan	950-10-7	No	No	-		-		9.00E-05	U	-		1
Mepiquat Chloride	24307-26-4	No	No	-		-		3.00E-02	U	-		1
Mercuric Chloride	7487-94-7	No	No	-		-		3.00E-04	U	3.00E-04	U	0.07
Mercury (elemental)	7439-97-6	No	Yes	-		-		-		3.00E-04	U	1
Merphos	150-50-5	No	Yes	-		-		3.00E-05	U	-		1
Merphos Oxide	78-48-8	No	No	-		-		3.00E-05	U	-		1
Metalaxyl	57837-19-1	No	No	-		-		6.00E-02	U	-		1
Methacrylonitrile	126-98-7	No	Yes	-		-		1.00E-04	U	3.00E-02	U	1
Methamidophos	10265-92-6	No	No	-		-		5.00E-05	U	-		1
Methanol	67-56-1	No	Yes	-		-		2.00E+00	U	2.00E+01	U	1
Methapyrilene	91-80-5	No	No	-		-		-		-		1
Methidathion	950-37-8	No	No	-		-		1.00E-03	U	-		1
Methomyl	16752-77-5	No	No	-		-		2.50E-02	U	-		1
Methoxy-5-nitroaniline, 2-	99-59-2	No	No	4.90E-02	U	1.40E-05	U	-		-		1
Methoxychlor	72-43-5	No	No	-		-		5.00E-03	U	-		1
Methoxyethanol Acetate, 2-	110-49-6	No	Yes	-		-		8.00E-03	U	1.00E-03	U	1
Methoxyethanol, 2-	109-86-4	No	Yes	-		-		5.00E-03	U	2.00E-02	U	1
Methyl Acetate	79-20-9	No	Yes	-		-		1.00E+00	U	-		1
Methyl Acrylate	96-33-3	No	Yes	-		-		3.00E-02	U	2.00E-02	U	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	-		-		6.00E-01	U	5.00E+00	U	1
Methyl Hydrazine	60-34-4	No	Yes	-		1.00E-03	U	1.00E-03	U	2.00E-05	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
MCPA	94-74-6	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+03
MCPB	94-81-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
MCPP	93-65-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Magnesium	7439-95-4	-	1	-	-	3.23E+09	-	-	-	-	-
Magnesium Chlorate	10326-21-3	-	1	-	-	3.23E+09	-	-	-	-	-
Malathion	121-75-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Maleic Anhydride	108-31-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Maleic Hydrazide	123-33-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+06
Malononitrile	109-77-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Mancozeb	8018-01-7	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Maneb	12427-38-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Manganese (Non-diet)	7439-96-5	-	1	-	-	3.23E+09	-	-	-	-	7.08E+04
Mechlorethamine	51-75-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Mephosfolan	950-10-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+02
Mepiquat Chloride	24307-26-4	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Mercuric Chloride	7487-94-7	-	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Mercury (elemental)	7439-97-6	-	1	4.16E+04	3.13E+00	3.23E+09	-	-	-	-	-
Merphos	150-50-5	-	1	2.67E+06	-	3.23E+09	-	-	-	-	8.85E+01
Merphos Oxide	78-48-8	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+01
Metalaxyl	57837-19-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+05
Methacrylonitrile	126-98-7	-	1	9.38E+03	4.59E+03	3.23E+09	-	-	-	-	2.95E+02
Methamidophos	10265-92-6	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+02
Methanol	67-56-1	-	1	4.01E+04	1.06E+05	3.23E+09	-	-	-	-	5.90E+06
Methapyrilene	91-80-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Methidathion	950-37-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Methomyl	16752-77-5	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Methoxy-5-nitroaniline, 2-	99-59-2	0.1	1	-	-	3.23E+09	4.21E+03	3.34E+04	5.90E+08	3.74E+03	-
Methoxychlor	72-43-5	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Methoxyethanol Acetate, 2-	110-49-6	-	1	1.71E+05	1.15E+05	3.23E+09	-	-	-	-	2.36E+04
Methoxyethanol, 2-	109-86-4	-	1	1.39E+05	1.06E+05	3.23E+09	-	-	-	-	1.47E+04
Methyl Acetate	79-20-9	-	1	1.12E+04	2.90E+04	3.23E+09	-	-	-	-	2.95E+06
Methyl Acrylate	96-33-3	-	1	9.62E+03	6.75E+03	3.23E+09	-	-	-	-	8.85E+04
Methyl Ethyl Ketone (2-Butanone)	78-93-3	-	1	1.68E+04	2.84E+04	3.23E+09	-	-	-	-	1.77E+06
Methyl Hydrazine	60-34-4	-	1	2.16E+05	1.80E+05	3.23E+09	-	-	5.51E+02	5.51E+02	2.95E+03

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
MCPA	94-74-6	1.17E+04	-	1.31E+03	1.31E+03 nc
MCPB	94-81-5	2.34E+05	-	2.62E+04	2.62E+04 nc
MCPP	93-65-2	2.34E+04	-	2.62E+03	2.62E+03 nc
Magnesium	7439-95-4	-	-	-	
Magnesium Chlorate	10326-21-3	-	-	-	
Malathion	121-75-5	4.67E+05	-	5.24E+04	5.24E+04 nc
Maleic Anhydride	108-31-6	2.34E+06	8.26E+07	2.61E+05	2.61E+05 max
Maleic Hydrazide	123-33-1	1.17E+07	-	1.31E+06	1.31E+06 max
Malononitrile	109-77-3	2.34E+03	-	2.62E+02	2.62E+02 nc
Mancozeb	8018-01-7	7.01E+05	-	7.86E+04	7.86E+04 nc
Maneb	12427-38-2	1.17E+05	-	1.31E+04	1.31E+04 nc
Manganese (Non-diet)	7439-96-5	-	5.90E+06	6.99E+04	6.99E+04 nc
Mechlorethamine	51-75-2	-	-	-	
Mephosfolan	950-10-7	2.10E+03	-	2.36E+02	2.36E+02 nc
Mepiquat Chloride	24307-26-4	7.01E+05	-	7.86E+04	7.86E+04 nc
Mercuric Chloride	7487-94-7	-	3.54E+07	8.85E+02	8.85E+02 nc
Mercury (elemental)	7439-97-6	-	4.55E+02	4.55E+02	4.55E+02 sat
Merphos	150-50-5	-	-	8.85E+01	8.85E+01 nc
Merphos Oxide	78-48-8	7.01E+02	-	7.86E+01	7.86E+01 nc
Metalaxyl	57837-19-1	1.40E+06	-	1.57E+05	1.57E+05 max
Methacrylonitrile	126-98-7	-	1.03E+04	2.87E+02	2.87E+02 nc
Methamidophos	10265-92-6	1.17E+03	-	1.31E+02	1.31E+02 nc
Methanol	67-56-1	-	2.93E+07	4.91E+06	4.91E+06 sat
Methapyrilene	91-80-5	-	-	-	
Methidathion	950-37-8	2.34E+04	-	2.62E+03	2.62E+03 nc
Methomyl	16752-77-5	5.84E+05	-	6.55E+04	6.55E+04 nc
Methoxy-5-nitroaniline, 2-	99-59-2	-	-	-	3.74E+03 ca
Methoxychlor	72-43-5	1.17E+05	-	1.31E+04	1.31E+04 nc
Methoxyethanol Acetate, 2-	110-49-6	-	6.23E+03	4.93E+03	4.93E+03 nc
Methoxyethanol, 2-	109-86-4	-	1.02E+05	1.29E+04	1.29E+04 nc
Methyl Acetate	79-20-9	-	-	2.95E+06	2.95E+06 sat
Methyl Acrylate	96-33-3	-	7.02E+03	6.50E+03	6.50E+03 nc
Methyl Ethyl Ketone (2-Butanone)	78-93-3	-	3.07E+06	1.12E+06	1.12E+06 sat
Methyl Hydrazine	60-34-4	-	1.57E+02	1.49E+02	1.49E+02 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	No	Yes	-		-		8.00E-02	U	3.00E+00	U	1
Methyl Isocyanate	624-83-9	No	Yes	-		-		-		1.00E-03	U	1
Methyl Mercaptan	74-93-1	No	Yes	-		-		-		-		1
Methyl Mercury	22967-92-6	No	No	-		-		1.00E-04	U	-		1
Methyl Methacrylate	80-62-6	No	Yes	-		-		1.40E+00	U	7.00E-01	U	1
Methyl Parathion	298-00-0	No	No	-		-		2.50E-04	U	-		1
Methyl Phosphonic Acid	993-13-5	No	No	-		-		6.00E-02	U	-		1
Methyl Styrene (Mixed Isomers)	25013-15-4	No	Yes	-		-		6.00E-03	U	4.00E-02	U	1
Methyl dicyclohexylamine, n-	7560-83-0	No	Yes	-		-		-		-		1
Methyl methanesulfonate	66-27-3	No	No	9.90E-02	U	2.80E-05	U	-		-		1
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	U	2.60E-07	U	-		3.00E+00	U	1
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	No	No	-		-		3.00E-04	U	-		1
Methyl-2-Pentanol, 4-	108-11-2	No	Yes	-		-		-		-		1
Methyl-5-Nitroaniline, 2-	99-55-8	No	No	9.00E-03	U	-		2.00E-02	U	-		1
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	No	No	8.30E+00	U	2.40E-03	U	-		-		1
Methylaniline Hydrochloride, 2-	636-21-5	No	No	1.30E-01	U	3.70E-05	U	-		-		1
Methylarsonic acid	124-58-3	No	No	-		-		1.00E-02	U	-		1
Methylaziridine, 2-	75-55-8	No	Yes	-		-		-		-		1
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	No	No	-		-		2.00E-04	U	-		1
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	No	No	1.00E-01	U	-		3.00E-04	U	-		1
Methylcholanthrene, 3-	56-49-5	Yes	No	2.20E+01	U	6.30E-03	U	-		-		1
Methylcyclohexane	108-87-2	No	Yes	-		-		-		-		1
Methylcyclohexylamine, n-	100-60-7	No	Yes	-		-		-		-		1
Methylcyclopentane	96-37-7	No	Yes	-		-		-		-		1
Methylene Chloride	75-09-2	Yes	Yes	2.00E-03	U	1.00E-08	U	6.00E-03	U	6.00E-01	U	1
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	Yes	No	1.00E-01	U	4.30E-04	U	2.00E-03	U	-		1
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	No	No	4.60E-02	U	1.30E-05	U	-		-		1
Methylenebisbenzenamine, 4,4'-	101-77-9	No	No	1.60E+00	U	4.60E-04	U	-		2.00E-02	U	1
Methylenediphenyl Diisocyanate	101-68-8	No	No	-		-		-		6.00E-04	U	1
Methylisothiocyanate	556-61-6	No	Yes	-		-		-		-		1
Methylnaphthalene	1321-94-4	No	Yes	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	-	1	1.46E+04	3.36E+03	3.23E+09	-	-	-	-	2.36E+05
Methyl Isocyanate	624-83-9	-	1	6.08E+03	1.67E+04	3.23E+09	-	-	-	-	-
Methyl Mercaptan	74-93-1	-	1	2.46E+03	3.13E+03	3.23E+09	-	-	-	-	-
Methyl Mercury	22967-92-6	-	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Methyl Methacrylate	80-62-6	-	1	8.75E+03	2.36E+03	3.23E+09	-	-	-	-	4.13E+06
Methyl Parathion	298-00-0	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+02
Methyl Phosphonic Acid	993-13-5	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+05
Methyl Styrene (Mixed Isomers)	25013-15-4	-	1	1.65E+04	3.93E+02	3.23E+09	-	-	-	-	1.77E+04
Methyl dicyclohexylamine, n-	7560-83-0	-	1	6.54E+04	-	3.23E+09	-	-	-	-	-
Methyl methanesulfonate	66-27-3	0.1	1	-	-	3.23E+09	2.09E+03	1.65E+04	2.95E+08	1.85E+03	-
Methyl tert-Butyl Ether (MTBE)	1634-04-4	-	1	6.76E+03	8.88E+03	3.23E+09	1.15E+05	-	6.65E+04	4.21E+04	-
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Methyl-2-Pentanol, 4-	108-11-2	-	1	2.37E+04	2.45E+03	3.23E+09	-	-	-	-	-
Methyl-5-Nitroaniline, 2-	99-55-8	0.1	1	-	-	3.23E+09	2.29E+04	1.82E+05	-	2.04E+04	5.90E+04
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	0.1	1	-	-	3.23E+09	2.49E+01	1.97E+02	3.44E+06	2.21E+01	-
Methylaniline Hydrochloride, 2-	636-21-5	0.1	1	-	-	3.23E+09	1.59E+03	1.26E+04	2.23E+08	1.41E+03	-
Methylarsonic acid	124-58-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Methylaziridine, 2-	75-55-8	-	1	4.41E+04	1.87E+05	3.23E+09	-	-	-	-	-
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	0.1	1	-	-	3.23E+09	2.06E+03	1.64E+04	-	1.83E+03	8.85E+02
Methylcholanthrene, 3-	56-49-5	0.1	1	-	-	3.23E+09	9.38E+00	7.44E+01	1.31E+06	8.33E+00	-
Methylcyclohexane	108-87-2	-	1	1.37E+03	6.77E+01	3.23E+09	-	-	-	-	-
Methylcyclohexylamine, n-	100-60-7	-	1	4.39E+04	2.81E+04	3.23E+09	-	-	-	-	-
Methylcyclopentane	96-37-7	-	1	1.22E+03	1.54E+02	3.23E+09	-	-	-	-	-
Methylene Chloride	75-09-2	-	1	3.02E+03	3.32E+03	3.23E+09	1.03E+05	-	7.72E+05	9.11E+04	1.77E+04
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	0.1	1	-	-	3.23E+09	2.06E+03	1.64E+04	1.92E+07	1.83E+03	5.90E+03
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	0.1	1	-	-	3.23E+09	4.49E+03	3.56E+04	6.35E+08	3.99E+03	-
Methylenebisbenzenamine, 4,4'-	101-77-9	0.1	1	-	-	3.23E+09	1.29E+02	1.02E+03	1.80E+07	1.15E+02	-
Methylenediphenyl Diisocyanate	101-68-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Methylisothiocyanate	556-61-6	-	1	2.04E+04	-	3.23E+09	-	-	-	-	-
Methylnaphthalene	1321-94-4	-	1	8.08E+04	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	-	1.60E+06	2.06E+05	2.06E+05 sat
Methyl Isocyanate	624-83-9	-	2.22E+02	2.22E+02	2.22E+02 nc
Methyl Mercaptan	74-93-1	-	-	-	
Methyl Mercury	22967-92-6	-	-	2.95E+02	2.95E+02 nc
Methyl Methacrylate	80-62-6	-	2.24E+05	2.12E+05	2.12E+05 sat
Methyl Parathion	298-00-0	5.84E+03	-	6.55E+02	6.55E+02 nc
Methyl Phosphonic Acid	993-13-5	1.40E+06	-	1.57E+05	1.57E+05 max
Methyl Styrene (Mixed Isomers)	25013-15-4	-	2.42E+04	1.02E+04	1.02E+04 sat
Methyl dicyclohexylamine, n-	7560-83-0	-	-	-	
Methyl methanesulfonate	66-27-3	-	-	-	1.85E+03 ca
Methyl tert-Butyl Ether (MTBE)	1634-04-4	-	7.41E+05	7.41E+05	4.21E+04 sat
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	7.01E+03	-	7.86E+02	7.86E+02 nc
Methyl-2-Pentanol, 4-	108-11-2	-	-	-	
Methyl-5-Nitroaniline, 2-	99-55-8	4.67E+05	-	5.24E+04	2.04E+04 ca**
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	-	-	-	2.21E+01 ca
Methylaniline Hydrochloride, 2-	636-21-5	-	-	-	1.41E+03 ca
Methylarsonic acid	124-58-3	2.34E+05	-	2.62E+04	2.62E+04 nc
Methylaziridine, 2-	75-55-8	-	-	-	
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	4.67E+03	-	5.24E+02	5.24E+02 nc
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	7.01E+03	-	7.86E+02	7.86E+02 nc
Methylcholanthrene, 3-	56-49-5	-	-	-	8.33E+00 ca
Methylcyclohexane	108-87-2	-	-	-	
Methylcyclohexylamine, n-	100-60-7	-	-	-	
Methylcyclopentane	96-37-7	-	-	-	
Methylene Chloride	75-09-2	-	6.62E+04	1.40E+04	1.40E+04 sat
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	4.67E+04	-	5.24E+03	1.83E+03 ca**
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	-	-	-	3.99E+03 ca
Methylenebisbenzenamine, 4,4'-	101-77-9	-	2.36E+09	2.36E+09	1.15E+02 ca
Methylenediphenyl Diisocyanate	101-68-8	-	7.08E+07	7.08E+07	7.08E+07 max
Methylisothiocyanate	556-61-6	-	-	-	
Methylnaphthalene	1321-94-4	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	U	-		7.00E-02	U	-		1
Methylnaphthalene, 2-	91-57-6	No	Yes	-		-		4.00E-03	U	-		1
Methylstyrene, Alpha-	98-83-9	No	Yes	-		-		7.00E-02	U	-		1
Methyltriethyl Lead	1762-28-3	No	Yes	-		-		-		-		1
Metolachlor	51218-45-2	No	No	-		-		1.50E-01	U	-		1
Metribuzin	21087-64-9	No	No	-		-		2.50E-02	U	-		1
Mineral oils	8012-95-1	No	Yes	-		-		3.00E+00	U	-		1
Mirex	2385-85-5	No	Yes	1.80E+01	U	5.10E-03	U	2.00E-04	U	-		1
Molinate	2212-67-1	No	No	-		-		2.00E-03	U	-		1
Molybdenum	7439-98-7	No	No	-		-		5.00E-03	U	-		1
Monoaluminum phosphate	13530-50-2	No	No	-		-		4.86E+01	U	-		1
Monochloramine	10599-90-3	No	No	-		-		1.00E-01	U	-		1
Monochlorobutanes	25154-42-1	No	No	-		-		-		-		1
Monochlorophenols (total)	NA	No	No	-		-		-		-		1
Monocyclic aromatic hydrocarbons (total)	NA	No	No	-		-		-		-		1
Monomagnesium phosphate	7757-86-0	No	No	-		-		4.86E+01	U	-		1
Monomethylaniline	100-61-8	No	No	-		-		2.00E-03	U	-		1
Monopotassium phosphate	7778-77-0	No	No	-		-		4.86E+01	U	-		1
Monosodium phosphate	7558-80-7	No	No	-		-		4.86E+01	U	-		1
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No	-		-		3.00E-04	U	-		1
N-Methyl dithiocarbamate	137-42-8	No	No	-		-		-		-		1
Naled	300-76-5	No	Yes	-		-		2.00E-03	U	-		1
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes	-		-		3.00E-02	U	1.00E-01	U	1
Naphthalene	91-20-3	No	Yes	-		3.40E-05	U	2.00E-02	U	3.00E-03	U	1
Naphthol, 2-	135-19-3	No	No	-		-		-		-		1
Naphthoquinone, 1,4-	130-15-4	No	No	-		-		-		-		1
Naphthylamine, 1-	134-32-7	No	No	-		-		-		-		1
Naphthylamine, 2-	91-59-8	No	No	1.80E+00	U	0.00E+00	U	-		-		1
Napropamide	15299-99-7	No	No	-		-		1.00E-01	U	-		1
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No	-		-		-		-		1
Niagara Blue 4B	2429-74-5	No	No	-		-		-		-		1
Monobutyltin Compounds	NA	No	No	-		-		-		-		1
Monocalcium phosphate	7758-23-8	No	No	-		-		4.86E+01	U	-		1
Monochloramine	10599-90-3	No	No	-		-		1.00E-01	U	-		1
Monochlorobutanes	25154-42-1	No	No	-		-		-		-		1
Monochlorophenols (total)	NA	No	No	-		-		-		-		1
Monocyclic aromatic hydrocarbons (total)	NA	No	No	-		-		-		-		1
Monomagnesium phosphate	7757-86-0	No	No	-		-		4.86E+01	U	-		1
Monomethylaniline	100-61-8	No	No	-		-		2.00E-03	U	-		1
Monopotassium phosphate	7778-77-0	No	No	-		-		4.86E+01	U	-		1
Monosodium phosphate	7558-80-7	No	No	-		-		4.86E+01	U	-		1
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No	-		-		3.00E-04	U	-		1
N-Methyl dithiocarbamate	137-42-8	No	No	-		-		-		-		1
Naled	300-76-5	No	Yes	-		-		2.00E-03	U	-		1
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes	-		-		3.00E-02	U	1.00E-01	U	1
Naphthalene	91-20-3	No	Yes	-		3.40E-05	U	2.00E-02	U	3.00E-03	U	1
Naphthol, 2-	135-19-3	No	No	-		-		-		-		1
Naphthoquinone, 1,4-	130-15-4	No	No	-		-		-		-		1
Naphthylamine, 1-	134-32-7	No	No	-		-		-		-		1
Naphthylamine, 2-	91-59-8	No	No	1.80E+00	U	0.00E+00	U	-		-		1
Napropamide	15299-99-7	No	No	-		-		1.00E-01	U	-		1
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No	-		-		-		-		1
Niagara Blue 4B	2429-74-5	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Methylnaphthalene, 1-	90-12-0	0.13	1	8.09E+04	-	3.23E+09	7.12E+03	4.34E+04	-	6.12E+03	2.06E+05
Methylnaphthalene, 2-	91-57-6	0.13	1	8.00E+04	-	3.23E+09	-	-	-	-	1.18E+04
Methylstyrene, Alpha-	98-83-9	-	1	1.77E+04	5.00E+02	3.23E+09	-	-	-	-	2.06E+05
Methyltriethyl Lead	1762-28-3	-	1	2.24E+03	4.81E+03	3.23E+09	-	-	-	-	-
Metolachlor	51218-45-2	0.1	1	-	-	3.23E+09	-	-	-	-	4.42E+05
Metribuzin	21087-64-9	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Mineral oils	8012-95-1	-	1	1.90E+03	3.41E-01	3.23E+09	-	-	-	-	8.85E+06
Mirex	2385-85-5	-	1	1.18E+06	-	3.23E+09	1.15E+01	-	5.92E+02	1.13E+01	5.90E+02
Molinate	2212-67-1	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Molybdenum	7439-98-7	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Monoaluminum phosphate	13530-50-2	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Monoammonium phosphate	7722-76-1	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Monobutyltin Compounds	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Monocalcium phosphate	7758-23-8	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Monochloramine	10599-90-3	-	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Monochlorobutanes	25154-42-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Monochlorophenols (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Monocyclic aromatic hydrocarbons (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Monomagnesium phosphate	7757-86-0	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Monomethylaniline	100-61-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Monopotassium phosphate	7778-77-0	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Monosodium phosphate	7558-80-7	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
N-Methyl dithiocarbamate	137-42-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Naled	300-76-5	-	1	7.87E+04	-	3.23E+09	-	-	-	-	5.90E+03
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	-	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Naphthalene	91-20-3	0.13	1	6.38E+04	-	3.23E+09	-	-	4.79E+03	4.79E+03	5.90E+04
Naphthol, 2-	135-19-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Naphthoquinone, 1,4-	130-15-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Naphthylamine, 1-	134-32-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Naphthylamine, 2-	91-59-8	0.1	1	-	-	3.23E+09	1.15E+02	9.09E+02	-	1.02E+02	-
Napropamide	15299-99-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	-	1	-	-	3.23E+09	-	-	-	-	-
Niagara Blue 4B	2429-74-5	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Methylnaphthalene, 1-	90-12-0	1.26E+06	-	1.77E+05	6.12E+03 ca*
Methylnaphthalene, 2-	91-57-6	7.19E+04	-	1.01E+04	1.01E+04 nc
Methylstyrene, Alpha-	98-83-9	-	-	2.06E+05	2.06E+05 sat
Methyltriethyl Lead	1762-28-3	-	-	-	
Metolachlor	51218-45-2	3.51E+06	-	3.93E+05	3.93E+05 max
Metribuzin	21087-64-9	5.84E+05	-	6.55E+04	6.55E+04 nc
Mineral oils	8012-95-1	-	-	8.85E+06	8.85E+06 sat
Mirex	2385-85-5	-	-	5.90E+02	1.13E+01 ca*
Molinate	2212-67-1	4.67E+04	-	5.24E+03	5.24E+03 nc
Molybdenum	7439-98-7	-	-	1.47E+04	1.47E+04 nc
Monoaluminum phosphate	13530-50-2	-	-	1.43E+08	1.43E+08 max
Monoammonium phosphate	7722-76-1	-	-	1.43E+08	1.43E+08 max
Monobutyltin Compounds	NA	-	-	-	
Monocalcium phosphate	7758-23-8	-	-	1.43E+08	1.43E+08 max
Monochloramine	10599-90-3	-	-	2.95E+05	2.95E+05 max
Monochlorobutanes	25154-42-1	-	-	-	
Monochlorophenols (total)	NA	-	-	-	
Monocyclic aromatic hydrocarbons (total)	NA	-	-	-	
Monomagnesium phosphate	7757-86-0	-	-	1.43E+08	1.43E+08 max
Monomethylaniline	100-61-8	4.67E+04	-	5.24E+03	5.24E+03 nc
Monopotassium phosphate	7778-77-0	-	-	1.43E+08	1.43E+08 max
Monosodium phosphate	7558-80-7	-	-	1.43E+08	1.43E+08 max
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	7.01E+03	-	7.86E+02	7.86E+02 nc
N-Methyl dithiocarbamate	137-42-8	-	-	-	
Naled	300-76-5	-	-	5.90E+03	5.90E+03 nc
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	-	1.18E+10	8.85E+04	8.85E+04 nc
Naphthalene	91-20-3	3.60E+05	6.99E+03	6.14E+03	4.79E+03 ca**
Naphthol, 2-	135-19-3	-	-	-	
Naphthoquinone, 1,4-	130-15-4	-	-	-	
Naphthylamine, 1-	134-32-7	-	-	-	
Naphthylamine, 2-	91-59-8	-	-	-	1.02E+02 ca
Napropamide	15299-99-7	2.34E+06	-	2.62E+05	2.62E+05 max
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	-	-	-	
Niagara Blue 4B	2429-74-5	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Nickel Acetate	373-02-4	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Carbonate	3333-67-3	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Carbonyl	13463-39-3	No	Yes	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Hydroxide	12054-48-7	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickel Oxide	1313-99-1	No	No	-		2.60E-04	U	1.10E-02	U	2.00E-05	U	0.04
Nickel Refinery Dust	NA	No	No	-		2.40E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickel Soluble Salts	7440-02-0	No	No	-		2.60E-04	U	2.00E-02	U	9.00E-05	U	0.04
Nickel Subsulfide	12035-72-2	No	No	1.70E+00	U	4.80E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickelocene	1271-28-9	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nicotinonitrile	100-54-9	No	No	-		-		-		-		1
Niobium	7440-03-1	No	No	-		-		-		-		1
Nitrapyrin	1929-82-4	No	Yes	-		-		-		-		1
Nitrate	14797-55-8	No	No	-		-		1.60E+00	U	-		1
Nitrate + Nitrite (as N)	NA	No	No	-		-		-		-		1
Nitric Acid	7697-37-2	No	No	-		-		-		-		1
Nitric Oxide	10102-43-9	No	Yes	-		-		-		-		1
Nitrite	14797-65-0	No	No	-		-		1.00E-01	U	-		1
Nitroaniline, 2-	88-74-4	No	No	-		-		1.00E-02	U	5.00E-05	U	1
Nitroaniline, 3-	99-09-2	No	No	-		-		-		-		1
Nitroaniline, 4-	100-01-6	No	No	2.00E-02	U	-		4.00E-03	U	6.00E-03	U	1
Nitrobenzene	98-95-3	No	Yes	-		4.00E-05	U	2.00E-03	U	9.00E-03	U	1
Nitrobiphenyl, 4-	92-93-3	No	No	-		-		-		-		1
Nitrocellulose	9004-70-0	No	No	-		-		3.00E+03	U	-		1
Nitrodiphenylamine, 2-	119-75-5	No	No	-		-		-		-		1
Nitrofurantoin	67-20-9	No	No	-		-		7.00E-02	U	-		1
Nitrofurazone	59-87-0	No	No	1.30E+00	U	3.70E-04	U	-		-		1
Nitrogen Dioxide	10102-44-0	No	Yes	-		-		-		-		1
Nitroglycerin	55-63-0	No	No	1.70E-02	U	-		1.00E-04	U	-		1
Nitroguanidine	556-88-7	No	No	-		-		1.00E-01	U	-		1
Nitromethane	75-52-5	No	Yes	-		8.80E-06	U	-		5.00E-03	U	1
Nitrophenol, 2-	88-75-5	No	Yes	-		-		-		-		1
Nitrophenol, 2-amino-4-	99-57-0	No	No	-		-		-		-		1
Nitrophenol, 3-	554-84-7	No	No	-		-		-		-		1
Nitrophenol, 4-	100-02-7	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Nickel Acetate	373-02-4	0.1	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nickel Carbonate	3333-67-3	0.1	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nickel Carbonyl	13463-39-3	-	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nickel Hydroxide	12054-48-7	-	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nickel Oxide	1313-99-1	-	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nickel Refinery Dust	NA	-	1	-	-	3.23E+09	-	-	3.44E+07	3.44E+07	3.24E+04
Nickel Soluble Salts	7440-02-0	-	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	5.90E+04
Nickel Subsulfide	12035-72-2	-	1	-	-	3.23E+09	1.21E+02	-	1.72E+07	1.21E+02	3.24E+04
Nickelocene	1271-28-9	0.1	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04
Nicotinonitrile	100-54-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Niobium	7440-03-1	-	1	-	-	3.23E+09	-	-	-	-	-
Nitrapyrin	1929-82-4	-	1	3.05E+05	-	3.23E+09	-	-	-	-	-
Nitrate	14797-55-8	-	1	-	-	3.23E+09	-	-	-	-	4.72E+06
Nitrate + Nitrite (as N)	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Nitric Acid	7697-37-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitric Oxide	10102-43-9	-	1	-	-	3.23E+09	-	-	-	-	-
Nitrite	14797-65-0	-	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Nitroaniline, 2-	88-74-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Nitroaniline, 3-	99-09-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitroaniline, 4-	100-01-6	0.1	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	1.18E+04
Nitrobenzene	98-95-3	-	1	1.01E+05	3.04E+03	3.23E+09	-	-	6.44E+03	6.44E+03	5.90E+03
Nitrobiphenyl, 4-	92-93-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitrocellulose	9004-70-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+09
Nitrodiphenylamine, 2-	119-75-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitrofurantoin	67-20-9	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+05
Nitrofurazone	59-87-0	0.1	1	-	-	3.23E+09	1.59E+02	1.26E+03	2.23E+07	1.41E+02	-
Nitrogen Dioxide	10102-44-0	-	1	-	-	3.23E+09	-	-	-	-	-
Nitroglycerin	55-63-0	0.1	1	-	-	3.23E+09	1.21E+04	9.62E+04	-	1.08E+04	2.95E+02
Nitroguanidine	556-88-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Nitromethane	75-52-5	-	1	2.34E+04	1.80E+04	3.23E+09	-	-	6.78E+03	6.78E+03	-
Nitrophenol, 2-	88-75-5	-	1	1.65E+05	-	3.23E+09	-	-	-	-	-
Nitrophenol, 2-amino-4-	99-57-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitrophenol, 3-	554-84-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitrophenol, 4-	100-02-7	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Nickel Acetate	373-02-4	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nickel Carbonate	3333-67-3	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nickel Carbonyl	13463-39-3	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Hydroxide	12054-48-7	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Oxide	1313-99-1	-	2.36E+06	3.20E+04	3.20E+04 nc
Nickel Refinery Dust	NA	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Soluble Salts	7440-02-0	-	1.06E+07	5.87E+04	5.87E+04 nc
Nickel Subsulfide	12035-72-2	-	1.65E+06	3.18E+04	1.21E+02 ca
Nickelocene	1271-28-9	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nicotinonitrile	100-54-9	-	-	-	
Niobium	7440-03-1	-	-	-	
Nitrapyrin	1929-82-4	-	-	-	
Nitrate	14797-55-8	-	-	4.72E+06	4.72E+06 max
Nitrate + Nitrite (as N)	NA	-	-	-	
Nitric Acid	7697-37-2	-	-	-	
Nitric Oxide	10102-43-9	-	-	-	
Nitrite	14797-65-0	-	-	2.95E+05	2.95E+05 max
Nitroaniline, 2-	88-74-4	2.34E+05	5.90E+06	2.61E+04	2.61E+04 nc
Nitroaniline, 3-	99-09-2	-	-	-	
Nitroaniline, 4-	100-01-6	9.35E+04	7.08E+08	1.05E+04	9.17E+03 ca**
Nitrobenzene	98-95-3	-	3.31E+04	5.01E+03	5.01E+03 sat
Nitrobiphenyl, 4-	92-93-3	-	-	-	
Nitrocellulose	9004-70-0	7.01E+10	-	7.86E+09	7.86E+09 max
Nitrodiphenylamine, 2-	119-75-5	-	-	-	
Nitrofurantoin	67-20-9	1.64E+06	-	1.83E+05	1.83E+05 max
Nitrofurazone	59-87-0	-	-	-	1.41E+02 ca
Nitrogen Dioxide	10102-44-0	-	-	-	
Nitroglycerin	55-63-0	2.34E+03	-	2.62E+02	2.62E+02 nc
Nitroguanidine	556-88-7	2.34E+06	-	2.62E+05	2.62E+05 max
Nitromethane	75-52-5	-	4.26E+03	4.26E+03	4.26E+03 nc
Nitrophenol, 2-	88-75-5	-	-	-	
Nitrophenol, 2-amino-4-	99-57-0	-	-	-	
Nitrophenol, 3-	554-84-7	-	-	-	
Nitrophenol, 4-	100-02-7	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Nitrophenol, 4-amino-2-	119-34-6	No	No	-		-		-		-		1
Nitropropane, 2-	79-46-9	No	Yes	-		2.70E-03	U	-		2.00E-02	U	1
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	U	1.10E-04	U	-		-		1
Nitroquinoline-1-oxide. 4-	56-57-5	No	No	-		-		-		-		1
Nitroso-N-ethylurea, N-	759-73-9	Yes	No	2.70E+01	U	7.70E-03	U	-		-		1
Nitroso-N-methylurea, N-	684-93-5	Yes	No	1.20E+02	U	3.40E-02	U	-		-		1
Nitroso-di-N-butylamine, N-	924-16-3	No	Yes	5.40E+00	U	1.60E-03	U	-		-		1
Nitroso-di-N-propylamine, N-	621-64-7	No	No	7.00E+00	U	2.00E-03	U	-		-		1
Nitrosodiethanolamine, N-	1116-54-7	No	No	2.80E+00	U	8.00E-04	U	-		-		1
Nitrosodiethylamine, N-	55-18-5	Yes	No	1.50E+02	U	4.30E-02	U	-		-		1
Nitrosodimethylamine, N-	62-75-9	Yes	Yes	5.10E+01	U	1.40E-02	U	8.00E-06	U	4.00E-05	U	1
Nitrosodiphenylamine, N-	86-30-6	No	No	4.90E-03	U	2.60E-06	U	-		-		1
Nitrosomethylethylamine, N-	10595-95-6	No	Yes	2.20E+01	U	6.30E-03	U	-		-		1
Nitrosomethylvinylamine, N-	4549-40-0	No	Yes	-		-		-		-		1
Nitrosomorpholine [N-]	59-89-2	No	No	6.70E+00	U	1.90E-03	U	-		-		1
Nitrosopiperidine [N-]	100-75-4	No	No	9.40E+00	U	2.70E-03	U	-		-		1
Nitrosopyrrolidine, N-	930-55-2	No	No	2.10E+00	U	6.10E-04	U	-		-		1
Nitrotoluene, 4-Amino-2-	119-32-4	No	No	-		-		-		-		1
Nitrotoluene, m-	99-08-1	No	No	-		-		1.00E-04	U	-		1
Nitrotoluene, o-	88-72-2	No	Yes	2.20E-01	U	-		9.00E-04	U	-		1
Nitrotoluene, p-	99-99-0	No	No	1.60E-02	U	-		4.00E-03	U	-		1
Nonachlor, trans-	39765-80-5	No	Yes	-		-		-		-		1
Nonane, n-	111-84-2	No	Yes	-		-		3.00E-04	U	2.00E-02	U	1
Nonanol, n-	143-08-8	No	Yes	-		-		-		-		1
Norflurazon	27314-13-2	No	No	-		-		4.00E-02	U	-		1
Nustar	85509-19-9	No	No	-		-		7.00E-04	U	-		1
OCDD	3268-87-9	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
OCDF	39001-02-0	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
Octabromodiphenyl Ether	32536-52-0	No	No	-		-		3.00E-03	U	-		1
Octachlorostyrene	29082-74-4	No	Yes	-		-		-		-		1
Octadecanoic Acid	57-11-4	No	No	-		-		-		-		1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	No	No	-		-		5.00E-02	U	-		1
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Nitrophenol, 4-amino-2-	119-34-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitropropane, 2-	79-46-9	-	1	1.81E+04	4.86E+03	3.23E+09	-	-	1.71E+01	1.71E+01	-
Nitropyrene, 4-	57835-92-4	0.13	1	-	-	3.23E+09	1.72E+02	1.05E+03	7.51E+07	1.48E+02	-
Nitroquinoline-1-oxide. 4-	56-57-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitroso-N-ethylurea, N-	759-73-9	0.1	1	-	-	3.23E+09	7.65E+00	6.06E+01	1.07E+06	6.79E+00	-
Nitroso-N-methylurea, N-	684-93-5	0.1	1	-	-	3.23E+09	1.72E+00	1.36E+01	2.43E+05	1.53E+00	-
Nitroso-di-N-butylamine, N-	924-16-3	-	1	3.35E+05	-	3.23E+09	3.82E+01	-	5.35E+02	3.57E+01	-
Nitroso-di-N-propylamine, N-	621-64-7	0.1	1	-	-	3.23E+09	2.95E+01	2.34E+02	4.13E+06	2.62E+01	-
Nitrosodiethanolamine, N-	1116-54-7	0.1	1	-	-	3.23E+09	7.37E+01	5.84E+02	1.03E+07	6.55E+01	-
Nitrosodiethylamine, N-	55-18-5	0.1	1	-	-	3.23E+09	1.38E+00	1.09E+01	1.92E+05	1.22E+00	-
Nitrosodimethylamine, N-	62-75-9	-	1	1.14E+05	2.37E+05	3.23E+09	4.05E+00	-	2.07E+01	3.39E+00	2.36E+01
Nitrosodiphenylamine, N-	86-30-6	0.1	1	-	-	3.23E+09	4.21E+04	3.34E+05	3.18E+09	3.74E+04	-
Nitrosomethylethylamine, N-	10595-95-6	-	1	1.67E+05	1.08E+05	3.23E+09	9.38E+00	-	6.77E+01	8.24E+00	-
Nitrosomethylvinylamine, N-	4549-40-0	-	1	1.12E+05	1.08E+04	3.23E+09	-	-	-	-	-
Nitrosomorpholine [N-]	59-89-2	0.1	1	-	-	3.23E+09	3.08E+01	2.44E+02	4.35E+06	2.74E+01	-
Nitrosopiperidine [N-]	100-75-4	0.1	1	-	-	3.23E+09	2.20E+01	1.74E+02	3.06E+06	1.95E+01	-
Nitrosopyrrolidine, N-	930-55-2	0.1	1	-	-	3.23E+09	9.83E+01	7.79E+02	1.35E+07	8.73E+01	-
Nitrotoluene, 4-Amino-2-	119-32-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Nitrotoluene, m-	99-08-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Nitrotoluene, o-	88-72-2	-	1	1.89E+05	1.51E+03	3.23E+09	9.38E+02	-	-	9.38E+02	2.65E+03
Nitrotoluene, p-	99-99-0	0.1	1	-	-	3.23E+09	1.29E+04	1.02E+05	-	1.15E+04	1.18E+04
Nonachlor, trans-	39765-80-5	-	1	3.73E+06	-	3.23E+09	-	-	-	-	-
Nonane, n-	111-84-2	-	1	1.44E+03	6.86E+00	3.23E+09	-	-	-	-	8.85E+02
Nonanol, n-	143-08-8	-	1	6.41E+04	7.27E+01	3.23E+09	-	-	-	-	-
Norflurazon	27314-13-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Nustar	85509-19-9	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+03
OCDD	3268-87-9	0.03	1	-	-	3.23E+09	5.29E+00	1.40E+02	7.25E+05	5.10E+00	6.87E+00
OCDF	39001-02-0	0.03	1	-	-	3.23E+09	5.29E+00	1.40E+02	7.25E+05	5.10E+00	6.87E+00
Octabromodiphenyl Ether	32536-52-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Octachlorostyrene	29082-74-4	-	1	8.40E+05	-	3.23E+09	-	-	-	-	-
Octadecanoic Acid	57-11-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	0.006	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Nitrophenol, 4-amino-2-	119-34-6	-	-	-	
Nitropropane, 2-	79-46-9	-	1.32E+04	1.32E+04	1.71E+01 ca
Nitropyrene, 4-	57835-92-4	-	-	-	1.48E+02 ca
Nitroquinoline-1-oxide. 4-	56-57-5	-	-	-	
Nitroso-N-ethylurea, N-	759-73-9	-	-	-	6.79E+00 ca
Nitroso-N-methylurea, N-	684-93-5	-	-	-	1.53E+00 ca
Nitroso-di-N-butylamine, N-	924-16-3	-	-	-	3.57E+01 ca
Nitroso-di-N-propylamine, N-	621-64-7	-	-	-	2.62E+01 ca
Nitrosodiethanolamine, N-	1116-54-7	-	-	-	6.55E+01 ca
Nitrosodiethylamine, N-	55-18-5	-	-	-	1.22E+00 ca
Nitrosodimethylamine, N-	62-75-9	-	1.66E+02	2.07E+01	3.39E+00 ca**
Nitrosodiphenylamine, N-	86-30-6	-	-	-	3.74E+04 ca
Nitrosomethylethylamine, N-	10595-95-6	-	-	-	8.24E+00 ca
Nitrosomethylvinylamine, N-	4549-40-0	-	-	-	
Nitrosomorpholine [N-]	59-89-2	-	-	-	2.74E+01 ca
Nitrosopiperidine [N-]	100-75-4	-	-	-	1.95E+01 ca
Nitrosopyrrolidine, N-	930-55-2	-	-	-	8.73E+01 ca
Nitrotoluene, 4-Amino-2-	119-32-4	-	-	-	
Nitrotoluene, m-	99-08-1	2.34E+03	-	2.62E+02	2.62E+02 nc
Nitrotoluene, o-	88-72-2	-	-	2.65E+03	9.38E+02 ca**
Nitrotoluene, p-	99-99-0	9.35E+04	-	1.05E+04	1.05E+04 nc
Nonachlor, trans-	39765-80-5	-	-	-	
Nonane, n-	111-84-2	-	1.05E+03	4.80E+02	4.80E+02 sat
Nonanol, n-	143-08-8	-	-	-	
Norflurazon	27314-13-2	9.35E+05	-	1.05E+05	1.05E+05 max
Nustar	85509-19-9	1.64E+04	-	1.83E+03	1.83E+03 nc
OCDD	3268-87-9	1.82E+02	1.57E+07	6.62E+00	5.10E+00 ca**
OCDF	39001-02-0	1.82E+02	1.57E+07	6.62E+00	5.10E+00 ca**
Octabromodiphenyl Ether	32536-52-0	7.01E+04	-	7.86E+03	7.86E+03 nc
Octachlorostyrene	29082-74-4	-	-	-	
Octadecanoic Acid	57-11-4	-	-	-	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	1.95E+07	-	1.46E+05	1.46E+05 max
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Octamethylpyrophosphoramide	152-16-9	No	No	-		-		2.00E-03	U	-		1
Octanol, n-	111-87-5	No	Yes	-		-		-		-		1
Octanone, 2-	111-13-7	No	Yes	-		-		-		-		1
Octanone, 3-	106-68-3	No	Yes	-		-		-		-		1
Octyl Phthalate, di-N-	117-84-0	No	No	-		-		1.00E-02	U	-		1
Oleic acid	112-80-1	No	Yes	-		-		-		-		1
Oleum	8014-95-7	Yes	No	-		-		-		-		1
Oryzalin	19044-88-3	No	No	-		-		5.00E-02	U	-		1
Oxadiazon	19666-30-9	No	No	-		-		5.00E-03	U	-		1
Oxamyl	23135-22-0	No	No	-		-		2.50E-02	U	-		1
Oxychlordane	27304-13-8	No	No	-		-		-		-		1
Ozone	10028-15-6	No	No	-		-		-		-		1
Paclobutrazol	76738-62-0	No	No	-		-		1.30E-02	U	-		1
Paraquat Dichloride	1910-42-5	No	No	-		-		4.50E-03	U	-		1
Parathion	56-38-2	No	No	-		-		6.00E-03	U	-		1
PeCDD, 2,3,7,8-	36088-22-9	No	No	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
PeCDF, 1,2,3,7,8-	57117-41-6	No	No	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1
PeCDF, 2,3,4,7,8-	57117-31-4	No	No	3.90E+04	U	1.14E+01	U	2.33E-09	U	1.33E-07	U	1
Pebulate	1114-71-2	No	Yes	-		-		5.00E-02	U	-		1
Pendimethalin	40487-42-1	No	No	-		-		4.00E-02	U	-		1
Pentabromodiphenyl Ether	32534-81-9	No	No	-		-		2.00E-03	U	-		1
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	No	No	-		-		1.00E-04	U	-		1
Pentachloroaniline	527-20-8	No	No	-		-		-		-		1
Pentachlorobenzene	608-93-5	No	Yes	-		-		8.00E-04	U	-		1
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Pentachlorocyclopentadiene	25329-35-5	No	Yes	-		-		-		-		1
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
Pentachloroethane	76-01-7	No	Yes	9.00E-02	U	-		-		-		1
Pentachloronitrobenzene	82-68-8	No	Yes	2.60E-01	U	-		3.00E-03	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Octamethylpyrophosphoramide	152-16-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Octanol, n-	111-87-5	-	1	5.35E+04	1.78E+02	3.23E+09	-	-	-	-	-
Octanone, 2-	111-13-7	-	1	2.12E+04	3.60E+02	3.23E+09	-	-	-	-	-
Octanone, 3-	106-68-3	-	1	2.60E+04	1.08E+03	3.23E+09	-	-	-	-	-
Octyl Phthalate, di-N-	117-84-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Oleic acid	112-80-1	-	1	1.43E+06	1.44E+00	3.23E+09	-	-	-	-	-
Oleum	8014-95-7	-	1	-	-	3.23E+09	-	-	-	-	-
Oryzalin	19044-88-3	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Oxadiazon	19666-30-9	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Oxamyl	23135-22-0	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Oxychlordane	27304-13-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ozone	10028-15-6	-	1	-	-	3.23E+09	-	-	-	-	-
Paclobutrazol	76738-62-0	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Paraquat Dichloride	1910-42-5	0.1	1	-	-	3.23E+09	-	-	-	-	1.33E+04
Parathion	56-38-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+04
PeCDD, 2,3,7,8-	36088-22-9	0.03	1	-	-	3.23E+09	1.59E-03	4.20E-02	2.17E+02	1.53E-03	2.06E-03
PeCDF, 1,2,3,7,8-	57117-41-6	0.03	1	-	-	3.23E+09	5.29E-02	1.40E+00	7.25E+03	5.10E-02	6.87E-02
PeCDF, 2,3,4,7,8-	57117-31-4	0.03	1	-	-	3.23E+09	5.29E-03	1.40E-01	7.25E+02	5.10E-03	6.87E-03
Pebulate	1114-71-2	-	1	6.20E+04	-	3.23E+09	-	-	-	-	1.47E+05
Pendimethalin	40487-42-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Pentabromodiphenyl Ether	32534-81-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Pentachloroaniline	527-20-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pentachlorobenzene	608-93-5	-	1	1.12E+05	-	3.23E+09	-	-	-	-	2.36E+03
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	0.14	1	1.42E+06	-	3.23E+09	5.29E+01	3.00E+02	3.19E+03	4.44E+01	6.87E+01
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	0.14	1	1.14E+06	-	3.23E+09	5.29E+01	3.00E+02	2.56E+03	4.42E+01	6.87E+01
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	0.14	1	1.17E+06	-	3.23E+09	5.29E+01	3.00E+02	2.61E+03	4.42E+01	6.87E+01
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	0.14	1	1.42E+06	-	3.23E+09	5.29E+01	3.00E+02	3.19E+03	4.44E+01	6.87E+01
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	0.14	1	1.41E+06	-	3.23E+09	1.59E-02	8.99E-02	9.46E-01	1.33E-02	2.06E-02
Pentachlorocyclopentadiene	25329-35-5	-	1	1.95E+04	-	3.23E+09	-	-	-	-	-
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	0.03	1	4.61E+06	-	3.23E+09	1.59E-03	4.20E-02	3.10E-01	1.52E-03	2.06E-03
Pentachloroethane	76-01-7	-	1	1.33E+04	4.47E+02	3.23E+09	2.29E+03	-	-	2.29E+03	-
Pentachloronitrobenzene	82-68-8	-	1	5.95E+05	-	3.23E+09	7.94E+02	-	-	7.94E+02	8.85E+03

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Octamethylpyrophosphoramide	152-16-9	4.67E+04	-	5.24E+03	5.24E+03 nc
Octanol, n-	111-87-5	-	-	-	
Octanone, 2-	111-13-7	-	-	-	
Octanone, 3-	106-68-3	-	-	-	
Octyl Phthalate, di-N-	117-84-0	2.34E+05	-	2.62E+04	2.62E+04 nc
Oleic acid	112-80-1	-	-	-	
Oleum	8014-95-7	-	-	-	
Oryzalin	19044-88-3	1.17E+06	-	1.31E+05	1.31E+05 max
Oxadiazon	19666-30-9	1.17E+05	-	1.31E+04	1.31E+04 nc
Oxamyl	23135-22-0	5.84E+05	-	6.55E+04	6.55E+04 nc
Oxychlordane	27304-13-8	-	-	-	
Ozone	10028-15-6	-	-	-	
Paclobutrazol	76738-62-0	3.04E+05	-	3.40E+04	3.40E+04 nc
Paraquat Dichloride	1910-42-5	1.05E+05	-	1.18E+04	1.18E+04 nc
Parathion	56-38-2	1.40E+05	-	1.57E+04	1.57E+04 nc
PeCDD, 2,3,7,8-	36088-22-9	5.45E-02	4.72E+03	1.99E-03	1.53E-03 ca**
PeCDF, 1,2,3,7,8-	57117-41-6	1.82E+00	1.57E+05	6.62E-02	5.10E-02 ca**
PeCDF, 2,3,4,7,8-	57117-31-4	1.82E-01	1.57E+04	6.62E-03	5.10E-03 ca**
Pebulate	1114-71-2	-	-	1.47E+05	1.47E+05 max
Pendimethalin	40487-42-1	9.35E+05	-	1.05E+05	1.05E+05 max
Pentabromodiphenyl Ether	32534-81-9	4.67E+04	-	5.24E+03	5.24E+03 nc
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	2.34E+03	-	2.62E+02	2.62E+02 nc
Pentachloroaniline	527-20-8	-	-	-	
Pentachlorobenzene	608-93-5	-	-	2.36E+03	2.36E+03 nc
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	3.89E+02	6.91E+04	5.84E+01	4.44E+01 ca**
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	3.89E+02	5.55E+04	5.83E+01	4.42E+01 ca**
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	3.89E+02	5.66E+04	5.83E+01	4.42E+01 ca**
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	3.89E+02	6.91E+04	5.84E+01	4.44E+01 ca**
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	1.17E-01	2.05E+01	1.75E-02	1.33E-02 ca**
Pentachlorocyclopentadiene	25329-35-5	-	-	-	
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	5.45E-02	6.72E+00	1.99E-03	1.52E-03 ca**
Pentachloroethane	76-01-7	-	-	-	2.29E+03 sat
Pentachloronitrobenzene	82-68-8	-	-	8.85E+03	7.94E+02 ca*

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Pentachlorophenol	87-86-5	No	No	4.00E-01	U	5.10E-06	U	5.00E-03	U	-		1
Pentaerythritol tetranitrate (PETN)	78-11-5	No	No	4.00E-03	U	-		2.00E-03	U	-		1
Pentamethyl dipropylenetriamine	3855-32-1	No	No	-		-		-		-		1
Pentane, n-	109-66-0	No	Yes	-		-		-		1.00E+00	U	1
Pentyl Alcohol, N-	71-41-0	No	Yes	-		-		-		-		1
Perchlorate and Perchlorate Salts	14797-73-0	No	No	-		-		7.00E-04	U	-		1
Perfluorobutane Sulfonate	375-73-5	No	Yes	-		-		2.00E-02	U	-		1
Perfluorooctane Sulphonic Acid	1763-23-1	No	Yes	-		-		-		-		1
Perfluorooctanoic acid	335-67-1	No	Yes	-		-		-		-		1
Permethrin	52645-53-1	No	No	-		-		5.00E-02	U	-		1
Perylene	198-55-0	No	No	-		-		-		-		1
Pesticides (total)	NA	No	No	-		-		-		-		1
Pesticides, organochlorinated (each)	NA	No	No	-		-		-		-		1
Pesticides, organochlorinated (total)	NA	No	No	-		-		-		-		1
Phenacetin	62-44-2	No	No	2.20E-03	U	6.30E-07	U	-		-		1
Phenanthrene	85-01-8	No	Yes	-		-		-		-		1
Phenmedipham	13684-63-4	No	No	-		-		2.50E-01	U	-		1
Phenol	108-95-2	No	No	-		-		3.00E-01	U	2.00E-01	U	1
Phenothiazine	92-84-2	No	No	-		-		5.00E-04	U	-		1
Phenyl Isothiocyanate	103-72-0	No	Yes	-		-		-		-		1
Phenylenediamine, m-	108-45-2	No	No	-		-		6.00E-03	U	-		1
Phenylenediamine, o-	95-54-5	No	No	4.70E-02	U	-		-		-		1
Phenylenediamine, p-	106-50-3	No	No	-		-		1.90E-01	U	-		1
Phenylmercuric Acetate	62-38-4	No	No	-		-		8.00E-05	U	-		1
Phenylphenol, 2-	90-43-7	No	No	1.94E-03	U	-		-		-		1
Phorate	298-02-2	No	No	-		-		2.00E-04	U	-		1
Phosgene	75-44-5	No	Yes	-		-		-		3.00E-04	U	1
Phosmet	732-11-6	No	No	-		-		2.00E-02	U	-		1
Phosphine	7803-51-2	No	Yes	-		-		3.00E-04	U	3.00E-04	U	1
Phosphoric Acid	7664-38-2	No	No	-		-		4.86E+01	U	1.00E-02	U	1
Phosphorus (total)	NA	No	No	-		-		-		-		1
Phosphorus pentoxide	1314-56-3	No	No	-		-		-		-		1
Phosphorus, White	7723-14-0	No	Yes	-		-		2.00E-05	U	-		1
Phthalates (total)	NA	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Pentachlorophenol	87-86-5	0.25	1	-	-	3.23E+09	5.16E+02	1.64E+03	1.62E+09	3.92E+02	1.47E+04
Pentaerythritol tetranitrate (PETN)	78-11-5	0.1	1	-	-	3.23E+09	5.16E+04	4.09E+05	-	4.58E+04	5.90E+03
Pentamethyl dipropylenetriamine	3855-32-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pentane, n-	109-66-0	-	1	1.07E+03	3.88E+02	3.23E+09	-	-	-	-	-
Pentyl Alcohol, N-	71-41-0	-	1	3.91E+04	3.04E+03	3.23E+09	-	-	-	-	-
Perchlorate and Perchlorate Salts	14797-73-0	-	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Perfluorobutane Sulfonate	375-73-5	-	1	1.82E+05	-	3.23E+09	-	-	-	-	5.90E+04
Perfluorooctane Sulphonic Acid	1763-23-1	-	1	1.48E+05	-	3.23E+09	-	-	-	-	-
Perfluorooctanoic acid	335-67-1	-	1	3.00E+04	-	3.23E+09	-	-	-	-	-
Permethrin	52645-53-1	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Perylene	198-55-0	0.13	1	-	-	3.23E+09	-	-	-	-	-
Pesticides (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pesticides, organochlorinated (each)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pesticides, organochlorinated (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Phenacetin	62-44-2	0.1	1	-	-	3.23E+09	9.38E+04	7.44E+05	1.31E+10	8.33E+04	-
Phenanthrene	85-01-8	0.13	1	8.87E+05	-	3.23E+09	-	-	-	-	-
Phenmedipham	13684-63-4	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+05
Phenol	108-95-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+05
Phenothiazine	92-84-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+03
Phenyl Isothiocyanate	103-72-0	-	1	9.76E+03	1.29E+02	3.23E+09	-	-	-	-	-
Phenylenediamine, m-	108-45-2	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+04
Phenylenediamine, o-	95-54-5	0.1	1	-	-	3.23E+09	4.39E+03	3.48E+04	-	3.90E+03	-
Phenylenediamine, p-	106-50-3	0.1	1	-	-	3.23E+09	-	-	-	-	5.60E+05
Phenylmercuric Acetate	62-38-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+02
Phenylphenol, 2-	90-43-7	0.1	1	-	-	3.23E+09	1.06E+05	8.43E+05	-	9.45E+04	-
Phorate	298-02-2	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Phosgene	75-44-5	-	1	1.35E+03	1.61E+03	3.23E+09	-	-	-	-	-
Phosmet	732-11-6	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Phosphine	7803-51-2	-	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Phosphoric Acid	7664-38-2	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Phosphorus (total)	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Phosphorus pentoxide	1314-56-3	-	1	-	-	3.23E+09	-	-	-	-	-
Phosphorus, White	7723-14-0	-	1	9.55E+03	-	3.23E+09	-	-	-	-	5.90E+01
Phthalates (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Pentachlorophenol	87-86-5	4.67E+04	-	1.12E+04	3.92E+02 ca*
Pentaerythritol tetranitrate (PETN)	78-11-5	4.67E+04	-	5.24E+03	5.24E+03 nc
Pentamethyl dipropylenetriamine	3855-32-1	-	-	-	
Pentane, n-	109-66-0	-	3.92E+04	3.92E+04	3.92E+04 sat
Pentyl Alcohol, N-	71-41-0	-	-	-	
Perchlorate and Perchlorate Salts	14797-73-0	-	-	2.06E+03	2.06E+03 nc
Perfluorobutane Sulfonate	375-73-5	-	-	5.90E+04	5.90E+04 nc
Perfluorooctane Sulphonic Acid	1763-23-1	-	-	-	
Perfluorooctanoic acid	335-67-1	-	-	-	
Permethrin	52645-53-1	1.17E+06	-	1.31E+05	1.31E+05 max
Perylene	198-55-0	-	-	-	
Pesticides (total)	NA	-	-	-	
Pesticides, organochlorinated (each)	NA	-	-	-	
Pesticides, organochlorinated (total)	NA	-	-	-	
Phenacetin	62-44-2	-	-	-	8.33E+04 ca
Phenanthrene	85-01-8	-	-	-	
Phenmedipham	13684-63-4	5.84E+06	-	6.55E+05	6.55E+05 max
Phenol	108-95-2	7.01E+06	2.36E+10	7.86E+05	7.86E+05 max
Phenothiazine	92-84-2	1.17E+04	-	1.31E+03	1.31E+03 nc
Phenyl Isothiocyanate	103-72-0	-	-	-	
Phenylenediamine, m-	108-45-2	1.40E+05	-	1.57E+04	1.57E+04 nc
Phenylenediamine, o-	95-54-5	-	-	-	3.90E+03 ca
Phenylenediamine, p-	106-50-3	4.44E+06	-	4.98E+05	4.98E+05 max
Phenylmercuric Acetate	62-38-4	1.87E+03	-	2.10E+02	2.10E+02 nc
Phenylphenol, 2-	90-43-7	-	-	-	9.45E+04 ca
Phorate	298-02-2	4.67E+03	-	5.24E+02	5.24E+02 nc
Phosgene	75-44-5	-	1.48E+01	1.48E+01	1.48E+01 nc
Phosmet	732-11-6	4.67E+05	-	5.24E+04	5.24E+04 nc
Phosphine	7803-51-2	-	3.54E+07	8.85E+02	8.85E+02 nc
Phosphoric Acid	7664-38-2	-	1.18E+09	1.28E+08	1.28E+08 max
Phosphorus (total)	NA	-	-	-	
Phosphorus pentoxide	1314-56-3	-	-	-	
Phosphorus, White	7723-14-0	-	-	5.90E+01	5.90E+01 nc
Phthalates (total)	NA	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Phthalic Acid, P-	100-21-0	No	No	-		-		1.00E+00	U	-		1
Phthalic Acid, m-	121-91-5	No	No	-		-		-		-		1
Phthalic Acid, o-	88-99-3	No	No	-		-		-		-		1
Phthalic Anhydride	85-44-9	No	No	-		-		2.00E+00	U	2.00E-02	U	1
Picloram	1918-02-1	No	No	-		-		7.00E-02	U	-		1
Picoline, 2-	109-06-8	No	Yes	-		-		-		-		1
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	No	No	-		-		1.00E-04	U	-		1
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	No	No	-		-		-		-		1
Piperidine	110-89-4	No	Yes	-		-		-		-		1
Pirimiphos, Methyl	29232-93-7	No	No	-		-		1.00E-02	U	-		1
Polybrominated Biphenyls	59536-65-1	No	No	3.00E+01	U	8.60E-03	U	7.00E-06	U	-		1
Polychlorinated Biphenyls (high risk)	1336-36-3	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1
Polycyclic aromatic hydrocarbons (PAH), Total	NA	No	No	-		-		-		-		1
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	No	No	-		-		-		-		1
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	No	No	-		-		-		-		1
Polycyclic chlorinated hydrocarbons (total)	NA	No	No	-		-		-		-		1
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	No	No	-		-		-		6.00E-04	U	1
Polyphosphoric acid	8017-16-1	No	No	-		-		4.86E+01	U	-		1
Potassium	7440-09-7	No	No	-		-		-		-		1
Potassium Cyanide	151-50-8	No	No	-		-		2.00E-03	U	-		1
Potassium Perchlorate	7778-74-7	No	No	-		-		7.00E-04	U	-		1
Potassium Perfluorobutane Sulfonate	29420-49-3	No	No	-		-		2.00E-02	U	-		1
Potassium Silver Cyanide	506-61-6	No	No	-		-		5.00E-03	U	-		0.04
Potassium chlorate	3811-04-9	No	No	-		-		-		-		1
Potassium tripolyphosphate	13845-36-8	No	No	-		-		4.86E+01	U	-		1
Praseodymium	7440-10-0	No	No	-		-		-		-		1
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	No	No	-		-		-		-		1
Prochloraz	67747-09-5	No	No	1.50E-01	U	-		9.00E-03	U	-		1
Profluralin	26399-36-0	No	Yes	-		-		6.00E-03	U	-		1
Promethium	7440-12-2	No	No	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Phthalic Acid, P-	100-21-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+06
Phthalic Acid, m-	121-91-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Phthalic Acid, o-	88-99-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Phthalic Anhydride	85-44-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+06
Picloram	1918-02-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+05
Picoline, 2-	109-06-8	-	1	1.05E+05	7.90E+05	3.23E+09	-	-	-	-	-
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+02
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	0.1	1	-	-	3.23E+09	-	-	-	-	-
Piperidine	110-89-4	-	1	1.12E+05	1.96E+05	3.23E+09	-	-	-	-	-
Pirimiphos, Methyl	29232-93-7	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Polybrominated Biphenyls	59536-65-1	0.1	1	-	-	3.23E+09	6.88E+00	5.45E+01	9.61E+05	6.11E+00	2.06E+01
Polychlorinated Biphenyls (high risk)	1336-36-3	0.14	1	1.08E+06	-	3.23E+09	1.03E+02	5.84E+02	4.85E+03	8.62E+01	-
Polycyclic aromatic hydrocarbons (PAH), Total	NA	0.13	1	-	-	3.23E+09	-	-	-	-	-
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	0.13	1	-	-	3.23E+09	-	-	-	-	-
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	0.13	1	-	-	3.23E+09	-	-	-	-	-
Polycyclic chlorinated hydrocarbons (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	0.1	1	-	-	3.23E+09	-	-	-	-	-
Polyphosphoric acid	8017-16-1	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Potassium	7440-09-7	-	1	-	-	3.23E+09	-	-	-	-	-
Potassium Cyanide	151-50-8	-	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Potassium Perchlorate	7778-74-7	-	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Potassium Perfluorobutane Sulfonate	29420-49-3	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Potassium Silver Cyanide	506-61-6	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Potassium chlorate	3811-04-9	-	1	-	-	3.23E+09	-	-	-	-	-
Potassium tripolyphosphate	13845-36-8	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Praseodymium	7440-10-0	-	1	-	-	3.23E+09	-	-	-	-	-
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	-	1	-	-	3.23E+09	-	-	-	-	-
Prochloraz	67747-09-5	0.1	1	-	-	3.23E+09	1.38E+03	1.09E+04	-	1.22E+03	2.65E+04
Profluralin	26399-36-0	-	1	5.78E+05	-	3.23E+09	-	-	-	-	1.77E+04
Promethium	7440-12-2	-	1	-	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Phthalic Acid, P-	100-21-0	2.34E+07	-	2.62E+06	2.62E+06 max
Phthalic Acid, m-	121-91-5	-	-	-	
Phthalic Acid, o-	88-99-3	-	-	-	
Phthalic Anhydride	85-44-9	4.67E+07	2.36E+09	5.23E+06	5.23E+06 max
Picloram	1918-02-1	1.64E+06	-	1.83E+05	1.83E+05 max
Picoline, 2-	109-06-8	-	-	-	
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	2.34E+03	-	2.62E+02	2.62E+02 nc
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	-	-	-	
Piperidine	110-89-4	-	-	-	
Pirimiphos, Methyl	29232-93-7	2.34E+05	-	2.62E+04	2.62E+04 nc
Polybrominated Biphenyls	59536-65-1	1.64E+02	-	1.83E+01	6.11E+00 ca**
Polychlorinated Biphenyls (high risk)	1336-36-3	-	-	-	8.62E+01 ca
Polycyclic aromatic hydrocarbons (PAH), Total	NA	-	-	-	
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	-	-	-	
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	-	-	-	
Polycyclic chlorinated hydrocarbons (total)	NA	-	-	-	
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	-	7.08E+07	7.08E+07	7.08E+07 max
Polyphosphoric acid	8017-16-1	-	-	1.43E+08	1.43E+08 max
Potassium	7440-09-7	-	-	-	
Potassium Cyanide	151-50-8	-	-	5.90E+03	5.90E+03 nc
Potassium Perchlorate	7778-74-7	-	-	2.06E+03	2.06E+03 nc
Potassium Perfluorobutane Sulfonate	29420-49-3	4.67E+05	-	5.24E+04	5.24E+04 nc
Potassium Silver Cyanide	506-61-6	-	-	1.47E+04	1.47E+04 nc
Potassium chlorate	3811-04-9	-	-	-	
Potassium tripolyphosphate	13845-36-8	-	-	1.43E+08	1.43E+08 max
Praseodymium	7440-10-0	-	-	-	
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	-	-	-	
Prochloraz	67747-09-5	2.10E+05	-	2.36E+04	1.22E+03 ca*
Profluralin	26399-36-0	-	-	1.77E+04	1.77E+04 nc
Promethium	7440-12-2	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Prometon	1610-18-0	No	No	-		-		1.50E-02	U	-		1
Prometryn	7287-19-6	No	No	-		-		4.00E-03	U	-		1
Propachlor	1918-16-7	No	No	-		-		1.30E-02	U	-		1
Propanil	709-98-8	No	No	-		-		5.00E-03	U	-		1
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	No	No	-		-		-		-		1
Propargite	2312-35-8	No	No	-		-		2.00E-02	U	-		1
Propargyl Alcohol	107-19-7	No	Yes	-		-		2.00E-03	U	-		1
Propazine	139-40-2	No	No	-		-		2.00E-02	U	-		1
Propham	122-42-9	No	No	-		-		2.00E-02	U	-		1
Propiconazole	60207-90-1	No	No	-		-		1.30E-02	U	-		1
Propionaldehyde	123-38-6	No	Yes	-		-		-		8.00E-03	U	1
Propionitrile	107-12-0	No	Yes	-		-		-		-		1
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	No	Yes	-		-		-		-		1
Propyl Alcohol, n-	71-23-8	No	Yes	-		-		-		-		1
Propyl benzene	103-65-1	No	Yes	-		-		1.00E-01	U	1.00E+00	U	1
Propylene	115-07-1	No	Yes	-		-		-		3.00E+00	U	1
Propylene Glycol	57-55-6	No	No	-		-		2.00E+01	U	-		1
Propylene Glycol Dinitrate	6423-43-4	No	No	-		-		-		2.72E-04	U	1
Propylene Glycol Monoethyl Ether	1569-02-4	No	Yes	-		-		7.00E-01	U	-		1
Propylene Glycol Monomethyl Ether	107-98-2	No	Yes	-		-		7.00E-01	U	2.00E+00	U	1
Propylene Oxide	75-56-9	No	Yes	2.40E-01	U	3.70E-06	U	-		3.00E-02	U	1
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	No	No	-		-		-		-		1
Pursuit	81335-77-5	No	No	-		-		2.50E-01	U	-		1
Pydrin	51630-58-1	No	No	-		-		2.50E-02	U	-		1
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	No	No	-		-		-		-		1
Pyrene	129-00-0	No	Yes	-		-		3.00E-02	U	-		1
Pyridine	110-86-1	No	Yes	-		-		1.00E-03	U	-		1
Quinalphos	13593-03-8	No	No	-		-		5.00E-04	U	-		1
Quinoline	91-22-5	No	No	3.00E+00	U	-		-		-		1
Refractory Ceramic Fibers	NA	No	No	-		-		-		3.00E-02	U	1
Resmethrin	10453-86-8	No	No	-		-		3.00E-02	U	-		1
Resorcinol	108-46-3	No	No	-		-		-		-		1
Ronnel	299-84-3	No	Yes	-		-		5.00E-02	U	-		1
Rotenone	83-79-4	No	No	-		-		4.00E-03	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Prometon	1610-18-0	0.1	1	-	-	3.23E+09	-	-	-	-	4.42E+04
Prometryn	7287-19-6	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+04
Propachlor	1918-16-7	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Propanil	709-98-8	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Propargite	2312-35-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Propargyl Alcohol	107-19-7	-	1	8.66E+04	1.11E+05	3.23E+09	-	-	-	-	5.90E+03
Propazine	139-40-2	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Propham	122-42-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Propiconazole	60207-90-1	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Propionaldehyde	123-38-6	-	1	1.24E+04	3.26E+04	3.23E+09	-	-	-	-	-
Propionitrile	107-12-0	-	1	2.07E+04	1.56E+04	3.23E+09	-	-	-	-	-
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	-	1	2.62E+05	1.60E+05	3.23E+09	-	-	-	-	-
Propyl Alcohol, n-	71-23-8	-	1	4.01E+04	1.11E+05	3.23E+09	-	-	-	-	-
Propyl benzene	103-65-1	-	1	9.64E+03	2.64E+02	3.23E+09	-	-	-	-	2.95E+05
Propylene	115-07-1	-	1	9.70E+02	3.49E+02	3.23E+09	-	-	-	-	-
Propylene Glycol	57-55-6	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+07
Propylene Glycol Dinitrate	6423-43-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Propylene Glycol Monoethyl Ether	1569-02-4	-	1	2.14E+05	8.52E+04	3.23E+09	-	-	-	-	2.06E+06
Propylene Glycol Monomethyl Ether	107-98-2	-	1	1.08E+05	1.06E+05	3.23E+09	-	-	-	-	2.06E+06
Propylene Oxide	75-56-9	-	1	1.42E+04	7.77E+04	3.23E+09	8.60E+02	-	9.77E+03	7.91E+02	-
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pursuit	81335-77-5	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+05
Pydrin	51630-58-1	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Pyrene	129-00-0	0.13	1	3.28E+06	-	3.23E+09	-	-	-	-	8.85E+04
Pyridine	110-86-1	-	1	7.64E+04	5.30E+05	3.23E+09	-	-	-	-	2.95E+03
Quinalphos	13593-03-8	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+03
Quinoline	91-22-5	0.1	1	-	-	3.23E+09	6.88E+01	5.45E+02	-	6.11E+01	-
Refractory Ceramic Fibers	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Resmethrin	10453-86-8	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Resorcinol	108-46-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Ronnel	299-84-3	-	1	6.40E+05	-	3.23E+09	-	-	-	-	1.47E+05
Rotenone	83-79-4	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+04

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Prometon	1610-18-0	3.51E+05	-	3.93E+04	3.93E+04 nc
Prometryn	7287-19-6	9.35E+04	-	1.05E+04	1.05E+04 nc
Propachlor	1918-16-7	3.04E+05	-	3.40E+04	3.40E+04 nc
Propanil	709-98-8	1.17E+05	-	1.31E+04	1.31E+04 nc
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	-	-	-	
Propargite	2312-35-8	4.67E+05	-	5.24E+04	5.24E+04 nc
Propargyl Alcohol	107-19-7	-	-	5.90E+03	5.90E+03 nc
Propazine	139-40-2	4.67E+05	-	5.24E+04	5.24E+04 nc
Propham	122-42-9	4.67E+05	-	5.24E+04	5.24E+04 nc
Propiconazole	60207-90-1	3.04E+05	-	3.40E+04	3.40E+04 nc
Propionaldehyde	123-38-6	-	3.61E+03	3.61E+03	3.61E+03 nc
Propionitrile	107-12-0	-	-	-	
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	-	-	-	
Propyl Alcohol, n-	71-23-8	-	-	-	
Propyl benzene	103-65-1	-	3.52E+05	1.60E+05	1.60E+05 sat
Propylene	115-07-1	-	1.06E+05	1.06E+05	1.06E+05 sat
Propylene Glycol	57-55-6	4.67E+08	-	5.24E+07	5.24E+07 max
Propylene Glycol Dinitrate	6423-43-4	-	3.21E+07	3.21E+07	3.21E+07 max
Propylene Glycol Monoethyl Ether	1569-02-4	-	-	2.06E+06	2.06E+06 sat
Propylene Glycol Monomethyl Ether	107-98-2	-	7.89E+06	1.64E+06	1.64E+06 sat
Propylene Oxide	75-56-9	-	1.55E+04	1.55E+04	7.91E+02 ca*
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	-	-	-	
Pursuit	81335-77-5	5.84E+06	-	6.55E+05	6.55E+05 max
Pydrin	51630-58-1	5.84E+05	-	6.55E+04	6.55E+04 nc
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	-	-	-	
Pyrene	129-00-0	5.39E+05	-	7.60E+04	7.60E+04 nc
Pyridine	110-86-1	-	-	2.95E+03	2.95E+03 nc
Quinalphos	13593-03-8	1.17E+04	-	1.31E+03	1.31E+03 nc
Quinoline	91-22-5	-	-	-	6.11E+01 ca
Refractory Ceramic Fibers	NA	-	3.54E+09	3.54E+09	3.54E+09 max
Resmethrin	10453-86-8	7.01E+05	-	7.86E+04	7.86E+04 nc
Resorcinol	108-46-3	-	-	-	
Ronnel	299-84-3	-	-	1.47E+05	1.47E+05 max
Rotenone	83-79-4	9.35E+04	-	1.05E+04	1.05E+04 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Safrole	94-59-7	Yes	No	2.20E-01	U	6.30E-05	U	-		-		1
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	No	No	-		-		-		-		1
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	No	No	-		-		-		-		1
Savey	78587-05-0	No	No	-		-		2.50E-02	U	-		1
Scandium	7440-20-2	No	No	-		-		-		-		1
Selenious Acid	7783-00-8	No	No	-		-		5.00E-03	U	-		1
Selenite	14124-67-5	No	No	-		-		-		-		1
Selenium	7782-49-2	No	No	-		-		5.00E-03	U	2.00E-02	U	1
Selenium Sulfide	7446-34-6	No	No	-		-		5.00E-03	U	2.00E-02	U	1
Selenourea	630-10-4	No	No	-		-		-		-		1
Sethoxydim	74051-80-2	No	No	-		-		9.00E-02	U	-		1
Silica (crystalline, respirable)	7631-86-9	No	No	-		-		-		3.00E-03	U	1
Silicon	7440-21-3	No	No	-		-		-		-		1
Silver	7440-22-4	No	No	-		-		5.00E-03	U	-		0.04
Silver Cyanide	506-64-9	No	No	-		-		1.00E-01	U	-		0.04
Simazine	122-34-9	No	No	1.20E-01	U	-		5.00E-03	U	-		1
Sodium	7440-23-5	No	No	-		-		-		-		1
Sodium Acifluorfen	62476-59-9	No	No	-		-		1.30E-02	U	-		1
Sodium Azide	26628-22-8	No	No	-		-		4.00E-03	U	-		1
Sodium Chlorate	7775-09-9	No	No	-		-		-		-		1
Sodium Cyanide	143-33-9	No	No	-		-		1.00E-03	U	-		1
Sodium Dichromate	10588-01-9	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Sodium Diethyldithiocarbamate	148-18-5	No	No	2.70E-01	U	-		3.00E-02	U	-		1
Sodium Fluoride	7681-49-4	No	No	-		-		5.00E-02	U	1.30E-02	U	1
Sodium Fluoroacetate	62-74-8	No	No	-		-		2.00E-05	U	-		1
Sodium Hydroxide	1310-73-2	No	No	-		-		-		-		1
Sodium Metavanadate	13718-26-8	No	No	-		-		1.00E-03	U	-		1
Sodium Perchlorate	7601-89-0	No	No	-		-		7.00E-04	U	-		1
Sodium acid pyrophosphate	7758-16-9	No	No	-		-		4.86E+01	U	-		1
Sodium aluminum phosphate (acidic)	7785-88-8	No	No	-		-		4.86E+01	U	-		1
Sodium aluminum phosphate (anhydrous)	10279-59-1	No	No	-		-		4.86E+01	U	-		1
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	No	No	-		-		4.86E+01	U	-		1
Sodium hexametaphosphate	10124-56-8	No	No	-		-		4.86E+01	U	-		1
Sodium polyphosphate	68915-31-1	No	No	-		-		4.86E+01	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Safrole	94-59-7	0.1	1	-	-	3.23E+09	9.38E+02	7.44E+03	1.31E+08	8.33E+02	-
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	-	1	-	-	3.23E+09	-	-	-	-	-
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	-	1	-	-	3.23E+09	-	-	-	-	-
Savey	78587-05-0	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Scandium	7440-20-2	-	1	-	-	3.23E+09	-	-	-	-	-
Selenious Acid	7783-00-8	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Selenite	14124-67-5	-	1	-	-	3.23E+09	-	-	-	-	-
Selenium	7782-49-2	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Selenium Sulfide	7446-34-6	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Selenourea	630-10-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Sethoxydim	74051-80-2	0.1	1	-	-	3.23E+09	-	-	-	-	2.65E+05
Silica (crystalline, respirable)	7631-86-9	-	1	-	-	3.23E+09	-	-	-	-	-
Silicon	7440-21-3	-	1	-	-	3.23E+09	-	-	-	-	-
Silver	7440-22-4	-	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Silver Cyanide	506-64-9	-	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Simazine	122-34-9	0.1	1	-	-	3.23E+09	1.72E+03	1.36E+04	-	1.53E+03	1.47E+04
Sodium	7440-23-5	-	1	-	-	3.23E+09	-	-	-	-	-
Sodium Acifluorfen	62476-59-9	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Sodium Azide	26628-22-8	-	1	-	-	3.23E+09	-	-	-	-	1.18E+04
Sodium Chlorate	7775-09-9	-	1	-	-	3.23E+09	-	-	-	-	-
Sodium Cyanide	143-33-9	-	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Sodium Dichromate	10588-01-9	-	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04
Sodium Diethyldithiocarbamate	148-18-5	0.1	1	-	-	3.23E+09	7.65E+02	6.06E+03	-	6.79E+02	8.85E+04
Sodium Fluoride	7681-49-4	-	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Sodium Fluoroacetate	62-74-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+01
Sodium Hydroxide	1310-73-2	-	1	-	-	3.23E+09	-	-	-	-	-
Sodium Metavanadate	13718-26-8	-	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Sodium Perchlorate	7601-89-0	-	1	-	-	3.23E+09	-	-	-	-	2.06E+03
Sodium acid pyrophosphate	7758-16-9	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium aluminum phosphate (acidic)	7785-88-8	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium aluminum phosphate (anhydrous)	10279-59-1	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium hexametaphosphate	10124-56-8	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium polyphosphate	68915-31-1	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Safrole	94-59-7	-	-	-	8.33E+02 ca
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	-	-	-	
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	-	-	-	
Savey	78587-05-0	5.84E+05	-	6.55E+04	6.55E+04 nc
Scandium	7440-20-2	-	-	-	
Selenious Acid	7783-00-8	-	-	1.47E+04	1.47E+04 nc
Selenite	14124-67-5	-	-	-	
Selenium	7782-49-2	-	2.36E+09	1.47E+04	1.47E+04 nc
Selenium Sulfide	7446-34-6	-	2.36E+09	1.47E+04	1.47E+04 nc
Selenourea	630-10-4	-	-	-	
Sethoxydim	74051-80-2	2.10E+06	-	2.36E+05	2.36E+05 max
Silica (crystalline, respirable)	7631-86-9	-	3.54E+08	3.54E+08	3.54E+08 max
Silicon	7440-21-3	-	-	-	
Silver	7440-22-4	-	-	1.47E+04	1.47E+04 nc
Silver Cyanide	506-64-9	-	-	2.95E+05	2.95E+05 max
Simazine	122-34-9	1.17E+05	-	1.31E+04	1.53E+03 ca**
Sodium	7440-23-5	-	-	-	
Sodium Acifluorfen	62476-59-9	3.04E+05	-	3.40E+04	3.40E+04 nc
Sodium Azide	26628-22-8	-	-	1.18E+04	1.18E+04 nc
Sodium Chlorate	7775-09-9	-	-	-	
Sodium Cyanide	143-33-9	-	-	2.95E+03	2.95E+03 nc
Sodium Dichromate	10588-01-9	-	2.36E+07	5.88E+04	4.10E+02 ca
Sodium Diethyldithiocarbamate	148-18-5	7.01E+05	-	7.86E+04	6.79E+02 ca
Sodium Fluoride	7681-49-4	-	1.53E+09	1.47E+05	1.47E+05 max
Sodium Fluoroacetate	62-74-8	4.67E+02	-	5.24E+01	5.24E+01 nc
Sodium Hydroxide	1310-73-2	-	-	-	
Sodium Metavanadate	13718-26-8	-	-	2.95E+03	2.95E+03 nc
Sodium Perchlorate	7601-89-0	-	-	2.06E+03	2.06E+03 nc
Sodium acid pyrophosphate	7758-16-9	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (acidic)	7785-88-8	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (anhydrous)	10279-59-1	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	-	-	1.43E+08	1.43E+08 max
Sodium hexametaphosphate	10124-56-8	-	-	1.43E+08	1.43E+08 max
Sodium polyphosphate	68915-31-1	-	-	1.43E+08	1.43E+08 max

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Sodium trimetaphosphate	7785-84-4	No	No	-		-		4.86E+01	U	-		1
Sodium tripolyphosphate	7758-29-4	No	No	-		-		4.86E+01	U	-		1
Stearyl Acetate	822-23-1	No	Yes	-		-		-		-		1
Stirofos (Tetrachlorovinphos)	961-11-5	No	No	2.40E-02	U	-		3.00E-02	U	-		1
Strontium Chromate	7789-06-2	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Strontium, Stable	7440-24-6	No	No	-		-		6.00E-01	U	-		1
Strychnine	57-24-9	No	No	-		-		3.00E-04	U	-		1
Styrene	100-42-5	No	Yes	-		-		2.00E-01	U	1.00E+00	U	1
Styrene-Acrylonitrile (SAN) Trimer	NA	No	No	-		-		3.00E-03	U	-		1
Sulfate	14808-79-8	No	No	-		-		-		-		1
Sulfide	18496-25-8	No	No	-		-		-		-		1
Sulfolane	126-33-0	No	No	-		-		1.00E-03	U	2.00E-03	U	1
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	No	No	-		-		8.00E-04	U	-		1
Sulfur	7704-34-9	No	No	-		-		-		-		1
Sulfur Dioxide	7446-09-5	No	Yes	-		-		-		-		1
Sulfur Mustard	505-60-2	No	Yes	-		-		-		-		1
Sulfur Trioxide	7446-11-9	No	Yes	-		-		-		1.00E-03	U	1
Sulfuric Acid	7664-93-9	No	No	-		-		-		1.00E-03	U	1
Systhane	88671-89-0	No	No	-		-		2.50E-02	U	-		1
TCDD, 2,3,7,8-	1746-01-6	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
TCDF, 2,3,7,8-	51207-31-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
TCMTB	21564-17-0	No	No	-		-		3.00E-02	U	-		1
Tebuthiuron	34014-18-1	No	No	-		-		7.00E-02	U	-		1
Technetium	7440-26-8	No	No	-		-		-		-		1
Tellurium	13494-80-9	No	No	-		-		-		-		1
Temephos	3383-96-8	No	No	-		-		2.00E-02	U	-		1
Terbacil	5902-51-2	No	No	-		-		1.30E-02	U	-		1
Terbufos	13071-79-9	No	Yes	-		-		2.50E-05	U	-		1
Terbutryn	886-50-0	No	No	-		-		1.00E-03	U	-		1
Tetrabutyl Lead	1920-90-7	No	Yes	-		-		-		-		1
Tetrachloroaniline, 2,3,5,6-	3481-20-7	No	No	-		-		-		-		1
Tetrachlorobenzene, 1,2,3,4-	634-66-2	No	Yes	-		-		-		-		1
Tetrachlorobenzene, 1,2,4,5-	95-94-3	No	Yes	-		-		3.00E-04	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Sodium trimetaphosphate	7785-84-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Sodium tripolyphosphate	7758-29-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Stearyl Acetate	822-23-1	-	1	8.92E+04	-	3.23E+09	-	-	-	-	-
Stirofos (Tetrachlorovinphos)	961-11-5	0.1	1	-	-	3.23E+09	8.60E+03	6.82E+04	-	7.64E+03	8.85E+04
Strontium Chromate	7789-06-2	-	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04
Strontium, Stable	7440-24-6	-	1	-	-	3.23E+09	-	-	-	-	1.77E+06
Strychnine	57-24-9	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Styrene	100-42-5	-	1	1.29E+04	8.67E+02	3.23E+09	-	-	-	-	5.90E+05
Styrene-Acrylonitrile (SAN) Trimer	NA	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Sulfate	14808-79-8	-	1	-	-	3.23E+09	-	-	-	-	-
Sulfide	18496-25-8	-	1	-	-	3.23E+09	-	-	-	-	-
Sulfolane	126-33-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+03
Sulfur	7704-34-9	-	1	-	-	3.23E+09	-	-	-	-	-
Sulfur Dioxide	7446-09-5	-	1	-	-	3.23E+09	-	-	-	-	-
Sulfur Mustard	505-60-2	-	1	1.21E+05	1.08E+03	3.23E+09	-	-	-	-	-
Sulfur Trioxide	7446-11-9	-	1	-	-	3.23E+09	-	-	-	-	-
Sulfuric Acid	7664-93-9	-	1	-	-	3.23E+09	-	-	-	-	-
Systhane	88671-89-0	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
TCDD, 2,3,7,8-	1746-01-6	0.03	1	2.71E+06	-	3.23E+09	1.59E-03	4.20E-02	1.82E-01	1.52E-03	2.06E-03
TCDF, 2,3,7,8-	51207-31-9	0.03	1	4.72E+06	-	3.23E+09	1.59E-02	4.20E-01	3.17E+00	1.52E-02	2.06E-02
TCMTB	21564-17-0	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Tebuthiuron	34014-18-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.06E+05
Technetium	7440-26-8	-	1	-	-	3.23E+09	-	-	-	-	-
Tellurium	13494-80-9	-	1	-	-	3.23E+09	-	-	-	-	-
Temephos	3383-96-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Terbacil	5902-51-2	0.1	1	-	-	3.23E+09	-	-	-	-	3.83E+04
Terbufos	13071-79-9	-	1	3.64E+05	3.09E+01	3.23E+09	-	-	-	-	7.37E+01
Terbutryn	886-50-0	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+03
Tetrabutyl Lead	1920-90-7	-	1	6.41E+03	-	3.23E+09	-	-	-	-	-
Tetrachloroaniline, 2,3,5,6-	3481-20-7	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tetrachlorobenzene, 1,2,3,4-	634-66-2	-	1	8.26E+04	-	3.23E+09	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	95-94-3	-	1	6.99E+04	-	3.23E+09	-	-	-	-	8.85E+02

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Sodium trimetaphosphate	7785-84-4	-	-	1.43E+08	1.43E+08 max
Sodium tripolyphosphate	7758-29-4	-	-	1.43E+08	1.43E+08 max
Stearyl Acetate	822-23-1	-	-	-	
Stirofos (Tetrachlorovinphos)	961-11-5	7.01E+05	-	7.86E+04	7.64E+03 ca*
Strontium Chromate	7789-06-2	-	2.36E+07	5.88E+04	4.10E+02 ca
Strontium, Stable	7440-24-6	-	-	1.77E+06	1.77E+06 max
Strychnine	57-24-9	7.01E+03	-	7.86E+02	7.86E+02 nc
Styrene	100-42-5	-	4.71E+05	2.62E+05	2.62E+05 sat
Styrene-Acrylonitrile (SAN) Trimer	NA	7.01E+04	-	7.86E+03	7.86E+03 nc
Sulfate	14808-79-8	-	-	-	
Sulfide	18496-25-8	-	-	-	
Sulfolane	126-33-0	2.34E+04	2.36E+08	2.62E+03	2.62E+03 nc
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	1.87E+04	-	2.10E+03	2.10E+03 nc
Sulfur	7704-34-9	-	-	-	
Sulfur Dioxide	7446-09-5	-	-	-	
Sulfur Mustard	505-60-2	-	-	-	
Sulfur Trioxide	7446-11-9	-	1.18E+08	1.18E+08	1.18E+08 max
Sulfuric Acid	7664-93-9	-	1.18E+08	1.18E+08	1.18E+08 max
Systhane	88671-89-0	5.84E+05	-	6.55E+04	6.55E+04 nc
TCDD, 2,3,7,8-	1746-01-6	5.45E-02	3.95E+00	1.99E-03	1.52E-03 ca**
TCDF, 2,3,7,8-	51207-31-9	5.45E-01	6.88E+01	1.99E-02	1.52E-02 ca**
TCMTB	21564-17-0	7.01E+05	-	7.86E+04	7.86E+04 nc
Tebuthiuron	34014-18-1	1.64E+06	-	1.83E+05	1.83E+05 max
Technetium	7440-26-8	-	-	-	
Tellurium	13494-80-9	-	-	-	
Temephos	3383-96-8	4.67E+05	-	5.24E+04	5.24E+04 nc
Terbacil	5902-51-2	3.04E+05	-	3.40E+04	3.40E+04 nc
Terbufos	13071-79-9	-	-	7.37E+01	7.37E+01 sat
Terbutryn	886-50-0	2.34E+04	-	2.62E+03	2.62E+03 nc
Tetrabutyl Lead	1920-90-7	-	-	-	
Tetrachloroaniline, 2,3,5,6-	3481-20-7	-	-	-	
Tetrachlorobenzene, 1,2,3,4-	634-66-2	-	-	-	
Tetrachlorobenzene, 1,2,4,5-	95-94-3	-	-	8.85E+02	8.85E+02 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	No	No	1.30E+01	U	3.80E-03	U	7.00E-06	U	4.00E-04	U	1
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	No	Yes	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
Tetrachloroethane, 1,1,1,2-	630-20-6	No	Yes	2.60E-02	U	7.40E-06	U	3.00E-02	U	-		1
Tetrachloroethane, 1,1,2,2-	79-34-5	No	Yes	2.00E-01	U	5.80E-05	U	2.00E-02	U	-		1
Tetrachloroethylene	127-18-4	No	Yes	2.10E-03	U	2.60E-07	U	6.00E-03	U	4.00E-02	U	1
Tetrachlorophenol, 2,3,4,5-	4901-51-3	No	No	-		-		-		-		1
Tetrachlorophenol, 2,3,4,6-	58-90-2	No	No	-		-		3.00E-02	U	-		1
Tetrachlorophenols (total)	25167-83-3	No	No	-		-		-		-		1
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	No	No	-		-		-		-		1
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	No	Yes	2.00E+01	U	-		-		-		1
Tetraethyl Dithiopyrophosphate	3689-24-5	No	No	-		-		5.00E-04	U	-		1
Tetraethyl Lead	78-00-2	No	Yes	-		-		1.00E-07	U	-		1
Tetrafluoroethane, 1,1,1,2-	811-97-2	No	Yes	-		-		-		8.00E+01	U	1
Tetrahydrofuran	109-99-9	No	Yes	-		-		9.00E-01	U	2.00E+00	U	1
Tetrahydrothiophene	110-01-0	No	Yes	-		-		-		-		1
Tetramethyl Lead	75-74-1	No	Yes	-		-		-		-		1
Tetramethylcyclohexane	30501-43-0	No	Yes	-		-		-		-		1
Tetrapotassium phosphate	7320-34-5	No	No	-		-		4.86E+01	U	-		1
Tetrapropyl Lead	3440-75-3	No	Yes	-		-		-		-		1
Tetrasodium pyrophosphate	7722-88-5	No	No	-		-		4.86E+01	U	-		1
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	No	No	-		-		2.00E-03	U	-		1
Thallic Oxide	1314-32-5	No	No	-		-		-		-		1
Thallium (I) Nitrate	10102-45-1	No	No	-		-		7.00E-06	U	-		1
Thallium (Soluble Salts)	7440-28-0	No	No	-		-		1.00E-05	U	-		1
Thallium Acetate	563-68-8	No	No	-		-		6.00E-06	U	-		1
Thallium Carbonate	6533-73-9	No	No	-		-		2.00E-05	U	-		1
Thallium Chloride	7791-12-0	No	No	-		-		6.00E-06	U	-		1
Thallium Selenite	12039-52-0	No	No	-		-		-		-		1
Thallium Sulfate	7446-18-6	No	No	-		-		2.00E-05	U	-		1
Thiobencarb	28249-77-6	No	No	-		-		1.00E-02	U	-		1
Thiocyanates	NA	No	No	-		-		2.00E-04	U	-		1
Thiocyanic Acid	463-56-9	No	Yes	-		-		2.00E-04	U	-		1
Thiodiglycol	111-48-8	No	No	-		-		7.00E-02	U	-		1
Thiofanox	39196-18-4	No	No	-		-		3.00E-04	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	0.14	1	-	-	3.23E+09	1.59E+01	8.99E+01	2.17E+06	1.35E+01	2.06E+01
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	0.14	1	1.00E+06	-	3.23E+09	5.29E+00	3.00E+01	2.24E+02	4.41E+00	6.87E+00
Tetrachloroethane, 1,1,1,2-	630-20-6	-	1	7.83E+03	6.80E+02	3.23E+09	7.94E+03	-	2.70E+03	2.02E+03	8.85E+04
Tetrachloroethane, 1,1,2,2-	79-34-5	-	1	2.08E+04	1.90E+03	3.23E+09	1.03E+03	-	9.18E+02	4.86E+02	5.90E+04
Tetrachloroethylene	127-18-4	-	1	3.24E+03	1.66E+02	3.23E+09	9.83E+04	-	3.18E+04	2.40E+04	1.77E+04
Tetrachlorophenol, 2,3,4,5-	4901-51-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tetrachlorophenol, 2,3,4,6-	58-90-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Tetrachlorophenols (total)	25167-83-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	-	1	1.46E+05	-	3.23E+09	1.03E+01	-	-	1.03E+01	-
Tetraethyl Dithiopyrophosphate	3689-24-5	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+03
Tetraethyl Lead	78-00-2	-	1	2.64E+03	2.43E+00	3.23E+09	-	-	-	-	2.95E-01
Tetrafluoroethane, 1,1,1,2-	811-97-2	-	1	1.68E+03	1.09E+03	3.23E+09	-	-	-	-	-
Tetrahydrofuran	109-99-9	0.03	1	1.69E+04	1.65E+05	3.23E+09	-	-	-	-	2.65E+06
Tetrahydrothiophene	110-01-0	-	1	1.81E+04	3.44E+03	3.23E+09	-	-	-	-	-
Tetramethyl Lead	75-74-1	-	1	1.89E+03	3.64E+01	3.23E+09	-	-	-	-	-
Tetramethylcyclohexane	30501-43-0	-	1	-	-	3.23E+09	-	-	-	-	-
Tetrapotassium phosphate	7320-34-5	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Tetrapropyl Lead	3440-75-3	-	1	3.65E+03	-	3.23E+09	-	-	-	-	-
Tetrasodium pyrophosphate	7722-88-5	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	0.00065	1	-	-	3.23E+09	-	-	-	-	5.90E+03
Thallic Oxide	1314-32-5	-	1	-	-	3.23E+09	-	-	-	-	-
Thallium (I) Nitrate	10102-45-1	-	1	-	-	3.23E+09	-	-	-	-	2.06E+01
Thallium (Soluble Salts)	7440-28-0	-	1	-	-	3.23E+09	-	-	-	-	2.95E+01
Thallium Acetate	563-68-8	0.1	1	-	-	3.23E+09	-	-	-	-	1.77E+01
Thallium Carbonate	6533-73-9	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+01
Thallium Chloride	7791-12-0	-	1	-	-	3.23E+09	-	-	-	-	1.77E+01
Thallium Selenite	12039-52-0	-	1	-	-	3.23E+09	-	-	-	-	-
Thallium Sulfate	7446-18-6	-	1	-	-	3.23E+09	-	-	-	-	5.90E+01
Thiobencarb	28249-77-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Thiocyanates	NA	-	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Thiocyanic Acid	463-56-9	-	1	-	-	3.23E+09	-	-	-	-	5.90E+02
Thiodiglycol	111-48-8	0.0075	1	-	-	3.23E+09	-	-	-	-	2.06E+05
Thiofanox	39196-18-4	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	1.17E+02	4.72E+07	1.75E+01	1.35E+01 ca**
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	3.89E+01	4.86E+03	5.83E+00	4.41E+00 ca**
Tetrachloroethane, 1,1,1,2-	630-20-6	-	-	8.85E+04	2.02E+03 sat
Tetrachloroethane, 1,1,2,2-	79-34-5	-	-	5.90E+04	4.86E+02 ca
Tetrachloroethylene	127-18-4	-	4.73E+03	3.73E+03	3.73E+03 sat
Tetrachlorophenol, 2,3,4,5-	4901-51-3	-	-	-	
Tetrachlorophenol, 2,3,4,6-	58-90-2	7.01E+05	-	7.86E+04	7.86E+04 nc
Tetrachlorophenols (total)	25167-83-3	-	-	-	
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	-	-	-	
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	-	-	-	1.03E+01 ca
Tetraethyl Dithiopyrophosphate	3689-24-5	1.17E+04	-	1.31E+03	1.31E+03 nc
Tetraethyl Lead	78-00-2	-	-	2.95E-01	2.95E-01 nc
Tetrafluoroethane, 1,1,1,2-	811-97-2	-	4.92E+06	4.92E+06	4.92E+06 sat
Tetrahydrofuran	109-99-9	7.01E+07	1.23E+06	8.31E+05	8.31E+05 sat
Tetrahydrothiophene	110-01-0	-	-	-	
Tetramethyl Lead	75-74-1	-	-	-	
Tetramethylcyclohexane	30501-43-0	-	-	-	
Tetrapotassium phosphate	7320-34-5	-	-	1.43E+08	1.43E+08 max
Tetrapropyl Lead	3440-75-3	-	-	-	
Tetrasodium pyrophosphate	7722-88-5	-	-	1.43E+08	1.43E+08 max
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	7.19E+06	-	5.89E+03	5.89E+03 nc
Thallic Oxide	1314-32-5	-	-	-	
Thallium (I) Nitrate	10102-45-1	-	-	2.06E+01	2.06E+01 nc
Thallium (Soluble Salts)	7440-28-0	-	-	2.95E+01	2.95E+01 nc
Thallium Acetate	563-68-8	1.40E+02	-	1.57E+01	1.57E+01 nc
Thallium Carbonate	6533-73-9	4.67E+02	-	5.24E+01	5.24E+01 nc
Thallium Chloride	7791-12-0	-	-	1.77E+01	1.77E+01 nc
Thallium Selenite	12039-52-0	-	-	-	
Thallium Sulfate	7446-18-6	-	-	5.90E+01	5.90E+01 nc
Thiobencarb	28249-77-6	2.34E+05	-	2.62E+04	2.62E+04 nc
Thiocyanates	NA	-	-	5.90E+02	5.90E+02 nc
Thiocyanic Acid	463-56-9	-	-	5.90E+02	5.90E+02 nc
Thiodiglycol	111-48-8	2.18E+07	-	2.05E+05	2.05E+05 max
Thiofanox	39196-18-4	7.01E+03	-	7.86E+02	7.86E+02 nc

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Thiophanate, Methyl	23564-05-8	No	No	-		-		8.00E-02	U	-		1
Thiophene	110-02-1	No	Yes	-		-		-		-		1
Thiram	137-26-8	No	No	-		-		5.00E-03	U	-		1
Thorium	NA	No	No	-		-		-		-		1
Thymol	89-83-8	No	No	-		-		-		-		1
Tin	7440-31-5	No	No	-		-		6.00E-01	U	-		1
Titanium	7440-32-6	No	No	-		-		-		-		1
Titanium Tetrachloride	7550-45-0	No	Yes	-		-		-		1.00E-04	U	1
Toluene	108-88-3	No	Yes	-		-		8.00E-02	U	5.00E+00	U	1
Toluene-2,5-diamine	95-70-5	No	No	1.80E-01	U	-		2.00E-04	U	-		1
Toluenediamine, 2,3-	2687-25-4	No	No	-		-		-		-		1
Toluenediamine, 3,4-	496-72-0	No	No	-		-		-		-		1
Toluidine, p-	106-49-0	No	No	3.00E-02	U	-		4.00E-03	U	-		1
Total Petroleum Hydrocarbons (Aliphatic High)	NA	No	Yes	-		-		3.00E+00	U	-		1
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	No	Yes	-		-		-		6.00E-01	U	1
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	No	Yes	-		-		1.00E-02	U	1.00E-01	U	1
Total Petroleum Hydrocarbons (Aromatic High)	NA	No	No	-		-		4.00E-02	U	-		1
Total Petroleum Hydrocarbons (Aromatic Low)	NA	No	Yes	-		-		4.00E-03	U	3.00E-02	U	1
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	No	Yes	-		-		4.00E-03	U	3.00E-03	U	1
Toxaphene	8001-35-2	No	No	1.10E+00	U	3.20E-04	U	-		-		1
Tralomethrin	66841-25-6	No	No	-		-		7.50E-03	U	-		1
Tri-n-butyltin	688-73-3	No	Yes	-		-		3.00E-04	U	-		1
Triacetin	102-76-1	No	No	-		-		8.00E+01	U	-		1
Triallate	2303-17-5	No	Yes	-		-		1.30E-02	U	-		1
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	No	No	-		-		4.86E+01	U	-		1
Triasulfuron	82097-50-5	No	No	-		-		1.00E-02	U	-		1
Triaziquone	68-76-8	No	No	-		-		-		-		1
Tribromobenzene, 1,2,4-	615-54-3	No	Yes	-		-		5.00E-03	U	-		1
Tribromochloromethane	594-15-0	No	Yes	-		-		-		-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Thiophanate, Methyl	23564-05-8	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+05
Thiophene	110-02-1	-	1	5.77E+03	1.80E+03	3.23E+09	-	-	-	-	-
Thiram	137-26-8	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+04
Thorium	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Thymol	89-83-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tin	7440-31-5	-	1	-	-	3.23E+09	-	-	-	-	1.77E+06
Titanium	7440-32-6	-	1	-	-	3.23E+09	-	-	-	-	-
Titanium Tetrachloride	7550-45-0	-	1	-	-	3.23E+09	-	-	-	-	-
Toluene	108-88-3	-	1	5.92E+03	8.18E+02	3.23E+09	-	-	-	-	2.36E+05
Toluene-2,5-diamine	95-70-5	0.1	1	-	-	3.23E+09	1.15E+03	9.09E+03	-	1.02E+03	5.90E+02
Toluenediamine, 2,3-	2687-25-4	0.1	1	-	-	3.23E+09	-	-	-	-	-
Toluenediamine, 3,4-	496-72-0	0.1	1	-	-	3.23E+09	-	-	-	-	-
Toluidine, p-	106-49-0	0.1	1	-	-	3.23E+09	6.88E+03	5.45E+04	-	6.11E+03	1.18E+04
Total Petroleum Hydrocarbons (Aliphatic High)	NA	-	1	1.46E+03	3.41E-01	3.23E+09	-	-	-	-	8.85E+06
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	-	1	1.14E+03	1.41E+02	3.23E+09	-	-	-	-	-
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	-	1	1.44E+03	6.86E+00	3.23E+09	-	-	-	-	2.95E+04
Total Petroleum Hydrocarbons (Aromatic High)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	1.18E+05
Total Petroleum Hydrocarbons (Aromatic Low)	NA	-	1	4.88E+03	1.82E+03	3.23E+09	-	-	-	-	1.18E+04
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	-	1	7.23E+04	-	3.23E+09	-	-	-	-	1.18E+04
Toxaphene	8001-35-2	0.1	1	-	-	3.23E+09	1.88E+02	1.49E+03	2.58E+07	1.67E+02	-
Tralomethrin	66841-25-6	0.1	1	-	-	3.23E+09	-	-	-	-	2.21E+04
Tri-n-butyltin	688-73-3	-	1	4.63E+03	-	3.23E+09	-	-	-	-	8.85E+02
Triacetin	102-76-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+08
Triallate	2303-17-5	-	1	5.00E+05	-	3.23E+09	-	-	-	-	3.83E+04
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Triasulfuron	82097-50-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Triaziquone	68-76-8	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tribromobenzene, 1,2,4-	615-54-3	-	1	6.24E+04	-	3.23E+09	-	-	-	-	1.47E+04
Tribromochloromethane	594-15-0	-	1	5.65E+04	-	3.23E+09	-	-	-	-	-

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Thiophanate, Methyl	23564-05-8	1.87E+06	-	2.10E+05	2.10E+05 max
Thiophene	110-02-1	-	-	-	
Thiram	137-26-8	1.17E+05	-	1.31E+04	1.31E+04 nc
Thorium	NA	-	-	-	
Thymol	89-83-8	-	-	-	
Tin	7440-31-5	-	-	1.77E+06	1.77E+06 max
Titanium	7440-32-6	-	-	-	
Titanium Tetrachloride	7550-45-0	-	1.18E+07	1.18E+07	1.18E+07 max
Toluene	108-88-3	-	1.08E+06	1.94E+05	1.94E+05 sat
Toluene-2,5-diamine	95-70-5	4.67E+03	-	5.24E+02	5.24E+02 nc
Toluenediamine, 2,3-	2687-25-4	-	-	-	
Toluenediamine, 3,4-	496-72-0	-	-	-	
Toluidine, p-	106-49-0	9.35E+04	-	1.05E+04	6.11E+03 ca**
Total Petroleum Hydrocarbons (Aliphatic High)	NA	-	-	8.85E+06	8.85E+06 sat
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	-	2.51E+04	2.51E+04	2.51E+04 sat
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	-	5.26E+03	4.46E+03	4.46E+03 sat
Total Petroleum Hydrocarbons (Aromatic High)	NA	9.35E+05	-	1.05E+05	1.05E+05 max
Total Petroleum Hydrocarbons (Aromatic Low)	NA	-	5.34E+03	3.68E+03	3.68E+03 sat
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	-	7.91E+03	4.74E+03	4.74E+03 nc
Toxaphene	8001-35-2	-	-	-	1.67E+02 ca
Tralomethrin	66841-25-6	1.75E+05	-	1.96E+04	1.96E+04 nc
Tri-n-butyltin	688-73-3	-	-	8.85E+02	8.85E+02 nc
Triacetin	102-76-1	1.87E+09	-	2.10E+08	2.10E+08 max
Triallate	2303-17-5	-	-	3.83E+04	3.83E+04 nc
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	-	-	1.43E+08	1.43E+08 max
Triasulfuron	82097-50-5	2.34E+05	-	2.62E+04	2.62E+04 nc
Triaziquone	68-76-8	-	-	-	
Tribromobenzene, 1,2,4-	615-54-3	-	-	1.47E+04	1.47E+04 nc
Tribromochloromethane	594-15-0	-	-	-	

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Tribromodiphenyl Ether	49690-94-0	No	Yes	-		-		-		-		1
Tribromophenol, 2,4,6-	118-79-6	No	No	-		-		-		-		1
Tributyl Phosphate	126-73-8	No	No	9.00E-03	U	-		1.00E-02	U	-		1
Tributyltin	56573-85-4	No	Yes	-		-		-		-		1
Tributyltin Compounds	NA	No	No	-		-		3.00E-04	U	-		1
Tributyltin Oxide	56-35-9	No	No	-		-		3.00E-04	U	-		1
Tributyltin chloride	1461-22-9	No	Yes	-		-		-		-		1
Tributyltin fluoride	1983-10-4	No	Yes	-		-		-		-		1
Tributyltin linoleate	24124-25-2	No	Yes	-		-		-		-		1
Tributyltin methacrylate	2155-70-6	No	Yes	-		-		-		-		1
Tributyltin naphthenate	85409-17-2	No	No	-		-		-		-		1
Tricaine Methanesulfonate	886-86-2	No	No	-		-		-		-		1
Tricalcium phosphate	7758-87-4	No	No	-		-		4.86E+01	U	-		1
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	No	Yes	-		-		3.00E+01	U	3.00E+01	U	1
Trichloro-2'-hydroxydiphenylether	3380-34-5	No	No	-		-		-		-		1
Trichloroacetic Acid	76-03-9	No	No	7.00E-02	U	-		2.00E-02	U	-		1
Trichloroaniline HCl, 2,4,6-	33663-50-2	No	No	2.90E-02	U	-		-		-		1
Trichloroaniline, 2,4,5-	636-30-6	No	No	-		-		-		-		1
Trichloroaniline, 2,4,6-	634-93-5	No	No	7.00E-03	U	-		3.00E-05	U	-		1
Trichlorobenzene	12002-48-1	No	Yes	-		-		-		-		1
Trichlorobenzene, 1,2,3-	87-61-6	No	Yes	-		-		8.00E-04	U	-		1
Trichlorobenzene, 1,2,4-	120-82-1	No	Yes	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1
Trichloroethane, 1,1,1-	71-55-6	No	Yes	-		-		2.00E+00	U	5.00E+00	U	1
Trichloroethane, 1,1,2-	79-00-5	No	Yes	5.70E-02	U	1.60E-05	U	4.00E-03	U	2.00E-04	U	1
Trichloroethylene	79-01-6	Yes	Yes	4.60E-02	U	4.10E-06	U	5.00E-04	U	2.00E-03	U	1
Trichlorofluoromethane	75-69-4	No	Yes	-		-		3.00E-01	U	7.00E-01	U	1
Trichlorophenol, 2,4,5-	95-95-4	No	No	-		-		1.00E-01	U	-		1
Trichlorophenol, 2,4,6-	88-06-2	No	No	1.10E-02	U	3.10E-06	U	1.00E-03	U	-		1
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	No	No	-		-		1.00E-02	U	-		1
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	Yes	No	-		-		-		-		1
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	No	No	-		-		8.00E-03	U	-		1
Trichloropropane, 1,1,2-	598-77-6	No	Yes	-		-		5.00E-03	U	-		1
Trichloropropane, 1,2,3-	96-18-4	Yes	Yes	3.00E+01	U	-		4.00E-03	U	3.00E-04	U	1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Tribromodiphenyl Ether	49690-94-0	-	1	1.07E+06	-	3.23E+09	-	-	-	-	-
Tribromophenol, 2,4,6-	118-79-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tributyl Phosphate	126-73-8	0.1	1	-	-	3.23E+09	2.29E+04	1.82E+05	-	2.04E+04	2.95E+04
Tributyltin	56573-85-4	-	1	4.95E+04	-	3.23E+09	-	-	-	-	-
Tributyltin Compounds	NA	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Tributyltin Oxide	56-35-9	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Tributyltin chloride	1461-22-9	-	1	5.94E+03	-	3.23E+09	-	-	-	-	-
Tributyltin fluoride	1983-10-4	-	1	8.59E+03	-	3.23E+09	-	-	-	-	-
Tributyltin linoleate	24124-25-2	-	1	1.67E+05	-	3.23E+09	-	-	-	-	-
Tributyltin methacrylate	2155-70-6	-	1	1.41E+04	-	3.23E+09	-	-	-	-	-
Tributyltin naphthenate	85409-17-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tricaine Methanesulfonate	886-86-2	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tricalcium phosphate	7758-87-4	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	-	1	1.77E+03	9.10E+02	3.23E+09	-	-	-	-	8.85E+07
Trichloro-2'-hydroxydiphenylether	3380-34-5	0.1	1	-	-	3.23E+09	-	-	-	-	-
Trichloroacetic Acid	76-03-9	0.1	1	-	-	3.23E+09	2.95E+03	2.34E+04	-	2.62E+03	5.90E+04
Trichloroaniline HCl, 2,4,6-	33663-50-2	0.1	1	-	-	3.23E+09	7.12E+03	5.64E+04	-	6.32E+03	-
Trichloroaniline, 2,4,5-	636-30-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Trichloroaniline, 2,4,6-	634-93-5	0.1	1	-	-	3.23E+09	2.95E+04	2.34E+05	-	2.62E+04	8.85E+01
Trichlorobenzene	12002-48-1	-	1	3.55E+04	-	3.23E+09	-	-	-	-	-
Trichlorobenzene, 1,2,3-	87-61-6	-	1	4.44E+04	-	3.23E+09	-	-	-	-	2.36E+03
Trichlorobenzene, 1,2,4-	120-82-1	-	1	4.13E+04	4.05E+02	3.23E+09	7.12E+03	-	-	7.12E+03	2.95E+04
Trichloroethane, 1,1,1-	71-55-6	-	1	2.27E+03	6.40E+02	3.23E+09	-	-	-	-	5.90E+06
Trichloroethane, 1,1,2-	79-00-5	-	1	9.95E+03	2.16E+03	3.23E+09	3.62E+03	-	1.59E+03	1.10E+03	1.18E+04
Trichloroethylene	79-01-6	-	1	3.04E+03	6.92E+02	3.23E+09	4.49E+03	-	1.90E+03	1.33E+03	1.47E+03
Trichlorofluoromethane	75-69-4	-	1	1.43E+03	1.23E+03	3.23E+09	-	-	-	-	8.85E+05
Trichlorophenol, 2,4,5-	95-95-4	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+05
Trichlorophenol, 2,4,6-	88-06-2	0.1	1	-	-	3.23E+09	1.88E+04	1.49E+05	2.66E+09	1.67E+04	2.95E+03
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	-	1	-	-	3.23E+09	-	-	-	-	-
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	0.1	1	-	-	3.23E+09	-	-	-	-	2.36E+04
Trichloropropane, 1,1,2-	598-77-6	-	1	2.07E+04	1.28E+03	3.23E+09	-	-	-	-	1.47E+04
Trichloropropane, 1,2,3-	96-18-4	-	1	2.17E+04	1.40E+03	3.23E+09	6.88E+00	-	-	6.88E+00	1.18E+04

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Tribromodiphenyl Ether	49690-94-0	-	-	-	
Tribromophenol, 2,4,6-	118-79-6	-	-	-	
Tributyl Phosphate	126-73-8	2.34E+05	-	2.62E+04	2.04E+04 ca**
Tributyltin	56573-85-4	-	-	-	
Tributyltin Compounds	NA	7.01E+03	-	7.86E+02	7.86E+02 nc
Tributyltin Oxide	56-35-9	7.01E+03	-	7.86E+02	7.86E+02 nc
Tributyltin chloride	1461-22-9	-	-	-	
Tributyltin fluoride	1983-10-4	-	-	-	
Tributyltin linoleate	24124-25-2	-	-	-	
Tributyltin methacrylate	2155-70-6	-	-	-	
Tributyltin naphthenate	85409-17-2	-	-	-	
Tricaine Methanesulfonate	886-86-2	-	-	-	
Tricalcium phosphate	7758-87-4	-	-	1.43E+08	1.43E+08 max
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	-	1.94E+06	1.90E+06	1.90E+06 sat
Trichloro-2'-hydroxydiphenylether	3380-34-5	-	-	-	
Trichloroacetic Acid	76-03-9	4.67E+05	-	5.24E+04	2.62E+03 ca*
Trichloroaniline HCl, 2,4,6-	33663-50-2	-	-	-	6.32E+03 ca
Trichloroaniline, 2,4,5-	636-30-6	-	-	-	
Trichloroaniline, 2,4,6-	634-93-5	7.01E+02	-	7.86E+01	7.86E+01 nc
Trichlorobenzene	12002-48-1	-	-	-	
Trichlorobenzene, 1,2,3-	87-61-6	-	-	2.36E+03	2.36E+03 nc
Trichlorobenzene, 1,2,4-	120-82-1	-	3.02E+03	2.74E+03	2.74E+03 sat
Trichloroethane, 1,1,1-	71-55-6	-	4.15E+05	3.88E+05	3.88E+05 sat
Trichloroethane, 1,1,2-	79-00-5	-	7.27E+01	7.22E+01	7.22E+01 nc
Trichloroethylene	79-01-6	-	2.22E+02	1.93E+02	1.93E+02 nc
Trichlorofluoromethane	75-69-4	-	3.65E+04	3.50E+04	3.50E+04 sat
Trichlorophenol, 2,4,5-	95-95-4	2.34E+06	-	2.62E+05	2.62E+05 max
Trichlorophenol, 2,4,6-	88-06-2	2.34E+04	-	2.62E+03	2.62E+03 nc
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	2.34E+05	-	2.62E+04	2.62E+04 nc
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	-	-	-	
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	1.87E+05	-	2.10E+04	2.10E+04 nc
Trichloropropane, 1,1,2-	598-77-6	-	-	1.47E+04	1.47E+04 sat
Trichloropropane, 1,2,3-	96-18-4	-	2.38E+02	2.33E+02	6.88E+00 ca*

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Trichloropropene, 1,2,3-	96-19-5	No	Yes	-		-		3.00E-03	U	3.00E-04	U	1
Trichlorotoluene, 2,3,6-	2077-46-5	No	Yes	-		-		-		-		1
Trichlorotoluene, alpha 2,6-	2014-83-7	No	Yes	-		-		-		-		1
Triclorophenols (total)	NA	No	No	-		-		-		-		1
Tricresyl Phosphate (TCP)	1330-78-5	No	No	-		-		2.00E-02	U	-		1
Tridiphane	58138-08-2	No	No	-		-		3.00E-03	U	-		1
Tridymite	15468-32-3	No	No	-		-		-		-		1
Triethyl Lead	5224-23-7	No	Yes	-		-		-		-		1
Triethyl phosphorothioate [O,O,O-]	126-68-1	No	Yes	-		-		-		-		1
Triethylamine	121-44-8	No	Yes	-		-		-		7.00E-03	U	1
Triethylene Glycol	112-27-6	No	No	-		-		2.00E+00	U	-		1
Trifluralin	1582-09-8	No	Yes	7.70E-03	U	-		7.50E-03	U	-		1
Trimagnesium phosphate	7757-87-1	No	No	-		-		4.86E+01	U	-		1
Trimethyl Lead	7442-13-9	No	Yes	-		-		-		-		1
Trimethyl Phosphate	512-56-1	No	No	2.00E-02	U	-		1.00E-02	U	-		1
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	No	Yes	-		-		-		-		1
Trimethylbenzene, 1,2,3-	526-73-8	No	Yes	-		-		-		5.00E-03	U	1
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes	-		-		-		7.00E-03	U	1
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes	-		-		1.00E-02	U	-		1
Trimethylethyl Lead	1762-26-1	No	Yes	-		-		-		-		1
Trimethylpentane, 2,2,4-	540-84-1	No	Yes	-		-		-		-		1
Trinitrobenzene, 1,3,5-	99-35-4	No	No	-		-		3.00E-02	U	-		1
Trinitrotoluene, 2,4,6-	118-96-7	No	No	3.00E-02	U	-		5.00E-04	U	-		1
Triphenylphosphine Oxide	791-28-6	No	No	-		-		2.00E-02	U	-		1
Triphenyltin	668-34-8	No	Yes	-		-		-		-		1
Tripotassium phosphate	7778-53-2	No	No	-		-		4.86E+01	U	-		1
Tripropyl Lead	6618-03-7	No	Yes	-		-		-		-		1
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	No	No	-		-		2.00E-02	U	-		1
Tris(1-chloro-2-propyl)phosphate	13674-84-5	No	No	-		-		1.00E-02	U	-		1
Tris(2,3-dibromopropyl)phosphate	126-72-7	No	Yes	2.30E+00	U	6.60E-04	U	-		-		1
Tris(2-chloroethyl)phosphate	115-96-8	No	No	2.00E-02	U	-		7.00E-03	U	-		1
Tris(2-ethylhexyl)phosphate	78-42-2	No	No	3.20E-03	U	-		1.00E-01	U	-		1
Trisbutoxyethyl Phosphate	78-51-3	No	No	-		-		-		-		1
Trisodium phosphate	7601-54-9	No	No	-		-		4.86E+01	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Trichloropropene, 1,2,3-	96-19-5	-	1	3.23E+03	4.51E+02	3.23E+09	-	-	-	-	8.85E+03
Trichlorotoluene, 2,3,6-	2077-46-5	-	1	5.83E+04	-	3.23E+09	-	-	-	-	-
Trichlorotoluene, alpha 2,6-	2014-83-7	-	1	9.70E+04	-	3.23E+09	-	-	-	-	-
Triclorophenols (total)	NA	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tricresyl Phosphate (TCP)	1330-78-5	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Tridiphane	58138-08-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Tridymite	15468-32-3	-	1	-	-	3.23E+09	-	-	-	-	-
Triethyl Lead	5224-23-7	-	1	1.80E+03	5.67E+03	3.23E+09	-	-	-	-	-
Triethyl phosphorothioate [O,O,O-]	126-68-1	-	1	3.87E+04	4.67E+02	3.23E+09	-	-	-	-	-
Triethylamine	121-44-8	-	1	2.18E+04	2.78E+04	3.23E+09	-	-	-	-	-
Triethylene Glycol	112-27-6	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+06
Trifluralin	1582-09-8	-	1	7.07E+05	-	3.23E+09	2.68E+04	-	-	2.68E+04	2.21E+04
Trimagnesium phosphate	7757-87-1	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Trimethyl Lead	7442-13-9	-	1	1.54E+03	6.92E+04	3.23E+09	-	-	-	-	-
Trimethyl Phosphate	512-56-1	0.1	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	2.95E+04
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	-	1	6.96E+05	-	3.23E+09	-	-	-	-	-
Trimethylbenzene, 1,2,3-	526-73-8	-	1	1.30E+04	2.93E+02	3.23E+09	-	-	-	-	-
Trimethylbenzene, 1,2,4-	95-63-6	-	1	1.09E+04	2.18E+02	3.23E+09	-	-	-	-	-
Trimethylbenzene, 1,3,5-	108-67-8	-	1	9.11E+03	1.82E+02	3.23E+09	-	-	-	-	2.95E+04
Trimethylethyl Lead	1762-26-1	-	1	1.98E+03	2.51E+04	3.23E+09	-	-	-	-	-
Trimethylpentane, 2,2,4-	540-84-1	-	1	1.29E+03	6.10E+01	3.23E+09	-	-	-	-	-
Trinitrobenzene, 1,3,5-	99-35-4	0.019	1	-	-	3.23E+09	-	-	-	-	8.85E+04
Trinitrotoluene, 2,4,6-	118-96-7	0.032	1	-	-	3.23E+09	6.88E+03	1.70E+05	-	6.62E+03	1.47E+03
Triphenylphosphine Oxide	791-28-6	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Triphenyltin	668-34-8	-	1	2.79E+06	-	3.23E+09	-	-	-	-	-
Tripotassium phosphate	7778-53-2	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08
Tripropyl Lead	6618-03-7	-	1	2.30E+03	5.57E+02	3.23E+09	-	-	-	-	-
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	0.1	1	-	-	3.23E+09	-	-	-	-	5.90E+04
Tris(1-chloro-2-propyl)phosphate	13674-84-5	0.1	1	-	-	3.23E+09	-	-	-	-	2.95E+04
Tris(2,3-dibromopropyl)phosphate	126-72-7	-	1	1.25E+06	4.67E+02	3.23E+09	8.98E+01	-	4.82E+03	8.81E+01	-
Tris(2-chloroethyl)phosphate	115-96-8	0.1	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	2.06E+04
Tris(2-ethylhexyl)phosphate	78-42-2	0.1	1	-	-	3.23E+09	6.45E+04	5.11E+05	-	5.73E+04	2.95E+05
Trisbutoxyethyl Phosphate	78-51-3	0.1	1	-	-	3.23E+09	-	-	-	-	-
Trisodium phosphate	7601-54-9	-	1	-	-	3.23E+09	-	-	-	-	1.43E+08

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Trichloropropene, 1,2,3-	96-19-5	-	3.53E+01	3.52E+01	3.52E+01 nc
Trichlorotoluene, 2,3,6-	2077-46-5	-	-	-	
Trichlorotoluene, alpha 2,6-	2014-83-7	-	-	-	
Triclorophenols (total)	NA	-	-	-	
Tricresyl Phosphate (TCP)	1330-78-5	4.67E+05	-	5.24E+04	5.24E+04 nc
Tridiphane	58138-08-2	7.01E+04	-	7.86E+03	7.86E+03 nc
Tridymite	15468-32-3	-	-	-	
Triethyl Lead	5224-23-7	-	-	-	
Triethyl phosphorothioate [O,O,O-]	126-68-1	-	-	-	
Triethylamine	121-44-8	-	5.57E+03	5.57E+03	5.57E+03 nc
Triethylene Glycol	112-27-6	4.67E+07	-	5.24E+06	5.24E+06 max
Trifluralin	1582-09-8	-	-	2.21E+04	2.21E+04 nc
Trimagnesium phosphate	7757-87-1	-	-	1.43E+08	1.43E+08 max
Trimethyl Lead	7442-13-9	-	-	-	
Trimethyl Phosphate	512-56-1	2.34E+05	-	2.62E+04	9.17E+03 ca**
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	-	-	-	
Trimethylbenzene, 1,2,3-	526-73-8	-	2.38E+03	2.38E+03	2.38E+03 sat
Trimethylbenzene, 1,2,4-	95-63-6	-	2.79E+03	2.79E+03	2.79E+03 sat
Trimethylbenzene, 1,3,5-	108-67-8	-	-	2.95E+04	2.95E+04 sat
Trimethylethyl Lead	1762-26-1	-	-	-	
Trimethylpentane, 2,2,4-	540-84-1	-	-	-	
Trinitrobenzene, 1,3,5-	99-35-4	3.69E+06	-	8.64E+04	8.64E+04 nc
Trinitrotoluene, 2,4,6-	118-96-7	3.65E+04	-	1.42E+03	1.42E+03 nc
Triphenylphosphine Oxide	791-28-6	4.67E+05	-	5.24E+04	5.24E+04 nc
Triphenyltin	668-34-8	-	-	-	
Tripotassium phosphate	7778-53-2	-	-	1.43E+08	1.43E+08 max
Tripropyl Lead	6618-03-7	-	-	-	
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	4.67E+05	-	5.24E+04	5.24E+04 nc
Tris(1-chloro-2-propyl)phosphate	13674-84-5	2.34E+05	-	2.62E+04	2.62E+04 nc
Tris(2,3-dibromopropyl)phosphate	126-72-7	-	-	-	8.81E+01 ca
Tris(2-chloroethyl)phosphate	115-96-8	1.64E+05	-	1.83E+04	9.17E+03 ca**
Tris(2-ethylhexyl)phosphate	78-42-2	2.34E+06	-	2.62E+05	5.73E+04 ca**
Trisbutoxyethyl Phosphate	78-51-3	-	-	-	
Trisodium phosphate	7601-54-9	-	-	1.43E+08	1.43E+08 max

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR UTILITY WORKER
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Trithion	786-19-6	No	No	-		-		-		-		1
Tungsten	7440-33-7	No	No	-		-		-		-		1
Uranium (Soluble Salts)	NA	No	No	-		-		3.00E-03	U	4.00E-05	U	1
Urea	57-13-6	No	No	-		-		-		-		1
Urethane	51-79-6	Yes	No	1.00E+00	U	2.90E-04	U	-		-		1
Vanadium Pentoxide	1314-62-1	No	No	-		8.30E-03	U	9.00E-03	U	7.00E-06	U	0.026
Vanadium Sulfate	36907-42-3	No	No	-		-		-		-		0.026
Vanadium and Compounds	7440-62-2	No	No	-		-		5.04E-03	U	1.00E-04	U	0.026
Vanadyl Sulfate	27774-13-6	No	No	-		-		-		-		1
Vernolate	1929-77-7	No	Yes	-		-		1.00E-03	U	-		1
Vinclozolin	50471-44-8	No	No	-		-		2.50E-02	U	-		1
Vinyl Acetate	108-05-4	No	Yes	-		-		1.00E+00	U	2.00E-01	U	1
Vinyl Bromide	593-60-2	No	Yes	-		3.20E-05	U	-		3.00E-03	U	1
Vinyl Chloride	75-01-4	Yes	Yes	7.20E-01	U	4.40E-06	U	3.00E-03	U	1.00E-01	U	1
Warfarin	81-81-2	No	No	-		-		3.00E-04	U	-		1
Xylene, P-	106-42-3	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1
Xylene, m-	108-38-3	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1
Xylene, o-	95-47-6	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1
Xylenes	1330-20-7	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1
Ytterbium	7440-64-4	No	No	-		-		-		-		1
Yttrium	7440-65-5	No	No	-		-		-		-		1
Zinc Cyanide	557-21-1	No	No	-		-		5.00E-02	U	-		1
Zinc Phosphide	1314-84-7	No	No	-		-		3.00E-04	U	-		1
Zinc and Compounds	7440-66-6	No	No	-		-		3.00E-01	U	-		1
Zineb	12122-67-7	No	No	-		-		5.00E-02	U	-		1
Zirconium	7440-67-7	No	No	-		-		8.00E-05	U	-		1

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)
Trithion	786-19-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Tungsten	7440-33-7	-	1	-	-	3.23E+09	-	-	-	-	-
Uranium (Soluble Salts)	NA	-	1	-	-	3.23E+09	-	-	-	-	8.85E+03
Urea	57-13-6	0.1	1	-	-	3.23E+09	-	-	-	-	-
Urethane	51-79-6	0.1	1	-	-	3.23E+09	2.06E+02	1.64E+03	2.85E+07	1.83E+02	-
Vanadium Pentoxide	1314-62-1	-	1	-	-	3.23E+09	-	-	9.95E+05	9.95E+05	2.65E+04
Vanadium Sulfate	36907-42-3	-	1	-	-	3.23E+09	-	-	-	-	-
Vanadium and Compounds	7440-62-2	-	1	-	-	3.23E+09	-	-	-	-	1.49E+04
Vanadyl Sulfate	27774-13-6	-	1	-	-	3.23E+09	-	-	-	-	-
Vernolate	1929-77-7	-	1	1.70E+05	-	3.23E+09	-	-	-	-	2.95E+03
Vinclozolin	50471-44-8	0.1	1	-	-	3.23E+09	-	-	-	-	7.37E+04
Vinyl Acetate	108-05-4	-	1	6.06E+03	2.75E+03	3.23E+09	-	-	-	-	2.95E+06
Vinyl Bromide	593-60-2	-	1	1.89E+03	3.38E+03	3.23E+09	-	-	1.51E+02	1.51E+02	-
Vinyl Chloride	75-01-4	-	1	1.32E+03	3.92E+03	3.23E+09	2.87E+02	-	7.65E+02	2.09E+02	8.85E+03
Warfarin	81-81-2	0.1	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Xylene, P-	106-42-3	-	1	7.70E+03	3.89E+02	3.23E+09	-	-	-	-	5.90E+05
Xylene, m-	108-38-3	-	1	7.54E+03	3.87E+02	3.23E+09	-	-	-	-	5.90E+05
Xylene, o-	95-47-6	-	1	8.90E+03	4.34E+02	3.23E+09	-	-	-	-	5.90E+05
Xylenes	1330-20-7	-	1	8.93E+03	2.58E+02	3.23E+09	-	-	-	-	5.90E+05
Ytterbium	7440-64-4	-	1	-	-	3.23E+09	-	-	-	-	-
Yttrium	7440-65-5	-	1	-	-	3.23E+09	-	-	-	-	-
Zinc Cyanide	557-21-1	-	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Zinc Phosphide	1314-84-7	-	1	-	-	3.23E+09	-	-	-	-	8.85E+02
Zinc and Compounds	7440-66-6	-	1	-	-	3.23E+09	-	-	-	-	8.85E+05
Zineb	12122-67-7	0.1	1	-	-	3.23E+09	-	-	-	-	1.47E+05
Zirconium	7440-67-7	-	1	-	-	3.23E+09	-	-	-	-	2.36E+02

Site-specific
Outdoor Worker Screening Levels (RSL) for Soil MODIFIED FOR U
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Trithion	786-19-6	-	-	-	
Tungsten	7440-33-7	-	-	-	
Uranium (Soluble Salts)	NA	-	4.72E+06	8.83E+03	8.83E+03 nc
Urea	57-13-6	-	-	-	
Urethane	51-79-6	-	-	-	1.83E+02 ca
Vanadium Pentoxide	1314-62-1	-	8.26E+05	2.57E+04	2.57E+04 nc
Vanadium Sulfate	36907-42-3	-	-	-	
Vanadium and Compounds	7440-62-2	-	1.18E+07	1.48E+04	1.48E+04 nc
Vanadyl Sulfate	27774-13-6	-	-	-	
Vernolate	1929-77-7	-	-	2.95E+03	2.95E+03 nc
Vinclozolin	50471-44-8	5.84E+05	-	6.55E+04	6.55E+04 nc
Vinyl Acetate	108-05-4	-	4.43E+04	4.36E+04	4.36E+04 sat
Vinyl Bromide	593-60-2	-	2.07E+02	2.07E+02	1.51E+02 ca**
Vinyl Chloride	75-01-4	-	4.81E+03	3.12E+03	2.09E+02 ca*
Warfarin	81-81-2	7.01E+03	-	7.86E+02	7.86E+02 nc
Xylene, P-	106-42-3	-	2.81E+04	2.68E+04	2.68E+04 sat
Xylene, m-	108-38-3	-	2.75E+04	2.63E+04	2.63E+04 sat
Xylene, o-	95-47-6	-	3.25E+04	3.08E+04	3.08E+04 sat
Xylenes	1330-20-7	-	3.26E+04	3.09E+04	3.09E+04 sat
Ytterbium	7440-64-4	-	-	-	
Yttrium	7440-65-5	-	-	-	
Zinc Cyanide	557-21-1	-	-	1.47E+05	1.47E+05 max
Zinc Phosphide	1314-84-7	-	-	8.85E+02	8.85E+02 nc
Zinc and Compounds	7440-66-6	-	-	8.85E+05	8.85E+05 max
Zineb	12122-67-7	1.17E+06	-	1.31E+05	1.31E+05 max
Zirconium	7440-67-7	-	-	2.36E+02	2.36E+02 nc

Site-specific
Recreator Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.000001
SA_{recsc} (skin surface area - child) cm^2/day	0
SA_{recsa} (skin surface area - adult) cm^2/day	2924.2
SA_{0-2} (skin surface area - mutagenic) cm^2/day	0
SA_{2-6} (skin surface area - mutagenic) cm^2/day	0
SA_{6-16} (skin surface area - mutagenic) cm^2/day	2160
SA_{16-30} (skin surface area - mutagenic) cm^2/day	3470
SA_{recsa} (skin surface area - adult) cm^2/day	2924.2
THQ (target hazard quotient) unitless	1
LT (lifetime - recreator) year	70
$IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg	1307.077
$DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg	3735.778
$IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	3846.591
$DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	5678.08
EF_{0-2} (exposure frequency) day/year	0
EF_{2-6} (exposure frequency) day/year	0
EF_{6-16} (exposure frequency) day/year	50
EF_{16-30} (exposure frequency) day/year	50
EF_{recsc} (exposure frequency - child) day/year	0
EF_{recsa} (exposure frequency - adult) day/year	50
EF_{recsa} (exposure frequency - adult) day/year	50
EF_{recs} (exposure frequency - recreator) day/year	50
IRS_{0-2} (soil intake rate) mg/day	0
IRS_{2-6} (soil intake rate) mg/day	0
IRS_{6-16} (soil intake rate) mg/day	100
IRS_{16-30} (soil intake rate) mg/day	50

IRS_{recsc} (soil intake rate - child) mg/day	0
IRS_{recsa} (soil intake rate - adult) mg/day	70.8
IRS_{recsa} (soil intake rate - adult) mg/day	70.8
ED_{0-2} (exposure duration) year	0
ED_{2-6} (exposure duration) year	0
ED_{6-16} (exposure duration) year	10
ED_{16-30} (exposure duration) year	14
ED_{recsc} (exposure duration - child) year	0
ED_{recsa} (exposure duration - adult) year	24
ED_{recsa} (exposure duration - adult) year	24
ED_{recs} (exposure duration - recreator) year	24
ET_{0-2} (exposure time) hr/day	0
ET_{2-6} (exposure time) hr/day	0
ET_{6-16} (exposure time) hr/day	2
ET_{16-30} (exposure time) hr/day	2
ET_{recsc} (exposure time - child) hr/day	0
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recs} (exposure time - recreator) hr/day	2
BW_{0-2} (body weight) kg	0
BW_{2-6} (body weight) kg	0
BW_{6-16} (body weight) kg	44
BW_{16-30} (body weight) kg	80
BW_{recsc} (body weight - child) kg	0
BW_{recsa} (body weight - adult) kg	65
BW_{recsa} (body weight - adult) kg	65
AF_{0-2} (skin adherence factor) mg/cm^2	0
AF_{2-6} (skin adherence factor) mg/cm^2	0
AF_{6-16} (skin adherence factor) mg/cm^2	0.04
AF_{16-30} (skin adherence factor) mg/cm^2	0.09
AF_{recsc} (skin adherence factor - child) mg/cm^2	0
AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.0692

AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.0692
City (Climate Zone) PEF Selection	Philadelphia, P
A_s (acres) PEF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) PEF Selection	87.36898
PEF (particulate emission factor) m^3/kg	3232997857
A (PEF Dispersion Constant)	14.0111
B (PEF Dispersion Constant)	19.6154
C (PEF Dispersion Constant)	225.3397
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.29
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.0993
City (Climate Zone) VF Selection	Philadelphia, P
A_s (acres) VF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) VF Selection	87.36898
foc (fraction organic carbon in soil) g/g	0.006
ρ$_b$ (dry soil bulk density) g/cm^3	1.5
ρ$_s$ (soil particle density) g/cm^3	2.65
θ$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	950000000
A (VF Dispersion Constant)	14.0111
B (VF Dispersion Constant)	19.6154
C (VF Dispersion Constant)	225.3397

Output generated 19MAY2015:09:40:18

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
ALAR	1596-84-5	No	No	1.80E-02	U	5.10E-06	U	1.50E-01	U			1
Acenaphthene	83-32-9	No	Yes					6.00E-02	U			1
Acenaphthylene	208-96-8	No	Yes									1
Acephate	30560-19-1	No	No	8.70E-03	U			4.00E-03	U			1
Acetaldehyde	75-07-0	No	Yes			2.20E-06	U			9.00E-03	U	1
Acetochlor	34256-82-1	No	No					2.00E-02	U			1
Acetone	67-64-1	No	Yes					9.00E-01	U	3.09E+01	U	1
Acetone Cyanohydrin	75-86-5	No	Yes							2.00E-03	U	1
Acetonitrile	75-05-8	No	Yes							6.00E-02	U	1
Acetophenone	98-86-2	No	Yes					1.00E-01	U			1
Acetylaminofluorene, 2-	53-96-3	No	No	3.80E+00	U	1.30E-03	U					1
Acifluorofen	50594-66-6	No	No									1
Acridine	260-94-6	No	No									1
Acrolein	107-02-8	No	Yes					5.00E-04	U	2.00E-05	U	1
Acrylamide	79-06-1	Yes	No	5.00E-01	U	1.00E-04	U	2.00E-03	U	6.00E-03	U	1
Acrylic Acid	79-10-7	No	Yes					5.00E-01	U	1.00E-03	U	1
Acrylonitrile	107-13-1	No	Yes	5.40E-01	U	6.80E-05	U	4.00E-02	U	2.00E-03	U	1
Adiponitrile	111-69-3	No	No							6.00E-03	U	1
Alachlor	15972-60-8	No	No	5.60E-02	U			1.00E-02	U			1
Aldicarb	116-06-3	No	No					1.00E-03	U			1
Aldicarb Sulfone	1646-88-4	No	No					1.00E-03	U			1
Aldicarb sulfoxide	1646-87-3	No	No									1
Aldrin	309-00-2	No	Yes	1.70E+01	U	4.90E-03	U	3.00E-05	U			1
Aliphatic Chlorinated Hydrocarbons (each)	NA	No	No									1
Aliphatic Chlorinated Hydrocarbons (total)	NA	No	No									1
Alizarin Red Compounds	NA	No	No									1
Ally	74223-64-6	No	No					2.50E-01	U			1
Allyl Alcohol	107-18-6	No	Yes					5.00E-03	U	1.00E-04	U	1
Allyl Chloride	107-05-1	No	Yes	2.10E-02	U	6.00E-06	U			1.00E-03	U	1
Aluminum	7429-90-5	No	No					1.00E+00	U	5.00E-03	U	1
Aluminum Phosphide	20859-73-8	No	No					4.00E-04	U			1
Aluminum metaphosphate	13776-88-0	No	No					4.86E+01	U			1
Amdro	67485-29-4	No	No					3.00E-04	U			1
Ametryn	834-12-8	No	No					9.00E-03	U			1
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
ALAR	1596-84-5	0.1	1			3.23E+09	1.09E+03	3.80E+03	1.62E+08	8.45E+02	
Acenaphthene	83-32-9	0.13	1	1.94E+05		3.23E+09					
Acenaphthylene	208-96-8	0.13	1	2.61E+05		3.23E+09					
Acephate	30560-19-1	0.1	1			3.23E+09	2.25E+03	7.86E+03		1.75E+03	
Acetaldehyde	75-07-0		1	1.20E+04	1.07E+05	3.23E+09			1.39E+03	1.39E+03	
Acetochlor	34256-82-1	0.1	1			3.23E+09					
Acetone	67-64-1		1	1.88E+04	1.14E+05	3.23E+09					
Acetone Cyanohydrin	75-86-5		1	3.28E+04	1.06E+05	3.23E+09					
Acetonitrile	75-05-8		1	1.79E+04	1.28E+05	3.23E+09					
Acetophenone	98-86-2		1	8.24E+04	2.52E+03	3.23E+09					
Acetylaminofluorene, 2-	53-96-3	0.1	1			3.23E+09	5.14E+00	1.80E+01	6.35E+05	4.00E+00	
Acifluorofen	50594-66-6	0.1	1			3.23E+09					
Acridine	260-94-6	0.1	1			3.23E+09					
Acrolein	107-02-8		1	9.52E+03	2.27E+04	3.23E+09					
Acrylamide	79-06-1	0.1	1			3.23E+09	1.33E+01	9.00E+01	4.51E+06	1.16E+01	
Acrylic Acid	79-10-7		1	1.31E+05	1.09E+05	3.23E+09					
Acrylonitrile	107-13-1		1	1.06E+04	1.13E+04	3.23E+09	3.62E+01		3.98E+01	1.90E+01	
Adiponitrile	111-69-3	0.1	1			3.23E+09					
Alachlor	15972-60-8	0.1	1			3.23E+09	3.49E+02	1.22E+03		2.71E+02	
Aldicarb	116-06-3	0.1	1			3.23E+09					
Aldicarb Sulfone	1646-88-4	0.1	1			3.23E+09					
Aldicarb sulfoxide	1646-87-3	0.1	1			3.23E+09					
Aldrin	309-00-2		1	2.37E+06		3.23E+09	1.15E+00		1.23E+02	1.14E+00	
Aliphatic Chlorinated Hydrocarbons (each)	NA	0.1	1			3.23E+09					
Aliphatic Chlorinated Hydrocarbons (total)	NA	0.1	1			3.23E+09					
Alizarin Red Compounds	NA	0.1	1			3.23E+09					
Ally	74223-64-6	0.1	1			3.23E+09					
Allyl Alcohol	107-18-6		1	4.71E+04	1.11E+05	3.23E+09					
Allyl Chloride	107-05-1		1	2.18E+03	1.42E+03	3.23E+09	9.31E+02		9.30E+01	8.45E+01	
Aluminum	7429-90-5		1			3.23E+09					
Aluminum Phosphide	20859-73-8		1			3.23E+09					
Aluminum metaphosphate	13776-88-0		1			3.23E+09					
Amdro	67485-29-4	0.1	1			3.23E+09					
Ametryn	834-12-8	0.1	1			3.23E+09					
Amino-4-chlorobenzotrifluoride, 3-	121-50-6		1	3.69E+05		3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
ALAR	1596-84-5				1.01E+06	3.52E+06		7.82E+05	8.45E+02 ca
Acenaphthene	83-32-9				4.02E+05	1.08E+06		2.93E+05	2.93E+05 max
Acenaphthylene	208-96-8								
Acephate	30560-19-1				2.68E+04	9.38E+04		2.08E+04	1.75E+03 ca*
Acetaldehyde	75-07-0						9.46E+03	9.46E+03	1.39E+03 ca**
Acetochlor	34256-82-1				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Acetone	67-64-1				6.03E+06		5.10E+07	5.39E+06	5.39E+06 sat
Acetone Cyanohydrin	75-86-5						5.75E+03	5.75E+03	5.75E+03 nc
Acetonitrile	75-05-8						9.40E+04	9.40E+04	9.40E+04 nc
Acetophenone	98-86-2				6.70E+05			6.70E+05	6.70E+05 sat
Acetylaminofluorene, 2-	53-96-3								4.00E+00 ca
Acifluorofen	50594-66-6								
Acridine	260-94-6								
Acrolein	107-02-8				3.35E+03		1.67E+01	1.66E+01	1.66E+01 nc
Acrylamide	79-06-1				1.34E+04	4.69E+04	1.70E+09	1.04E+04	1.16E+01 ca
Acrylic Acid	79-10-7				3.35E+06		1.15E+04	1.15E+04	1.15E+04 nc
Acrylonitrile	107-13-1				2.68E+05		1.85E+03	1.84E+03	1.90E+01 ca*
Adiponitrile	111-69-3						1.70E+09	1.70E+09	1.70E+09 max
Alachlor	15972-60-8				6.70E+04	2.34E+05		5.21E+04	2.71E+02 ca
Aldicarb	116-06-3				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Aldicarb Sulfone	1646-88-4				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Aldicarb sulfoxide	1646-87-3								
Aldrin	309-00-2				2.01E+02			2.01E+02	1.14E+00 ca
Aliphatic Chlorinated Hydrocarbons (each)	NA								
Aliphatic Chlorinated Hydrocarbons (total)	NA								
Alizarin Red Compounds	NA								
Ally	74223-64-6				1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Allyl Alcohol	107-18-6				3.35E+04		4.12E+02	4.07E+02	4.07E+02 nc
Allyl Chloride	107-05-1						1.91E+02	1.91E+02	8.45E+01 ca**
Aluminum	7429-90-5				6.70E+06		1.42E+09	6.67E+06	6.67E+06 max
Aluminum Phosphide	20859-73-8				2.68E+03			2.68E+03	2.68E+03 nc
Aluminum metaphosphate	13776-88-0				3.26E+08			3.26E+08	3.26E+08 max
Amdro	67485-29-4				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Ametryn	834-12-8				6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Amino-4-chlorobenzotrifluoride, 3-	121-50-6								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Aminoazobenzene, p-	60-09-3	No	No									1
Aminobiphenyl, 4-	92-67-1	No	No	2.10E+01	U	6.00E-03	U					1
Aminophenol, m-	591-27-5	No	No					8.00E-02	U			1
Aminophenol, o-	95-55-6	No	No									1
Aminophenol, p-	123-30-8	No	No					2.00E-02	U			1
Aminopyridine, 4-	504-24-5	No	No									1
Amitraz	33089-61-1	No	No					2.50E-03	U			1
Ammonium Perchlorate	7790-98-9	No	No					7.00E-04	U			1
Ammonium Sulfamate	7773-06-0	No	No					2.00E-01	U			1
Ammonium polyphosphate	68333-79-9	No	No					4.86E+01	U			1
Amyl Alcohol, tert-	75-85-4	No	Yes							3.00E-03	U	1
Aniline	62-53-3	No	No	5.70E-03	U	1.60E-06	U	7.00E-03	U	1.00E-03	U	1
Anilinobenzothiazole	1843-21-6	No	No									1
Anthracene	120-12-7	No	Yes					3.00E-01	U			1
Anthraquinone, 9,10-	84-65-1	No	No	4.00E-02	U			2.00E-03	U			1
Antimony (metallic)	7440-36-0	No	No					4.00E-04	U			0.15
Antimony Pentoxide	1314-60-9	No	No					5.00E-04	U			0.15
Antimony Potassium Tartrate	11071-15-1	No	No					9.00E-04	U			0.15
Antimony Tetroxide	1332-81-6	No	No					4.00E-04	U			0.15
Antimony Trichloride	10025-91-9	No	No									1
Antimony Trioxide	1309-64-4	No	No							2.00E-04	U	0.15
Apollo	74115-24-5	No	No					1.30E-02	U			1
Aramite	140-57-8	No	No	2.50E-02	U	7.10E-06	U	5.00E-02	U			1
Aroclor 1016	12674-11-2	No	Yes	7.00E-02	U	2.00E-05	U	7.00E-05	U			1
Aroclor 1221	11104-28-2	No	Yes	2.00E+00	U	5.71E-04	U					1
Aroclor 1232	11141-16-5	No	Yes	2.00E+00	U	5.71E-04	U					1
Aroclor 1242	53469-21-9	No	Yes	2.00E+00	U	5.71E-04	U					1
Aroclor 1248	12672-29-6	No	Yes	2.00E+00	U	5.71E-04	U					1
Aroclor 1254	11097-69-1	No	Yes	2.00E+00	U	5.71E-04	U	2.00E-05	U			1
Aroclor 1260	11096-82-5	No	Yes	2.00E+00	U	5.71E-04	U					1
Aroclor 5460	11126-42-4	No	Yes					6.00E-04	U			1
Arsenic Salts	NA	No	No									1
Arsenic, Inorganic	7440-38-2	No	No	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1
Arsine	7784-42-1	No	No					3.50E-06	U	5.00E-05	U	1
Assure	76578-14-8	No	No					9.00E-03	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Aminoazobenzene, p-	60-09-3	0.1	1			3.23E+09					
Aminobiphenyl, 4-	92-67-1	0.1	1			3.23E+09	9.31E-01	3.26E+00	1.38E+05	7.24E-01	
Aminophenol, m-	591-27-5	0.1	1			3.23E+09					
Aminophenol, o-	95-55-6	0.1	1			3.23E+09					
Aminophenol, p-	123-30-8	0.1	1			3.23E+09					
Aminopyridine, 4-	504-24-5	0.1	1			3.23E+09					
Amitraz	33089-61-1	0.1	1			3.23E+09					
Ammonium Perchlorate	7790-98-9		1			3.23E+09					
Ammonium Sulfamate	7773-06-0		1			3.23E+09					
Ammonium polyphosphate	68333-79-9		1			3.23E+09					
Amyl Alcohol, tert-	75-85-4		1	3.62E+04	1.37E+04	3.23E+09					
Aniline	62-53-3	0.1	1			3.23E+09	3.43E+03	1.20E+04	5.16E+08	2.67E+03	
Anilinobenzothiazole	1843-21-6	0.1	1			3.23E+09					
Anthracene	120-12-7	0.13	1	7.23E+05		3.23E+09					
Anthraquinone, 9,10-	84-65-1	0.1	1			3.23E+09	4.89E+02	1.71E+03		3.80E+02	
Antimony (metallic)	7440-36-0		1			3.23E+09					
Antimony Pentoxide	1314-60-9		1			3.23E+09					
Antimony Potassium Tartrate	11071-15-1		1			3.23E+09					
Antimony Tetroxide	1332-81-6		1			3.23E+09					
Antimony Trichloride	10025-91-9		1			3.23E+09					
Antimony Trioxide	1309-64-4		1			3.23E+09					
Apollo	74115-24-5	0.1	1			3.23E+09					
Aramite	140-57-8	0.1	1			3.23E+09	7.82E+02	2.74E+03	1.16E+08	6.08E+02	
Aroclor 1016	12674-11-2	0.14	1	8.07E+05		3.23E+09	2.79E+02	6.98E+02	1.03E+04	1.96E+02	
Aroclor 1221	11104-28-2	0.14	1	1.57E+05		3.23E+09	9.77E+00	2.44E+01	7.00E+01	6.35E+00	
Aroclor 1232	11141-16-5	0.14	1	1.54E+05		3.23E+09	9.77E+00	2.44E+01	6.91E+01	6.34E+00	
Aroclor 1242	53469-21-9	0.14	1	1.09E+06		3.23E+09	9.77E+00	2.44E+01	4.89E+02	6.88E+00	
Aroclor 1248	12672-29-6	0.14	1	7.08E+05		3.23E+09	9.77E+00	2.44E+01	3.17E+02	6.83E+00	
Aroclor 1254	11097-69-1	0.14	1	1.16E+06		3.23E+09	9.77E+00	2.44E+01	5.21E+02	6.89E+00	
Aroclor 1260	11096-82-5	0.14	1	1.82E+06		3.23E+09	9.77E+00	2.44E+01	8.13E+02	6.92E+00	
Aroclor 5460	11126-42-4	0.14	1	9.89E+05		3.23E+09					
Arsenic Salts	NA	0.03	0.6			3.23E+09					
Arsenic, Inorganic	7440-38-2	0.03	0.6			3.23E+09	2.17E+01	1.52E+02	1.92E+05	1.90E+01	
Arsine	7784-42-1		1			3.23E+09					
Assure	76578-14-8	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Aminoazobenzene, p-	60-09-3								
Aminobiphenyl, 4-	92-67-1								7.24E-01 ca
Aminophenol, m-	591-27-5				5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Aminophenol, o-	95-55-6								
Aminophenol, p-	123-30-8				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Aminopyridine, 4-	504-24-5								
Amitraz	33089-61-1				1.68E+04	5.86E+04		1.30E+04	1.30E+04 nc
Ammonium Perchlorate	7790-98-9				4.69E+03			4.69E+03	4.69E+03 nc
Ammonium Sulfamate	7773-06-0				1.34E+06			1.34E+06	1.34E+06 max
Ammonium polyphosphate	68333-79-9				3.26E+08			3.26E+08	3.26E+08 max
Amyl Alcohol, tert-	75-85-4						9.50E+03	9.50E+03	9.50E+03 nc
Aniline	62-53-3				4.69E+04	1.64E+05	2.83E+08	3.65E+04	2.67E+03 ca*
Anilinobenzothiazole	1843-21-6								
Anthracene	120-12-7				2.01E+06	5.41E+06		1.47E+06	1.47E+06 max
Anthraquinone, 9,10-	84-65-1				1.34E+04	4.69E+04		1.04E+04	3.80E+02 ca*
Antimony (metallic)	7440-36-0				2.68E+03			2.68E+03	2.68E+03 nc
Antimony Pentoxide	1314-60-9				3.35E+03			3.35E+03	3.35E+03 nc
Antimony Potassium Tartrate	11071-15-1				6.03E+03			6.03E+03	6.03E+03 nc
Antimony Tetroxide	1332-81-6				2.68E+03			2.68E+03	2.68E+03 nc
Antimony Trichloride	10025-91-9								
Antimony Trioxide	1309-64-4						5.66E+07	5.66E+07	5.66E+07 max
Apollo	74115-24-5				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Aramite	140-57-8				3.35E+05	1.17E+06		2.61E+05	6.08E+02 ca
Aroclor 1016	12674-11-2				4.69E+02	1.17E+03		3.35E+02	1.96E+02 ca**
Aroclor 1221	11104-28-2								6.35E+00 ca
Aroclor 1232	11141-16-5								6.34E+00 ca
Aroclor 1242	53469-21-9								6.88E+00 ca
Aroclor 1248	12672-29-6								6.83E+00 ca
Aroclor 1254	11097-69-1				1.34E+02	3.35E+02		9.57E+01	6.89E+00 ca*
Aroclor 1260	11096-82-5								6.92E+00 ca
Aroclor 5460	11126-42-4				4.02E+03	1.00E+04		2.87E+03	2.87E+03 nc
Arsenic Salts	NA								
Arsenic, Inorganic	7440-38-2				3.35E+03	2.34E+04	4.25E+06	2.93E+03	1.90E+01 ca
Arsine	7784-42-1				2.35E+01		1.42E+07	2.35E+01	2.35E+01 nc
Assure	76578-14-8				6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Asulam	3337-71-1	No	No					5.00E-02	U			1
Atrazine	1912-24-9	No	No	2.30E-01	U			3.50E-02	U			1
Auramine	492-80-8	No	No	8.80E-01	U	2.50E-04	U					1
Avermectin B1	65195-55-3	No	No					4.00E-04	U			1
Azobenzene	103-33-3	No	Yes	1.10E-01	U	3.10E-05	U					1
Azodicarbonamide	123-77-3	No	No					1.00E+00	U	7.00E-06	U	1
Barium	7440-39-3	No	No					2.00E-01	U	5.00E-04	U	0.07
Barium Chromate	10294-40-3	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Barium Cyanide	542-62-1	No	No									0.07
Baygon	114-26-1	No	No					4.00E-03	U			1
Bayleton	43121-43-3	No	No					3.00E-02	U			1
Baythroid	68359-37-5	No	No					2.50E-02	U			1
Benefin	1861-40-1	No	Yes					3.00E-01	U			1
Benomyl	17804-35-2	No	No					5.00E-02	U			1
Bentazon	25057-89-0	No	No					3.00E-02	U			1
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	U	1.10E-04	U					1
Benzaldehyde	100-52-7	No	Yes					1.00E-01	U			1
Benzene	71-43-2	No	Yes	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1
Benzene, Ethyldimethyl	29224-55-3	No	Yes									1
Benzene, Ethylmethyl	25550-14-5	No	Yes									1
Benzene, Methylpropenyl	768-00-3	No	Yes									1
Benzene, Methylpropyl	28729-54-6	No	No									1
Benzene, Trimethyl	25551-13-7	No	Yes									1
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	No	No	1.00E-01	U			3.00E-04	U			1
Benzenethiol	108-98-5	No	Yes					1.00E-03	U			1
Benzidine	92-87-5	Yes	No	2.30E+02	U	6.70E-02	U	3.00E-03	U			1
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	U	1.10E-04	U					1
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	U	1.10E-03	U					1
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	U	1.10E-04	U					1
Benzo[g,h,i]perylene	191-24-2	No	No									1
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	U	1.10E-04	U					1
Benzofluoranthenes, total	NA	No	No									1
Benzofluorene, 2,3-	243-17-4	No	No									1
Benzoic Acid	65-85-0	No	No					4.00E+00	U			1
Benzoic acid, 3,5-dichloro-	51-36-5	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Asulam	3337-71-1	0.1	1			3.23E+09					
Atrazine	1912-24-9	0.1	1			3.23E+09	8.50E+01	2.97E+02		6.61E+01	
Auramine	492-80-8	0.1	1			3.23E+09	2.22E+01	7.77E+01	3.30E+06	1.73E+01	
Avermectin B1	65195-55-3	0.1	1			3.23E+09					
Azobenzene	103-33-3		1	7.21E+05		3.23E+09	1.78E+02		5.94E+03	1.73E+02	
Azodicarbonamide	123-77-3	0.1	1			3.23E+09					
Barium	7440-39-3		1			3.23E+09					
Barium Chromate	10294-40-3		1			3.23E+09	1.33E+01		3.00E+03	1.32E+01	
Barium Cyanide	542-62-1		1			3.23E+09					
Baygon	114-26-1	0.1	1			3.23E+09					
Bayleton	43121-43-3	0.1	1			3.23E+09					
Baythroid	68359-37-5	0.1	1			3.23E+09					
Benefin	1861-40-1		1	4.23E+05		3.23E+09					
Benomyl	17804-35-2	0.1	1			3.23E+09					
Bentazon	25057-89-0	0.1	1			3.23E+09					
Benz[a]anthracene	56-55-3	0.13	1	6.09E+06		3.23E+09	9.10E+00	4.74E+01	7.70E+03	7.63E+00	
Benzaldehyde	100-52-7		1	3.10E+04	1.16E+03	3.23E+09					
Benzene	71-43-2		1	4.88E+03	1.82E+03	3.23E+09	3.55E+02		1.60E+02	1.10E+02	
Benzene, Ethyldimethyl	29224-55-3		1	1.26E+04	1.31E+02	3.23E+09					
Benzene, Ethylmethyl	25550-14-5		1	1.30E+04	3.30E+02	3.23E+09					
Benzene, Methylpropenyl	768-00-3		1	1.58E+04	4.90E+02	3.23E+09					
Benzene, Methylpropyl	28729-54-6	0.1	1			3.23E+09					
Benzene, Trimethyl	25551-13-7		1	9.03E+03	1.82E+02	3.23E+09					
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	0.1	1			3.23E+09	1.95E+02	6.84E+02		1.52E+02	
Benzenethiol	108-98-5		1	2.67E+04	1.26E+03	3.23E+09					
Benzidine	92-87-5	0.1	1			3.23E+09	2.89E-02	1.96E-01	6.72E+03	2.52E-02	
Benzo(j)fluoranthene	205-82-3	0.13	1			3.23E+09	1.63E+01	4.38E+01	7.51E+06	1.19E+01	
Benzo[a]pyrene	50-32-8	0.13	1			3.23E+09	9.10E-01	4.74E+00	4.10E+05	7.63E-01	
Benzo[b]fluoranthene	205-99-2	0.13	1			3.23E+09	9.10E+00	4.74E+01	4.10E+06	7.63E+00	
Benzo[g,h,i]perylene	191-24-2	0.13	1			3.23E+09					
Benzo[k]fluoranthene	207-08-9	0.13	1			3.23E+09	9.10E+01	4.74E+02	4.10E+06	7.63E+01	
Benzofluoranthenes, total	NA	0.1	1			3.23E+09					
Benzofluorene, 2,3-	243-17-4	0.1	1			3.23E+09					
Benzoic Acid	65-85-0	0.1	1			3.23E+09					
Benzoic acid, 3,5-dichloro-	51-36-5	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Asulam	3337-71-1				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Atrazine	1912-24-9				2.35E+05	8.21E+05		1.82E+05	6.61E+01 ca
Auramine	492-80-8								1.73E+01 ca
Avermectin B1	65195-55-3				2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Azobenzene	103-33-3								1.73E+02 ca
Azodicarbonamide	123-77-3				6.70E+06	2.34E+07	1.98E+06	1.44E+06	1.44E+06 max
Barium	7440-39-3				1.34E+06		1.42E+08	1.33E+06	1.33E+06 max
Barium Chromate	10294-40-3				1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Barium Cyanide	542-62-1								
Baygon	114-26-1				2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
Bayleton	43121-43-3				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Baythroid	68359-37-5				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Benefin	1861-40-1				2.01E+06			2.01E+06	2.01E+06 max
Benomyl	17804-35-2				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Bentazon	25057-89-0				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Benz[a]anthracene	56-55-3								7.63E+00 ca
Benzaldehyde	100-52-7				6.70E+05			6.70E+05	6.70E+05 sat
Benzene	71-43-2				2.68E+04		1.28E+04	8.67E+03	1.10E+02 ca*
Benzene, Ethyldimethyl	29224-55-3								
Benzene, Ethylmethyl	25550-14-5								
Benzene, Methylpropenyl	768-00-3								
Benzene, Methylpropyl	28729-54-6								
Benzene, Trimethyl	25551-13-7								
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1				2.01E+03	7.03E+03		1.56E+03	1.52E+02 ca*
Benzenethiol	108-98-5				6.70E+03			6.70E+03	6.70E+03 sat
Benzidine	92-87-5				2.01E+04	7.03E+04		1.56E+04	2.52E-02 ca
Benzo(j)fluoranthene	205-82-3								1.19E+01 ca
Benzo[a]pyrene	50-32-8								7.63E-01 ca
Benzo[b]fluoranthene	205-99-2								7.63E+00 ca
Benzo[g,h,i]perylene	191-24-2								
Benzo[k]fluoranthene	207-08-9								7.63E+01 ca
Benzofluoranthenes, total	NA								
Benzofluorene, 2,3-	243-17-4								
Benzoic Acid	65-85-0				2.68E+07	9.38E+07		2.08E+07	2.08E+07 max
Benzoic acid, 3,5-dichloro-	51-36-5								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	No	No									1
Benzothiazole	95-16-9	No	No									1
Benzotrichloride	98-07-7	No	Yes	1.30E+01	U							1
Benzyl Alcohol	100-51-6	No	No					1.00E-01	U			1
Benzyl Chloride	100-44-7	No	Yes	1.70E-01	U	4.90E-05	U	2.00E-03	U	1.00E-03	U	1
Beryllium and compounds	7440-41-7	No	No			2.40E-03	U	2.00E-03	U	2.00E-05	U	0.007
Bidrin	141-66-2	No	No					1.00E-04	U			1
Bifenox	42576-02-3	No	No					9.00E-03	U			1
Biphenthrin	82657-04-3	No	No					1.50E-02	U			1
Biphenyl, 1,1'-	92-52-4	No	Yes	8.00E-03	U			5.00E-01	U	4.00E-04	U	1
Bis(2-chloro-1-methylethyl) ether	108-60-1	No	Yes	7.00E-02	U	1.00E-05	U	4.00E-02	U			1
Bis(2-chloroethoxy)methane	111-91-1	No	No					3.00E-03	U			1
Bis(2-chloroethyl)ether	111-44-4	No	Yes	1.10E+00	U	3.30E-04	U					1
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	1.40E-02	U	2.40E-06	U	2.00E-02	U			1
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	No	Yes									1
Bis(chloromethyl)ether	542-88-1	No	Yes	2.20E+02	U	6.20E-02	U					1
Bis(oleoyloxy)dibutyl tin	13323-62-1	No	Yes									1
Bisphenol A	80-05-7	No	No					5.00E-02	U			1
Boron And Borates Only	7440-42-8	No	No					2.00E-01	U	2.00E-02	U	1
Boron Trichloride	10294-34-5	No	Yes					2.00E+00	U	2.00E-02	U	1
Boron Trifluoride	7637-07-2	No	Yes					4.00E-02	U	1.30E-02	U	1
Bromacil	314-40-9	No	No									1
Bromate	15541-45-4	No	No	7.00E-01	U			4.00E-03	U			1
Bromine	7726-95-6	No	Yes									1
Bromo-2-chloroethane, 1-	107-04-0	No	Yes	2.00E+00	U	6.00E-04	U					1
Bromo-3-fluorobenzene, 1-	1073-06-9	No	Yes									1
Bromo-4-Ethylbenzene, 1-	1585-07-5	No	Yes									1
Bromoacetic acid	79-08-3	No	No									1
Bromoacetophenone, 3-	2142-63-4	No	No									1
Bromobenzene	108-86-1	No	Yes					8.00E-03	U	6.00E-02	U	1
Bromochloromethane	74-97-5	No	Yes							4.00E-02	U	1
Bromodichloromethane	75-27-4	No	Yes	6.20E-02	U	3.70E-05	U	2.00E-02	U			1
Bromodiphenyl Ether, p-	101-55-3	No	Yes									1
Bromofluorobenzene, p-	460-00-4	No	Yes									1
Bromoform	75-25-2	No	Yes	7.90E-03	U	1.10E-06	U	2.00E-02	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	0.1	1			3.23E+09					
Benzothiazole	95-16-9	0.1	1			3.23E+09					
Benzotrichloride	98-07-7		1	9.33E+04	3.23E+02	3.23E+09	1.50E+00			1.50E+00	
Benzyl Alcohol	100-51-6	0.1	1			3.23E+09					
Benzyl Chloride	100-44-7		1	3.52E+04	1.46E+03	3.23E+09	1.15E+02		1.83E+02	7.07E+01	
Beryllium and compounds	7440-41-7		1			3.23E+09			3.44E+05	3.44E+05	
Bidrin	141-66-2	0.1	1			3.23E+09					
Bifenox	42576-02-3	0.1	1			3.23E+09					
Biphenthrin	82657-04-3	0.1	1			3.23E+09					
Biphenyl, 1,1'-	92-52-4		1	1.57E+05		3.23E+09	2.44E+03			2.44E+03	
Bis(2-chloro-1-methylethyl) ether	108-60-1		1	4.83E+04	1.02E+03	3.23E+09	2.79E+02		1.23E+03	2.28E+02	
Bis(2-chloroethoxy)methane	111-91-1	0.1	1			3.23E+09					
Bis(2-chloroethyl)ether	111-44-4		1	5.87E+04	5.05E+03	3.23E+09	1.78E+01		4.54E+01	1.28E+01	
Bis(2-ethylhexyl)phthalate	117-81-7	0.1	1			3.23E+09	1.40E+03	4.89E+03	3.44E+08	1.09E+03	
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5		1	8.48E+04		3.23E+09					
Bis(chloromethyl)ether	542-88-1		1	2.59E+03	4.22E+03	3.23E+09	8.89E-02		1.07E-02	9.53E-03	
Bis(oleoyloxy)dibutyl tin	13323-62-1		1	2.64E+06		3.23E+09					
Bisphenol A	80-05-7	0.1	1			3.23E+09					
Boron And Borates Only	7440-42-8		1			3.23E+09					
Boron Trichloride	10294-34-5		1			3.23E+09					
Boron Trifluoride	7637-07-2		1			3.23E+09					
Bromacil	314-40-9	0.1	1			3.23E+09					
Bromate	15541-45-4		1			3.23E+09	2.79E+01			2.79E+01	
Bromine	7726-95-6		1			3.23E+09					
Bromo-2-chloroethane, 1-	107-04-0		1	8.17E+03	2.38E+03	3.23E+09	9.77E+00		3.48E+00	2.57E+00	
Bromo-3-fluorobenzene, 1-	1073-06-9		1	9.79E+03	9.07E+02	3.23E+09					
Bromo-4-Ethylbenzene, 1-	1585-07-5		1	1.96E+04	2.06E+02	3.23E+09					
Bromoacetic acid	79-08-3	0.1	1			3.23E+09					
Bromoacetophenone, 3-	2142-63-4	0.1	1			3.23E+09					
Bromobenzene	108-86-1		1	1.15E+04	6.79E+02	3.23E+09					
Bromochloromethane	74-97-5		1	4.94E+03	4.03E+03	3.23E+09					
Bromodichloromethane	75-27-4		1	5.47E+03	9.31E+02	3.23E+09	3.15E+02		3.77E+01	3.37E+01	
Bromodiphenyl Ether, p-	101-55-3		1	2.57E+05	1.06E+02	3.23E+09					
Bromofluorobenzene, p-	460-00-4		1	9.95E+03	1.06E+03	3.23E+09					
Bromoform	75-25-2		1	1.34E+04	9.14E+02	3.23E+09	2.47E+03		3.11E+03	1.38E+03	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3								
Benzothiazole	95-16-9								
Benzotrichloride	98-07-7								1.50E+00 ca
Benzyl Alcohol	100-51-6				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Benzyl Chloride	100-44-7				1.34E+04		3.08E+03	2.51E+03	7.07E+01 ca*
Beryllium and compounds	7440-41-7				1.34E+04		5.66E+06	1.34E+04	1.34E+04 nc
Bidrin	141-66-2				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Bifenox	42576-02-3				6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Biphenthrin	82657-04-3				1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Biphenyl, 1,1'-	92-52-4				3.35E+06		5.50E+03	5.49E+03	2.44E+03 ca**
Bis(2-chloro-1-methylethyl) ether	108-60-1				2.68E+05			2.68E+05	2.28E+02 ca
Bis(2-chloroethoxy)methane	111-91-1				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Bis(2-chloroethyl)ether	111-44-4								1.28E+01 ca
Bis(2-ethylhexyl)phthalate	117-81-7				1.34E+05	4.69E+05		1.04E+05	1.09E+03 ca*
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5								
Bis(chloromethyl)ether	542-88-1								9.53E-03 ca
Bis(oleoyloxy)dibutyl tin	13323-62-1								
Bisphenol A	80-05-7				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Boron And Borates Only	7440-42-8				1.34E+06		5.66E+09	1.34E+06	1.34E+06 max
Boron Trichloride	10294-34-5				1.34E+07		5.66E+09	1.34E+07	1.34E+07 max
Boron Trifluoride	7637-07-2				2.68E+05		3.68E+09	2.68E+05	2.68E+05 max
Bromacil	314-40-9								
Bromate	15541-45-4				2.68E+04			2.68E+04	2.79E+01 ca
Bromine	7726-95-6								
Bromo-2-chloroethane, 1-	107-04-0								2.57E+00 ca
Bromo-3-fluorobenzene, 1-	1073-06-9								
Bromo-4-Ethylbenzene, 1-	1585-07-5								
Bromoacetic acid	79-08-3								
Bromoacetophenone, 3-	2142-63-4								
Bromobenzene	108-86-1				5.36E+04		6.07E+04	2.85E+04	2.85E+04 sat
Bromochloromethane	74-97-5						1.73E+04	1.73E+04	1.73E+04 sat
Bromodichloromethane	75-27-4				1.34E+05			1.34E+05	3.37E+01 ca
Bromodiphenyl Ether, p-	101-55-3								
Bromofluorobenzene, p-	460-00-4								
Bromoform	75-25-2				1.34E+05			1.34E+05	1.38E+03 sat

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Bromomethane	74-83-9	No	Yes					1.40E-03	U	5.00E-03	U	1
Bromophenol, p-	106-41-2	No	No									1
Bromophenyl-phenyl phthalate, 4-	NA	No	No									1
Bromophos	2104-96-3	No	Yes					5.00E-03	U			1
Bromopyridine, 2-	109-04-6	No	No									1
Bromotrichloromethane	75-62-7	No	Yes									1
Bromoxynil	1689-84-5	No	No					2.00E-02	U			1
Bromoxynil Octanoate	1689-99-2	No	Yes					2.00E-02	U			1
Butadiene, 1,3-	106-99-0	No	Yes	3.40E+00	U	3.00E-05	U			2.00E-03	U	1
Butanediol, 2,3-	513-85-9	No	No									1
Butanol	35296-72-1	No	Yes									1
Butanol, N-	71-36-3	No	Yes					1.00E-01	U			1
Butanone-2, 4-chloro-4,4-difluoro	NA	No	No									1
Butyl Alcohol, t-	75-65-0	No	Yes									1
Butyl Benzyl Phthlate	85-68-7	No	No	1.90E-03	U			2.00E-01	U			1
Butyl Formate, tert-	762-75-4	No	Yes									1
Butyl alcohol, sec-	78-92-2	No	Yes					2.00E+00	U	3.00E+01	U	1
Butylacetate	123-86-4	No	Yes									1
Butylate	2008-41-5	No	Yes					5.00E-02	U			1
Butylated hydroxyanisole	25013-16-5	No	No	2.00E-04	U	5.70E-08	U					1
Butylated hydroxytoluene	128-37-0	No	No	3.60E-03	U			3.00E-01	U			1
Butylbenzene, n-	104-51-8	No	Yes					5.00E-02	U			1
Butylbenzene, sec-	135-98-8	No	Yes					1.00E-01	U			1
Butylbenzene, tert-	98-06-6	No	Yes					1.00E-01	U			1
Butylchloride, t-	507-20-0	No	Yes									1
Butylphthalyl Butylglycolate	85-70-1	No	No					1.00E+00	U			1
Butyltin	NA	No	No									1
Cacodylic Acid	75-60-5	No	No					2.00E-02	U			1
Cadmium (Diet)	7440-43-9	No	No			1.80E-03	U	1.00E-03	U	1.00E-05	U	0.025
Calcium	7440-70-2	No	No									1
Calcium Chlorate	10137-74-3	No	No									1
Calcium Chromate	13765-19-0	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Calcium Cyanide	592-01-8	No	No					1.00E-03	U			1
Calcium pyrophosphate	7790-76-3	No	No					4.86E+01	U			1
Caprolactam	105-60-2	No	No					5.00E-01	U	2.20E-03	U	1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Bromomethane	74-83-9		1	1.93E+03	3.59E+03	3.23E+09					
Bromophenol, p-	106-41-2	0.1	1			3.23E+09					
Bromophenyl-phenyl phthalate, 4-	NA	0.1	1			3.23E+09					
Bromophos	2104-96-3		1	1.71E+05		3.23E+09					
Bromopyridine, 2-	109-04-6	0.1	1			3.23E+09					
Bromotrichloromethane	75-62-7		1	1.80E+04	4.25E+02	3.23E+09					
Bromoxynil	1689-84-5	0.1	1			3.23E+09					
Bromoxynil Octanoate	1689-99-2		1	6.55E+05		3.23E+09					
Butadiene, 1,3-	106-99-0		1	1.20E+03	6.67E+02	3.23E+09	5.75E+00		1.02E+01	3.68E+00	
Butanediol, 2,3-	513-85-9	0.1	1			3.23E+09					
Butanol	35296-72-1		1	4.02E+04	1.47E+04	3.23E+09					
Butanol, N-	71-36-3		1	4.13E+04	7.64E+03	3.23E+09					
Butanone-2, 4-chloro-4,4-difluoro	NA	0.1	1			3.23E+09					
Butyl Alcohol, t-	75-65-0		1	3.96E+04		3.23E+09					
Butyl Benzyl Phthlate	85-68-7	0.1	1			3.23E+09	1.03E+04	3.60E+04		8.00E+03	
Butyl Formate, tert-	762-75-4		1	6.00E+03	2.99E+03	3.23E+09					
Butyl alcohol, sec-	78-92-2		1	4.03E+04	2.13E+04	3.23E+09					
Butylacetate	123-86-4		1	1.18E+04	1.79E+03	3.23E+09					
Butylate	2008-41-5		1	1.19E+05		3.23E+09					
Butylated hydroxyanisole	25013-16-5	0.1	1			3.23E+09	9.77E+04	3.42E+05	1.45E+10	7.60E+04	
Butylated hydroxytoluene	128-37-0	0.1	1			3.23E+09	5.43E+03	1.90E+04		4.22E+03	
Butylbenzene, n-	104-51-8		1	1.12E+04	1.07E+02	3.23E+09					
Butylbenzene, sec-	135-98-8		1	1.01E+04	1.45E+02	3.23E+09					
Butylbenzene, tert-	98-06-6		1	1.01E+04	1.83E+02	3.23E+09					
Butylchloride, t-	507-20-0		1	2.34E+03	1.33E+03	3.23E+09					
Butylphthalyl Butylglycolate	85-70-1	0.1	1			3.23E+09					
Butyltin	NA	0.1	1			3.23E+09					
Cacodylic Acid	75-60-5	0.1	1			3.23E+09					
Cadmium (Diet)	7440-43-9	0.001	1			3.23E+09			4.59E+05	4.59E+05	
Calcium	7440-70-2		1			3.23E+09					
Calcium Chlorate	10137-74-3		1			3.23E+09					
Calcium Chromate	13765-19-0		1			3.23E+09	1.33E+01		3.00E+03	1.32E+01	
Calcium Cyanide	592-01-8		1			3.23E+09					
Calcium pyrophosphate	7790-76-3		1			3.23E+09					
Caprolactam	105-60-2	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Bromomethane	74-83-9				9.38E+03		8.47E+02	7.76E+02	7.76E+02 nc
Bromophenol, p-	106-41-2								
Bromophenyl-phenyl phthalate, 4-	NA								
Bromophos	2104-96-3				3.35E+04			3.35E+04	3.35E+04 nc
Bromopyridine, 2-	109-04-6								
Bromotrichloromethane	75-62-7								
Bromoxynil	1689-84-5				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Bromoxynil Octanoate	1689-99-2				1.34E+05			1.34E+05	1.34E+05 max
Butadiene, 1,3-	106-99-0						2.10E+02	2.10E+02	3.68E+00 ca*
Butanediol, 2,3-	513-85-9								
Butanol	35296-72-1								
Butanol, N-	71-36-3				6.70E+05			6.70E+05	6.70E+05 sat
Butanone-2, 4-chloro-4,4-difluoro	NA								
Butyl Alcohol, t-	75-65-0								
Butyl Benzyl Phthlate	85-68-7				1.34E+06	4.69E+06		1.04E+06	8.00E+03 ca
Butyl Formate, tert-	762-75-4								
Butyl alcohol, sec-	78-92-2				1.34E+07		1.06E+08	1.19E+07	1.19E+07 sat
Butylacetate	123-86-4								
Butylate	2008-41-5				3.35E+05			3.35E+05	3.35E+05 max
Butylated hydroxyanisole	25013-16-5								7.60E+04 ca
Butylated hydroxytoluene	128-37-0				2.01E+06	7.03E+06		1.56E+06	4.22E+03 ca
Butylbenzene, n-	104-51-8				3.35E+05			3.35E+05	3.35E+05 sat
Butylbenzene, sec-	135-98-8				6.70E+05			6.70E+05	6.70E+05 sat
Butylbenzene, tert-	98-06-6				6.70E+05			6.70E+05	6.70E+05 sat
Butylchloride, t-	507-20-0								
Butylphthalyl Butylglycolate	85-70-1				6.70E+06	2.34E+07		5.21E+06	5.21E+06 max
Butyltin	NA								
Cacodylic Acid	75-60-5				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Cadmium (Diet)	7440-43-9				6.70E+03	5.86E+04	2.83E+06	6.00E+03	6.00E+03 nc
Calcium	7440-70-2								
Calcium Chlorate	10137-74-3								
Calcium Chromate	13765-19-0				1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Calcium Cyanide	592-01-8				6.70E+03			6.70E+03	6.70E+03 nc
Calcium pyrophosphate	7790-76-3				3.26E+08			3.26E+08	3.26E+08 max
Caprolactam	105-60-2				3.35E+06	1.17E+07	6.23E+08	2.60E+06	2.60E+06 max

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Captafol	2425-06-1	No	No	1.50E-01	U	4.30E-05	U	2.00E-03	U			1
Captan	133-06-2	No	No	2.30E-03	U	6.60E-07	U	1.30E-01	U			1
Carbaryl	63-25-2	No	No					1.00E-01	U			1
Carbazole	86-74-8	No	No									1
Carbofuran	1563-66-2	No	No					5.00E-03	U			1
Carbon Disulfide	75-15-0	No	Yes					1.00E-01	U	7.00E-01	U	1
Carbon Tetrachloride	56-23-5	No	Yes	7.00E-02	U	6.00E-06	U	4.00E-03	U	1.00E-01	U	1
Carbosulfan	55285-14-8	No	No					1.00E-02	U			1
Carboxin	5234-68-4	No	No					1.00E-01	U			1
Catechol	120-80-9	No	No									1
Ceric oxide	1306-38-3	No	No							9.00E-04	U	1
Cerium, Stable	7440-45-1	No	No									1
Chloral	75-87-6	No	Yes									1
Chloral Hydrate	302-17-0	No	Yes					1.00E-01	U			1
Chloramben	133-90-4	No	No					1.50E-02	U			1
Chloramine	127-65-1	No	No									1
Chloranil	118-75-2	No	No	4.03E-01	U							1
Chlorate (ClO3) as	14866-68-3	No	No									1
Chlordane	12789-03-6	No	Yes	3.50E-01	U	1.00E-04	U	5.00E-04	U	7.00E-04	U	1
Chlordane (alpha)	5103-71-9	No	Yes									1
Chlordane (gamma)	5103-74-2	No	Yes									1
Chlordecone (Kepone)	143-50-0	No	No	1.00E+01	U	4.60E-03	U	3.00E-04	U			1
Chlorfenvinphos	470-90-6	No	No					7.00E-04	U			1
Chloride	16887-00-6	No	No									1
Chlorimuron, Ethyl-	90982-32-4	No	No					2.00E-02	U			1
Chlorinated Hydrocarbons (total)	NA	No	No									1
Chlorine	7782-50-5	No	Yes					1.00E-01	U	1.45E-04	U	1
Chlorine Dioxide	10049-04-4	No	Yes					3.00E-02	U	2.00E-04	U	1
Chlorite	14998-27-7	No	No									1
Chlorite (Sodium Salt)	7758-19-2	No	No					3.00E-02	U			1
Chloro-1,1-difluoroethane, 1-	75-68-3	No	Yes							5.00E+01	U	1
Chloro-1,3-butadiene, 2-	126-99-8	No	Yes			3.00E-04	U	2.00E-02	U	2.00E-02	U	1
Chloro-2-methylaniline HCl, 4-	3165-93-3	No	No	4.60E-01	U							1
Chloro-2-methylaniline, 4-	95-69-2	No	No	1.00E-01	U	7.70E-05	U	3.00E-03	U			1
Chloro-2-methylphenol, 4-	1570-64-5	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Captafol	2425-06-1	0.1	1			3.23E+09	1.30E+02	4.56E+02	1.92E+07	1.01E+02	
Captan	133-06-2	0.1	1			3.23E+09	8.50E+03	2.97E+04	1.25E+09	6.61E+03	
Carbaryl	63-25-2	0.1	1			3.23E+09					
Carbazole	86-74-8	0.1	1			3.23E+09					
Carbofuran	1563-66-2	0.1	1			3.23E+09					
Carbon Disulfide	75-15-0		1	1.61E+03	7.38E+02	3.23E+09					
Carbon Tetrachloride	56-23-5		1	2.06E+03	4.58E+02	3.23E+09	2.79E+02		8.78E+01	6.68E+01	
Carbosulfan	55285-14-8	0.1	1			3.23E+09					
Carboxin	5234-68-4	0.1	1			3.23E+09					
Catechol	120-80-9	0.1	1			3.23E+09					
Ceric oxide	1306-38-3		1			3.23E+09					
Cerium, Stable	7440-45-1		1			3.23E+09					
Chloral	75-87-6		1	2.14E+05	3.39E+03	3.23E+09					
Chloral Hydrate	302-17-0		1	2.02E+05		3.23E+09					
Chloramben	133-90-4	0.1	1			3.23E+09					
Chloramine	127-65-1		1			3.23E+09					
Chloranil	118-75-2	0.1	1			3.23E+09	4.85E+01	1.70E+02		3.77E+01	
Chlorate (ClO3) as	14866-68-3		1			3.23E+09					
Chlordane	12789-03-6	0.04	1	1.49E+06		3.23E+09	5.58E+01	4.89E+02	3.81E+03	4.95E+01	
Chlordane (alpha)	5103-71-9		1	2.05E+06		3.23E+09					
Chlordane (gamma)	5103-74-2		1	2.05E+06		3.23E+09					
Chlordecone (Kepone)	143-50-0	0.1	1			3.23E+09	1.95E+00	6.84E+00	1.80E+05	1.52E+00	
Chlorfenvinphos	470-90-6	0.1	1			3.23E+09					
Chloride	16887-00-6		1			3.23E+09					
Chlorimuron, Ethyl-	90982-32-4	0.1	1			3.23E+09					
Chlorinated Hydrocarbons (total)	NA	0.1	1			3.23E+09					
Chlorine	7782-50-5		1	1.69E+03	2.78E+03	3.23E+09					
Chlorine Dioxide	10049-04-4		1			3.23E+09					
Chlorite	14998-27-7		1			3.23E+09					
Chlorite (Sodium Salt)	7758-19-2		1			3.23E+09					
Chloro-1,1-difluoroethane, 1-	75-68-3		1	1.42E+03	1.14E+03	3.23E+09					
Chloro-1,3-butadiene, 2-	126-99-8		1	1.49E+03	7.51E+02	3.23E+09			1.27E+00	1.27E+00	
Chloro-2-methylaniline HCl, 4-	3165-93-3	0.1	1			3.23E+09	4.25E+01	1.49E+02		3.30E+01	
Chloro-2-methylaniline, 4-	95-69-2	0.1	1			3.23E+09	1.95E+02	6.84E+02	1.07E+07	1.52E+02	
Chloro-2-methylphenol, 4-	1570-64-5	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Captafol	2425-06-1				1.34E+04	4.69E+04		1.04E+04	1.01E+02 ca
Captan	133-06-2				8.71E+05	3.05E+06		6.78E+05	6.61E+03 ca
Carbaryl	63-25-2				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Carbazole	86-74-8								
Carbofuran	1563-66-2				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Carbon Disulfide	75-15-0				6.70E+05		9.89E+04	8.61E+04	8.61E+04 sat
Carbon Tetrachloride	56-23-5				2.68E+04		1.81E+04	1.08E+04	6.68E+01 ca
Carbosulfan	55285-14-8				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Carboxin	5234-68-4				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Catechol	120-80-9								
Ceric oxide	1306-38-3						2.55E+08	2.55E+08	2.55E+08 max
Cerium, Stable	7440-45-1								
Chloral	75-87-6								
Chloral Hydrate	302-17-0				6.70E+05			6.70E+05	6.70E+05 max
Chloramben	133-90-4				1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Chloramine	127-65-1								
Chloranil	118-75-2								3.77E+01 ca
Chlorate (ClO3) as	14866-68-3								
Chlordane	12789-03-6				3.35E+03	2.93E+04	9.15E+04	2.91E+03	4.95E+01 ca*
Chlordane (alpha)	5103-71-9								
Chlordane (gamma)	5103-74-2								
Chlordecone (Kepone)	143-50-0				2.01E+03	7.03E+03		1.56E+03	1.52E+00 ca
Chlorfenvinphos	470-90-6				4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
Chloride	16887-00-6								
Chlorimuron, Ethyl-	90982-32-4				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Chlorinated Hydrocarbons (total)	NA								
Chlorine	7782-50-5				6.70E+05		2.14E+01	2.14E+01	2.14E+01 nc
Chlorine Dioxide	10049-04-4				2.01E+05		5.66E+07	2.00E+05	2.00E+05 max
Chlorite	14998-27-7								
Chlorite (Sodium Salt)	7758-19-2				2.01E+05			2.01E+05	2.01E+05 max
Chloro-1,1-difluoroethane, 1-	75-68-3						6.21E+06	6.21E+06	6.21E+06 sat
Chloro-1,3-butadiene, 2-	126-99-8				1.34E+05		2.61E+03	2.56E+03	1.27E+00 ca
Chloro-2-methylaniline HCl, 4-	3165-93-3								3.30E+01 ca
Chloro-2-methylaniline, 4-	95-69-2				2.01E+04	7.03E+04		1.56E+04	1.52E+02 ca
Chloro-2-methylphenol, 4-	1570-64-5								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Chloro-4-methylphenol	35421-08-0	No	No									1
Chloro-6-fluorophenol, 2-	2040-90-6	No	No									1
Chloroacetaldehyde, 2-	107-20-0	No	Yes	2.70E-01	U							1
Chloroacetamide	79-07-2	No	No									1
Chloroacetic Acid	79-11-8	No	No					2.00E-03	U			1
Chloroacetophenone, 2-	532-27-4	No	No							3.00E-05	U	1
Chloroaniline	27134-26-5	No	No									1
Chloroaniline, 3-	108-42-9	No	No									1
Chloroaniline, p-	106-47-8	No	No	2.00E-01	U			4.00E-03	U			1
Chlorobenzene	108-90-7	No	Yes					2.00E-02	U	5.00E-02	U	1
Chlorobenzene sulfonic acid, p-	98-66-8	No	No									1
Chlorobenzenes (total)	NA	No	No									1
Chlorobenzilate	510-15-6	No	No	1.10E-01	U	3.10E-05	U	2.00E-02	U			1
Chlorobenzoic Acid, p-	74-11-3	No	No					3.00E-02	U			1
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	No	Yes									1
Chlorobenzotrifluoride, 4-	98-56-6	No	Yes					3.00E-03	U	3.00E-01	U	1
Chlorobiphenyl, p-	2051-62-9	No	Yes									1
Chlorobutane, 1-	109-69-3	No	Yes					4.00E-02	U			1
Chlorobutane, 2-	78-86-4	No	Yes									1
Chlorocyclopentadiene	41851-50-7	No	Yes									1
Chlorodibromoethane	73506-94-2	No	No									1
Chlorodifluoromethane	75-45-6	No	Yes							5.00E+01	U	1
Chloroethanol, 2-	107-07-3	No	Yes					2.00E-02	U			1
Chloroethylvinyl ether, 2-	110-75-8	No	Yes									1
Chloroform	67-66-3	No	Yes	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1
Chloromethane	74-87-3	No	Yes							9.00E-02	U	1
Chloromethyl Methyl Ether	107-30-2	No	Yes	2.40E+00	U	6.90E-04	U					1
Chloronaphthalene, Beta-	91-58-7	No	Yes					8.00E-02	U			1
Chloronaphthalene, alpha-	90-13-1	No	Yes									1
Chloronitrobenzene, o-	88-73-3	No	No	3.00E-01	U			3.00E-03	U	1.00E-05	U	1
Chloronitrobenzene, p-	100-00-5	No	No	6.30E-03	U			1.00E-03	U	6.00E-04	U	1
Chlorophenol, 2-	95-57-8	No	Yes					5.00E-03	U			1
Chlorophenol, 3-	108-43-0	No	No									1
Chlorophenol, 4-	106-48-9	No	No									1
Chlorophenols (each)	NA	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Chloro-4-methylphenol	35421-08-0	0.1	1			3.23E+09					
Chloro-6-fluorophenol, 2-	2040-90-6	0.1	1			3.23E+09					
Chloroacetaldehyde, 2-	107-20-0		1	2.56E+04	2.83E+04	3.23E+09	7.24E+01			7.24E+01	
Chloroacetamide	79-07-2	0.1	1			3.23E+09					
Chloroacetic Acid	79-11-8	0.1	1			3.23E+09					
Chloroacetophenone, 2-	532-27-4	0.1	1			3.23E+09					
Chloroaniline	27134-26-5	0.1	1			3.23E+09					
Chloroaniline, 3-	108-42-9	0.1	1			3.23E+09					
Chloroaniline, p-	106-47-8	0.1	1			3.23E+09	9.77E+01	3.42E+02		7.60E+01	
Chlorobenzene	108-90-7		1	8.90E+03	7.61E+02	3.23E+09					
Chlorobenzene sulfonic acid, p-	98-66-8	0.1	1			3.23E+09					
Chlorobenzenes (total)	NA	0.1	1			3.23E+09					
Chlorobenzilate	510-15-6	0.1	1			3.23E+09	1.78E+02	6.22E+02	2.66E+07	1.38E+02	
Chlorobenzoic Acid, p-	74-11-3	0.1	1			3.23E+09					
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5		1	2.14E+05	9.07E+01	3.23E+09					
Chlorobenzotrifluoride, 4-	98-56-6		1	9.33E+03	1.17E+02	3.23E+09					
Chlorobiphenyl, p-	2051-62-9		1	1.78E+05		3.23E+09					
Chlorobutane, 1-	109-69-3		1	2.42E+03	7.29E+02	3.23E+09					
Chlorobutane, 2-	78-86-4		1	2.01E+03	6.51E+02	3.23E+09					
Chlorocyclopentadiene	41851-50-7		1	2.60E+03	9.88E+02	3.23E+09					
Chlorodibromoethane	73506-94-2	0.1	1			3.23E+09					
Chlorodifluoromethane	75-45-6		1	1.30E+03	1.68E+03	3.23E+09					
Chloroethanol, 2-	107-07-3		1	1.08E+05	1.11E+05	3.23E+09					
Chloroethylvinyl ether, 2-	110-75-8		1	2.21E+03	1.64E+03	3.23E+09					
Chloroform	67-66-3		1	3.62E+03	2.54E+03	3.23E+09	6.31E+02		4.03E+01	3.79E+01	
Chloromethane	74-87-3		1	1.62E+03	1.32E+03	3.23E+09					
Chloromethyl Methyl Ether	107-30-2		1	7.35E+03	2.58E+04	3.23E+09	8.14E+00		2.72E+00	2.04E+00	
Chloronaphthalene, Beta-	91-58-7	0.13	1	1.10E+05		3.23E+09					
Chloronaphthalene, alpha-	90-13-1		1	1.05E+05	2.66E+02	3.23E+09					
Chloronitrobenzene, o-	88-73-3	0.1	1			3.23E+09	6.52E+01	2.28E+02		5.07E+01	
Chloronitrobenzene, p-	100-00-5	0.1	1			3.23E+09	3.10E+03	1.09E+04		2.41E+03	
Chlorophenol, 2-	95-57-8		1	1.71E+05	2.19E+04	3.23E+09					
Chlorophenol, 3-	108-43-0	0.1	1			3.23E+09					
Chlorophenol, 4-	106-48-9	0.1	1			3.23E+09					
Chlorophenols (each)	NA	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Chloro-4-methylphenol	35421-08-0								
Chloro-6-fluorophenol, 2-	2040-90-6								
Chloroacetaldehyde, 2-	107-20-0								7.24E+01 ca
Chloroacetamide	79-07-2								
Chloroacetic Acid	79-11-8				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Chloroacetophenone, 2-	532-27-4						8.50E+06	8.50E+06	8.50E+06 max
Chloroaniline	27134-26-5								
Chloroaniline, 3-	108-42-9								
Chloroaniline, p-	106-47-8				2.68E+04	9.38E+04		2.08E+04	7.60E+01 ca
Chlorobenzene	108-90-7				1.34E+05		3.90E+04	3.02E+04	3.02E+04 sat
Chlorobenzene sulfonic acid, p-	98-66-8								
Chlorobenzenes (total)	NA								
Chlorobenzilate	510-15-6				1.34E+05	4.69E+05		1.04E+05	1.38E+02 ca
Chlorobenzoic Acid, p-	74-11-3				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5								
Chlorobenzotrifluoride, 4-	98-56-6				2.01E+04		2.45E+05	1.86E+04	1.86E+04 sat
Chlorobiphenyl, p-	2051-62-9								
Chlorobutane, 1-	109-69-3				2.68E+05			2.68E+05	2.68E+05 sat
Chlorobutane, 2-	78-86-4								
Chlorocyclopentadiene	41851-50-7								
Chlorodibromoethane	73506-94-2								
Chlorodifluoromethane	75-45-6						5.68E+06	5.68E+06	5.68E+06 sat
Chloroethanol, 2-	107-07-3				1.34E+05			1.34E+05	1.34E+05 sat
Chloroethylvinyl ether, 2-	110-75-8								
Chloroform	67-66-3				6.70E+04		3.10E+04	2.12E+04	3.79E+01 ca
Chloromethane	74-87-3						1.28E+04	1.28E+04	1.28E+04 sat
Chloromethyl Methyl Ether	107-30-2								2.04E+00 ca
Chloronaphthalene, Beta-	91-58-7				5.36E+05	1.44E+06		3.91E+05	3.91E+05 max
Chloronaphthalene, alpha-	90-13-1								
Chloronitrobenzene, o-	88-73-3				2.01E+04	7.03E+04	2.83E+06	1.56E+04	5.07E+01 ca
Chloronitrobenzene, p-	100-00-5				6.70E+03	2.34E+04	1.70E+08	5.21E+03	2.41E+03 ca**
Chlorophenol, 2-	95-57-8				3.35E+04			3.35E+04	3.35E+04 sat
Chlorophenol, 3-	108-43-0								
Chlorophenol, 4-	106-48-9								
Chlorophenols (each)	NA								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Chlorophenols (total)	NA	No	No									1
Chlorophenyl Methyl Sulfide, p-	123-09-1	No	Yes									1
Chlorophenyl Methyl Sulfoxide	934-73-6	No	No									1
Chlorophenyl phenyl ether, 4-	7005-72-3	No	Yes									1
Chloropicrin	76-06-2	No	Yes							4.00E-04	U	1
Chloropropane, 2-	75-29-6	No	Yes									1
Chlorothalonil	1897-45-6	No	No	3.10E-03	U	8.90E-07	U	1.50E-02	U			1
Chlorotoluene, o-	95-49-8	No	Yes					2.00E-02	U			1
Chlorotoluene, p-	106-43-4	No	Yes					2.00E-02	U			1
Chlorozotocin	54749-90-5	No	No	2.40E+02	U	6.90E-02	U					1
Chlorpropham	101-21-3	No	No					2.00E-01	U			1
Chlorpyrifos	2921-88-2	No	No					1.00E-03	U			1
Chlorpyrifos Methyl	5598-13-0	No	No					1.00E-02	U			1
Chlorsulfuron	64902-72-3	No	No					5.00E-02	U			1
Chlorthiophos	60238-56-4	No	No					8.00E-04	U			1
Chromium(III), Insoluble Salts	16065-83-1	No	No					1.50E+00	U			0.013
Chromium(VI)	18540-29-9	Yes	No	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025
Chromium, Total	7440-47-3	No	No									0.013
Chrysene	218-01-9	Yes	No	7.30E-03	U	1.10E-05	U					1
Cobalt	7440-48-4	No	No			9.00E-03	U	3.00E-04	U	6.00E-06	U	1
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	No	No									1
Copper	7440-50-8	No	No					4.00E-02	U			1
Copper Cyanide	544-92-3	No	No					5.00E-03	U			1
Coronene	191-07-1	No	No									1
Creosote	8001-58-9	No	No									1
Cresol, m-	108-39-4	No	No					5.00E-02	U	6.00E-01	U	1
Cresol, o-	95-48-7	No	No					5.00E-02	U	6.00E-01	U	1
Cresol, p-	106-44-5	No	No					1.00E-01	U	6.00E-01	U	1
Cresol, p-chloro-m-	59-50-7	No	No					1.00E-01	U			1
Cresols	1319-77-3	No	No					1.00E-01	U	6.00E-01	U	1
Crotonaldehyde	4170-30-3	No	Yes									1
Crotonaldehyde, trans-	123-73-9	No	Yes	1.90E+00	U			1.00E-03	U			1
Cumene	98-82-8	No	Yes					1.00E-01	U	4.00E-01	U	1
Cupferron	135-20-6	No	No	2.20E-01	U	6.30E-05	U					1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Chlorophenols (total)	NA	0.1	1			3.23E+09					
Chlorophenyl Methyl Sulfide, p-	123-09-1		1	6.97E+04	2.73E+02	3.23E+09					
Chlorophenyl Methyl Sulfoxide	934-73-6	0.1	1			3.23E+09					
Chlorophenyl phenyl ether, 4-	7005-72-3		1	1.83E+05		3.23E+09					
Chloropicrin	76-06-2		1	6.46E+03	6.17E+02	3.23E+09					
Chloropropane, 2-	75-29-6		1	1.79E+03	1.32E+03	3.23E+09					
Chlorothalonil	1897-45-6	0.1	1			3.23E+09	6.31E+03	2.21E+04	9.28E+08	4.90E+03	
Chlorotoluene, o-	95-49-8		1	1.12E+04	9.07E+02	3.23E+09					
Chlorotoluene, p-	106-43-4		1	1.01E+04	2.53E+02	3.23E+09					
Chlorozotocin	54749-90-5	0.1	1			3.23E+09	8.14E-02	2.85E-01	1.20E+04	6.33E-02	
Chlorpropham	101-21-3	0.1	1			3.23E+09					
Chlorpyrifos	2921-88-2	0.1	1			3.23E+09					
Chlorpyrifos Methyl	5598-13-0	0.1	1			3.23E+09					
Chlorsulfuron	64902-72-3	0.1	1			3.23E+09					
Chlorthiophos	60238-56-4	0.1	1			3.23E+09					
Chromium(III), Insoluble Salts	16065-83-1		1			3.23E+09					
Chromium(VI)	18540-29-9		1			3.23E+09	1.33E+01		5.36E+03	1.33E+01	
Chromium, Total	7440-47-3		1			3.23E+09					
Chrysene	218-01-9	0.13	1			3.23E+09	9.10E+02	4.74E+03	4.10E+07	7.63E+02	
Cobalt	7440-48-4		1			3.23E+09			9.18E+04	9.18E+04	
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	0.1	1			3.23E+09					
Copper	7440-50-8		1			3.23E+09					
Copper Cyanide	544-92-3		1			3.23E+09					
Coronene	191-07-1	0.13	1			3.23E+09					
Creosote	8001-58-9	0.1	1			3.23E+09					
Cresol, m-	108-39-4	0.1	1			3.23E+09					
Cresol, o-	95-48-7	0.1	1			3.23E+09					
Cresol, p-	106-44-5	0.1	1			3.23E+09					
Cresol, p-chloro-m-	59-50-7	0.1	1			3.23E+09					
Cresols	1319-77-3	0.1	1			3.23E+09					
Crotonaldehyde	4170-30-3		1	2.61E+04	2.00E+04	3.23E+09					
Crotonaldehyde, trans-	123-73-9		1	2.61E+04	1.66E+04	3.23E+09	1.03E+01			1.03E+01	
Cumene	98-82-8		1	8.56E+03	2.68E+02	3.23E+09					
Cupferron	135-20-6	0.1	1			3.23E+09	8.89E+01	3.11E+02	1.31E+07	6.91E+01	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Chlorophenols (total)	NA								
Chlorophenyl Methyl Sulfide, p-	123-09-1								
Chlorophenyl Methyl Sulfoxide	934-73-6								
Chlorophenyl phenyl ether, 4-	7005-72-3								
Chloropicrin	76-06-2						2.26E+02	2.26E+02	2.26E+02 nc
Chloropropane, 2-	75-29-6								
Chlorothalonil	1897-45-6				1.01E+05	3.52E+05		7.82E+04	4.90E+03 ca*
Chlorotoluene, o-	95-49-8				1.34E+05			1.34E+05	1.34E+05 sat
Chlorotoluene, p-	106-43-4				1.34E+05			1.34E+05	1.34E+05 sat
Chlorozotocin	54749-90-5								6.33E-02 ca
Chlorpropham	101-21-3				1.34E+06	4.69E+06		1.04E+06	1.04E+06 max
Chlorpyrifos	2921-88-2				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Chlorpyrifos Methyl	5598-13-0				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Chlorsulfuron	64902-72-3				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Chlorthiophos	60238-56-4				5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Chromium(III), Insoluble Salts	16065-83-1				1.01E+07			1.01E+07	1.01E+07 max
Chromium(VI)	18540-29-9				2.01E+04		2.83E+07	2.01E+04	1.33E+01 ca
Chromium, Total	7440-47-3								
Chrysene	218-01-9								7.63E+02 ca
Cobalt	7440-48-4				2.01E+03		1.70E+06	2.01E+03	2.01E+03 nc
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA								
Copper	7440-50-8				2.68E+05			2.68E+05	2.68E+05 max
Copper Cyanide	544-92-3				3.35E+04			3.35E+04	3.35E+04 nc
Coronene	191-07-1								
Creosote	8001-58-9								
Cresol, m-	108-39-4				3.35E+05	1.17E+06	1.70E+11	2.61E+05	2.61E+05 max
Cresol, o-	95-48-7				3.35E+05	1.17E+06	1.70E+11	2.61E+05	2.61E+05 max
Cresol, p-	106-44-5				6.70E+05	2.34E+06	1.70E+11	5.21E+05	5.21E+05 max
Cresol, p-chloro-m-	59-50-7				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Cresols	1319-77-3				6.70E+05	2.34E+06	1.70E+11	5.21E+05	5.21E+05 max
Crotonaldehyde	4170-30-3								
Crotonaldehyde, trans-	123-73-9				6.70E+03			6.70E+03	1.03E+01 ca
Cumene	98-82-8				6.70E+05		3.00E+05	2.07E+05	2.07E+05 sat
Cupferron	135-20-6								6.91E+01 ca

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Cyanazine	21725-46-2	No	No	8.40E-01	U			2.00E-03	U			1
Cyanide (CN-)	57-12-5	No	Yes					6.00E-04	U	8.00E-04	U	1
Cyanide (total complex)	NA	No	No									1
Cyanogen	460-19-5	No	Yes					1.00E-03	U			1
Cyanogen Bromide	506-68-3	No	Yes					9.00E-02	U			1
Cyanogen Chloride	506-77-4	No	Yes					5.00E-02	U			1
Cyclohexane	110-82-7	No	Yes							6.00E+00	U	1
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	No	No	2.30E-02	U							1
Cyclohexanone	108-94-1	No	Yes					5.00E+00	U	7.00E-01	U	1
Cyclohexene	110-83-8	No	Yes					5.00E-03	U	1.00E+00	U	1
Cyclohexylamine	108-91-8	No	Yes					2.00E-01	U			1
Cyclopentadiene	542-92-7	No	Yes									1
Cyhalothrin/karate	68085-85-8	No	No					5.00E-03	U			1
Cypermethrin	52315-07-8	No	No					1.00E-02	U			1
Cyromazine	66215-27-8	No	No					7.50E-03	U			1
DDD	72-54-8	No	No	2.40E-01	U	6.90E-05	U					1
DDD, o,p'-	53-19-0	No	No									1
DDE, p,p'-	72-55-9	No	Yes	3.40E-01	U	9.70E-05	U					1
DDT	50-29-3	No	No	3.40E-01	U	9.70E-05	U	5.00E-04	U			1
DDT, o,p'-	789-02-6	No	No									1
DDT/DDE/DDD (total)	NA	No	No									1
Dacthal	1861-32-1	No	No					1.00E-02	U			1
Dalapon	75-99-0	No	No					3.00E-02	U			1
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	No	No	7.00E-04	U			7.00E-03	U			1
Decane	124-18-5	No	Yes									1
Decanol, n-	112-30-1	No	Yes									1
Deltamethrin	52918-63-5	No	No									1
Demeton	8065-48-3	No	No					4.00E-05	U			1
Di(2-ethylhexyl)adipate	103-23-1	No	No	1.20E-03	U			6.00E-01	U			1
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	No	Yes									1
Di-n-butyltin bis(methyl maleate)	15546-11-9	No	No									1
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	No	No									1
Di-n-butyltin dilaurate	77-58-7	No	Yes									1
Di-n-butyltin distearate	5847-55-2	No	Yes									1
Di-n-hexylphthalate	84-75-3	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Cyanazine	21725-46-2	0.1	1			3.23E+09	2.33E+01	8.14E+01		1.81E+01	
Cyanide (CN-)	57-12-5		1	6.42E+04	1.00E+07	3.23E+09					
Cyanide (total complex)	NA		1			3.23E+09					
Cyanogen	460-19-5		1			3.23E+09					
Cyanogen Bromide	506-68-3		1			3.23E+09					
Cyanogen Chloride	506-77-4		1			3.23E+09					
Cyclohexane	110-82-7		1	1.44E+03	1.18E+02	3.23E+09					
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	0.1	1			3.23E+09	8.50E+02	2.97E+03		6.61E+02	
Cyclohexanone	108-94-1		1	5.75E+04	5.11E+03	3.23E+09					
Cyclohexene	110-83-8		1	2.02E+03	2.83E+02	3.23E+09					
Cyclohexylamine	108-91-8		1	1.03E+05	2.93E+05	3.23E+09					
Cyclopentadiene	542-92-7		1	2.05E+03	1.34E+03	3.23E+09					
Cyhalothrin/karate	68085-85-8	0.1	1			3.23E+09					
Cypermethrin	52315-07-8	0.1	1			3.23E+09					
Cyromazine	66215-27-8	0.1	1			3.23E+09					
DDD	72-54-8	0.1	1			3.23E+09	8.14E+01	2.85E+02	1.20E+07	6.33E+01	
DDD, o,p'-	53-19-0	0.1	1			3.23E+09					
DDE, p,p'-	72-55-9		1	2.91E+06		3.23E+09	5.75E+01		7.65E+03	5.71E+01	
DDT	50-29-3	0.03	1			3.23E+09	5.75E+01	6.71E+02	8.52E+06	5.30E+01	
DDT, o,p'-	789-02-6	0.1	1			3.23E+09					
DDT/DDE/DDD (total)	NA	0.1	1			3.23E+09					
Dacthal	1861-32-1	0.1	1			3.23E+09					
Dalapon	75-99-0	0.1	1			3.23E+09					
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	0.1	1			3.23E+09	2.79E+04	9.77E+04		2.17E+04	
Decane	124-18-5		1	1.56E+03	2.53E+00	3.23E+09					
Decanol, n-	112-30-1		1	8.71E+04	3.19E+01	3.23E+09					
Deltamethrin	52918-63-5	0.1	1			3.23E+09					
Demeton	8065-48-3	0.1	1			3.23E+09					
Di(2-ethylhexyl)adipate	103-23-1	0.1	1			3.23E+09	1.63E+04	5.70E+04		1.27E+04	
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4		1	1.29E+05		3.23E+09					
Di-n-butyltin bis(methyl maleate)	15546-11-9	0.1	1			3.23E+09					
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	0.1	1			3.23E+09					
Di-n-butyltin dilaurate	77-58-7		1	4.40E+05		3.23E+09					
Di-n-butyltin distearate	5847-55-2		1	2.33E+06		3.23E+09					
Di-n-hexylphthalate	84-75-3		1	1.33E+06	3.85E+00	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Cyanazine	21725-46-2				1.34E+04	4.69E+04		1.04E+04	1.81E+01 ca
Cyanide (CN-)	57-12-5				4.02E+03		4.50E+03	2.12E+03	2.12E+03 nc
Cyanide (total complex)	NA								
Cyanogen	460-19-5				6.70E+03			6.70E+03	6.70E+03 nc
Cyanogen Bromide	506-68-3				6.03E+05			6.03E+05	6.03E+05 max
Cyanogen Chloride	506-77-4				3.35E+05			3.35E+05	3.35E+05 max
Cyclohexane	110-82-7						7.56E+05	7.56E+05	7.56E+05 sat
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3								6.61E+02 ca
Cyclohexanone	108-94-1				3.35E+07		3.53E+06	3.19E+06	3.19E+06 sat
Cyclohexene	110-83-8				3.35E+04		1.77E+05	2.82E+04	2.82E+04 sat
Cyclohexylamine	108-91-8				1.34E+06			1.34E+06	1.34E+06 sat
Cyclopentadiene	542-92-7								
Cyhalothrin/karate	68085-85-8				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Cypermethrin	52315-07-8				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Cyromazine	66215-27-8				5.03E+04	1.76E+05		3.91E+04	3.91E+04 nc
DDD	72-54-8								6.33E+01 ca
DDD, o,p'-	53-19-0								
DDE, p,p'-	72-55-9								5.71E+01 ca
DDT	50-29-3				3.35E+03	3.91E+04		3.09E+03	5.30E+01 ca*
DDT, o,p'-	789-02-6								
DDT/DDE/DDD (total)	NA								
Dacthal	1861-32-1				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Dalapon	75-99-0				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'-(BDE-209)	1163-19-5				4.69E+04	1.64E+05		3.65E+04	2.17E+04 ca**
Decane	124-18-5								
Decanol, n-	112-30-1								
Deltamethrin	52918-63-5								
Demeton	8065-48-3				2.68E+02	9.38E+02		2.08E+02	2.08E+02 nc
Di(2-ethylhexyl)adipate	103-23-1				4.02E+06	1.41E+07		3.13E+06	1.27E+04 ca
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4								
Di-n-butyltin bis(methyl maleate)	15546-11-9								
Di-n-butyltin bis(n-butyl maleate)	15546-16-4								
Di-n-butyltin dilaurate	77-58-7								
Di-n-butyltin distearate	5847-55-2								
Di-n-hexylphthalate	84-75-3								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Diallate	2303-16-4	No	No	6.10E-02	U							1
Diammonium phosphate	7783-28-0	No	No					4.86E+01	U			1
Diazinon	333-41-5	No	No					7.00E-04	U			1
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	U	1.20E-03	U					1
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	U	1.10E-03	U					1
Dibenzofuran	132-64-9	No	Yes					1.00E-03	U			1
Dibenzothiophene	132-65-0	No	Yes					1.00E-02	U			1
Dibromo-3-chloropropane, 1,2-	96-12-8	Yes	Yes	8.00E-01	U	6.00E-03	U	2.00E-04	U	2.00E-04	U	1
Dibromoacetic acid	631-64-1	No	No									1
Dibromobenzene, 1,3-	108-36-1	No	Yes					4.00E-04	U			1
Dibromobenzene, 1,4-	106-37-6	No	Yes					1.00E-02	U			1
Dibromochloromethane	124-48-1	No	Yes	8.40E-02	U	2.70E-05	U	2.00E-02	U			1
Dibromodichloromethane	594-18-3	No	Yes									1
Dibromodiphenyl Ether, p,p'-	2050-47-7	No	Yes									1
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	U	6.00E-04	U	9.00E-03	U	9.00E-03	U	1
Dibromomethane (Methylene Bromide)	74-95-3	No	Yes					1.00E-02	U	4.00E-03	U	1
Dibutoxy di-n-butyltin	3349-36-8	No	Yes									1
Dibutyl Phthalate	84-74-2	No	No					1.00E-01	U			1
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	No	No									1
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	No	Yes									1
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	No	No									1
Dibutylbis(palmitoyloxy)stannane	13323-63-2	No	Yes									1
Dibutyltin Compounds	NA	No	No					3.00E-04	U			1
Dibutyltin diacetate	1067-33-0	No	Yes									1
Dibutyltin dichloride	683-18-1	No	Yes									1
Dibutyltin oxide	818-08-6	No	Yes									1
Dicalcium phosphate	7757-93-9	No	No					4.86E+01	U			1
Dicamba	1918-00-9	No	No					3.00E-02	U			1
Dichloro-2-butene, 1,4-	764-41-0	No	Yes			4.20E-03	U					1
Dichloro-2-butene, cis-1,4-	1476-11-5	No	Yes			4.20E-03	U					1
Dichloro-2-butene, trans-1,4-	110-57-6	No	Yes			4.20E-03	U					1
Dichloroacetic Acid	79-43-6	No	No	5.00E-02	U			4.00E-03	U			1
Dichloroaniline, 2,4-	554-00-7	No	No									1
Dichloroaniline, 3,4-	95-76-1	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Diallate	2303-16-4	0.1	1			3.23E+09	3.20E+02	1.12E+03		2.49E+02	
Diammonium phosphate	7783-28-0		1			3.23E+09					
Diazinon	333-41-5	0.1	1			3.23E+09					
Dibenz[a,h]anthracene	53-70-3	0.13	1			3.23E+09	9.10E-01	4.74E+00	3.75E+05	7.63E-01	
Dibenzo(a,e)pyrene	192-65-4	0.13	1			3.23E+09	1.63E+00	4.38E+00	7.51E+05	1.19E+00	
Dibenzofuran	132-64-9	0.03	1	2.70E+05		3.23E+09					
Dibenzothiophene	132-65-0		1	7.24E+05		3.23E+09					
Dibromo-3-chloropropane, 1,2-	96-12-8		1	4.42E+04	9.80E+02	3.23E+09	8.30E+00		1.03E+00	9.13E-01	
Dibromoacetic acid	631-64-1	0.1	1			3.23E+09					
Dibromobenzene, 1,3-	108-36-1		1	2.66E+04	1.59E+02	3.23E+09					
Dibromobenzene, 1,4-	106-37-6		1	3.03E+04		3.23E+09					
Dibromochloromethane	124-48-1		1	1.10E+04	8.02E+02	3.23E+09	2.33E+02		1.04E+02	7.18E+01	
Dibromodichloromethane	594-18-3		1	3.20E+04		3.23E+09					
Dibromodiphenyl Ether, p,p'-	2050-47-7		1	5.22E+05		3.23E+09					
Dibromoethane, 1,2-	106-93-4		1	1.19E+04	1.34E+03	3.23E+09	9.77E+00		5.08E+00	3.34E+00	
Dibromomethane (Methylene Bromide)	74-95-3		1	7.79E+03	2.82E+03	3.23E+09					
Dibutoxy di-n-butyltin	3349-36-8		1	8.25E+04		3.23E+09					
Dibutyl Phthalate	84-74-2	0.1	1			3.23E+09					
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	0.1	1			3.23E+09					
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2		1	3.40E+06		3.23E+09					
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	0.1	1			3.23E+09					
Dibutylbis(palmitoyloxy)stannane	13323-63-2		1	1.20E+06		3.23E+09					
Dibutyltin Compounds	NA	0.1	1			3.23E+09					
Dibutyltin diacetate	1067-33-0		1	1.75E+04	1.86E+00	3.23E+09					
Dibutyltin dichloride	683-18-1		1	3.93E+04		3.23E+09					
Dibutyltin oxide	818-08-6		1			3.23E+09					
Dicalcium phosphate	7757-93-9		1			3.23E+09					
Dicamba	1918-00-9	0.1	1			3.23E+09					
Dichloro-2-butene, 1,4-	764-41-0		1	1.54E+04	5.20E+02	3.23E+09			9.35E-01	9.35E-01	
Dichloro-2-butene, cis-1,4-	1476-11-5		1	1.54E+04	5.20E+02	3.23E+09			9.35E-01	9.35E-01	
Dichloro-2-butene, trans-1,4-	110-57-6		1	1.54E+04	7.63E+02	3.23E+09			9.36E-01	9.36E-01	
Dichloroacetic Acid	79-43-6	0.1	1			3.23E+09	3.91E+02	1.37E+03		3.04E+02	
Dichloroaniline, 2,4-	554-00-7	0.1	1			3.23E+09					
Dichloroaniline, 3,4-	95-76-1		1	1.39E+05		3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Diallate	2303-16-4								2.49E+02 ca
Diammonium phosphate	7783-28-0				3.26E+08			3.26E+08	3.26E+08 max
Diazinon	333-41-5				4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
Dibenz[a,h]anthracene	53-70-3								7.63E-01 ca
Dibenzo(a,e)pyrene	192-65-4								1.19E+00 ca
Dibenzofuran	132-64-9				6.70E+03	7.82E+04		6.17E+03	6.17E+03 nc
Dibenzothiophene	132-65-0				6.70E+04			6.70E+04	6.70E+04 nc
Dibromo-3-chloropropane, 1,2-	96-12-8				1.34E+03		7.74E+02	4.91E+02	9.13E-01 ca
Dibromoacetic acid	631-64-1								
Dibromobenzene, 1,3-	108-36-1				2.68E+03			2.68E+03	2.68E+03 sat
Dibromobenzene, 1,4-	106-37-6				6.70E+04			6.70E+04	6.70E+04 nc
Dibromochloromethane	124-48-1				1.34E+05			1.34E+05	7.18E+01 ca
Dibromodichloromethane	594-18-3								
Dibromodiphenyl Ether, p,p'-	2050-47-7								
Dibromoethane, 1,2-	106-93-4				6.03E+04		9.40E+03	8.13E+03	3.34E+00 ca
Dibromomethane (Methylene Bromide)	74-95-3				6.70E+04		2.73E+03	2.62E+03	2.62E+03 nc
Dibutoxy di-n-butyltin	3349-36-8								
Dibutyl Phthalate	84-74-2				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5								
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2								
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3								
Dibutylbis(palmitoyloxy)stannane	13323-63-2								
Dibutyltin Compounds	NA				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Dibutyltin diacetate	1067-33-0								
Dibutyltin dichloride	683-18-1								
Dibutyltin oxide	818-08-6								
Dicalcium phosphate	7757-93-9				3.26E+08			3.26E+08	3.26E+08 max
Dicamba	1918-00-9				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Dichloro-2-butene, 1,4-	764-41-0								9.35E-01 ca
Dichloro-2-butene, cis-1,4-	1476-11-5								9.35E-01 ca
Dichloro-2-butene, trans-1,4-	110-57-6								9.36E-01 ca
Dichloroacetic Acid	79-43-6				2.68E+04	9.38E+04		2.08E+04	3.04E+02 ca*
Dichloroaniline, 2,4-	554-00-7								
Dichloroaniline, 3,4-	95-76-1								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dichlorobenzene	25321-22-6	No	Yes									1
Dichlorobenzene, 1,2-	95-50-1	No	Yes					9.00E-02	U	2.00E-01	U	1
Dichlorobenzene, 1,3-	541-73-1	No	Yes									1
Dichlorobenzene, 1,4-	106-46-7	No	Yes	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1
Dichlorobenzidine, 3,3'-	91-94-1	No	No	4.50E-01	U	3.40E-04	U					1
Dichlorobenzoic acid, -3,5	51-36-5	No	No									1
Dichlorobenzophenone, 4,4'-	90-98-2	No	No					9.00E-03	U			1
Dichlorobenzotrifluoride, 3,4-	328-84-7	No	Yes									1
Dichlorodifluoromethane	75-71-8	No	Yes					2.00E-01	U	1.00E-01	U	1
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	No	Yes									1
Dichloroethane, 1,1-	75-34-3	No	Yes	5.70E-03	U	1.60E-06	U	2.00E-01	U			1
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1
Dichloroethylene, 1,1-	75-35-4	No	Yes					5.00E-02	U	2.00E-01	U	1
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes					2.00E-03	U			1
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes					2.00E-02	U			1
Dichlorophenol, 2,3-	576-24-9	No	No									1
Dichlorophenol, 2,4-	120-83-2	No	No					3.00E-03	U			1
Dichlorophenol, 2,5-	583-78-8	Yes	No									1
Dichlorophenol, 2,6-	87-65-0	No	No									1
Dichlorophenol, 3,4-	95-77-2	No	No									1
Dichlorophenols (total)	NA	No	No									1
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	No	No					1.00E-02	U			1
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	No	No					8.00E-03	U			1
Dichloropropane, 1,2-	78-87-5	No	Yes	3.60E-02	U	1.00E-05	U	9.00E-02	U	4.00E-03	U	1
Dichloropropane, 1,3-	142-28-9	No	Yes					2.00E-02	U			1
Dichloropropane, 2,2-	594-20-7	No	Yes									1
Dichloropropanol, 2,3-	616-23-9	No	No					3.00E-03	U			1
Dichloropropene, 1,3-	542-75-6	No	Yes	1.00E-01	U	4.00E-06	U	3.00E-02	U	2.00E-02	U	1
Dichloropropene, 2,3-	78-88-6	No	Yes									1
Dichloropropene, cis-1,3-	10061-01-5	No	Yes									1
Dichloropropene, trans-1,3-	10061-02-6	No	Yes									1
Dichlorvos	62-73-7	No	No	2.90E-01	U	8.30E-05	U	5.00E-04	U	5.00E-04	U	1
Diclofop-methyl	51338-27-3	No	No									1
Dicofol	115-32-2	No	No									1
Dicyclohexylamine	101-83-7	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Dichlorobenzene	25321-22-6		1	1.61E+04	1.93E+02	3.23E+09					
Dichlorobenzene, 1,2-	95-50-1		1	1.61E+04	3.76E+02	3.23E+09					
Dichlorobenzene, 1,3-	541-73-1		1	1.37E+04	2.96E+02	3.23E+09					
Dichlorobenzene, 1,4-	106-46-7		1	1.44E+04		3.23E+09	3.62E+03		3.35E+02	3.06E+02	
Dichlorobenzidine, 3,3'-	91-94-1	0.1	1			3.23E+09	4.34E+01	1.52E+02	2.43E+06	3.38E+01	
Dichlorobenzoic acid, -3,5	51-36-5	0.1	1			3.23E+09					
Dichlorobenzophenone, 4,4'-	90-98-2	0.1	1			3.23E+09					
Dichlorobenzotrifluoride, 3,4-	328-84-7		1	1.59E+04	4.57E+01	3.23E+09					
Dichlorodifluoromethane	75-71-8		1	1.16E+03	8.44E+02	3.23E+09					
Dichlorodiisopropyl ether, 2,2'-	39638-32-9		1	1.81E+04	2.35E+02	3.23E+09					
Dichloroethane, 1,1-	75-34-3		1	2.87E+03	1.69E+03	3.23E+09	3.43E+03		4.59E+02	4.05E+02	
Dichloroethane, 1,2-	107-06-2		1	6.31E+03	2.98E+03	3.23E+09	2.15E+02		6.20E+01	4.81E+01	
Dichloroethylene, 1,1-	75-35-4		1	1.59E+03	1.19E+03	3.23E+09					
Dichloroethylene, 1,2-cis-	156-59-2		1	3.45E+03	2.37E+03	3.23E+09					
Dichloroethylene, 1,2-trans-	156-60-5		1	3.46E+03	1.67E+03	3.23E+09					
Dichlorophenol, 2,3-	576-24-9	0.1	1			3.23E+09					
Dichlorophenol, 2,4-	120-83-2	0.1	1			3.23E+09					
Dichlorophenol, 2,5-	583-78-8	0.1	1			3.23E+09					
Dichlorophenol, 2,6-	87-65-0	0.1	1			3.23E+09					
Dichlorophenol, 3,4-	95-77-2	0.1	1			3.23E+09					
Dichlorophenols (total)	NA	0.1	1			3.23E+09					
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	0.05	1			3.23E+09					
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	0.1	1			3.23E+09					
Dichloropropane, 1,2-	78-87-5		1	5.23E+03	1.36E+03	3.23E+09	5.43E+02		1.34E+02	1.07E+02	
Dichloropropane, 1,3-	142-28-9		1	9.33E+03	1.49E+03	3.23E+09					
Dichloropropane, 2,2-	594-20-7		1	2.21E+03	5.27E+02	3.23E+09					
Dichloropropanol, 2,3-	616-23-9	0.1	1			3.23E+09					
Dichloropropene, 1,3-	542-75-6		1	4.91E+03	1.57E+03	3.23E+09	1.95E+02		3.13E+02	1.20E+02	
Dichloropropene, 2,3-	78-88-6		1	4.27E+03	1.07E+03	3.23E+09					
Dichloropropene, cis-1,3-	10061-01-5		1	4.90E+03	1.22E+03	3.23E+09					
Dichloropropene, trans-1,3-	10061-02-6		1	4.91E+03	1.57E+03	3.23E+09					
Dichlorvos	62-73-7	0.1	1			3.23E+09	6.74E+01	2.36E+02	9.95E+06	5.24E+01	
Diclofop-methyl	51338-27-3	0.1	1			3.23E+09					
Dicofol	115-32-2	0.1	1			3.23E+09					
Dicyclohexylamine	101-83-7		1	8.62E+04	2.16E+03	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dichlorobenzene	25321-22-6								
Dichlorobenzene, 1,2-	95-50-1				6.03E+05		2.82E+05	1.92E+05	1.92E+05 sat
Dichlorobenzene, 1,3-	541-73-1								
Dichlorobenzene, 1,4-	106-46-7				4.69E+05		1.01E+06	3.20E+05	3.06E+02 ca
Dichlorobenzidine, 3,3'-	91-94-1								3.38E+01 ca
Dichlorobenzoic acid, -3,5	51-36-5								
Dichlorobenzophenone, 4,4'-	90-98-2				6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Dichlorobenzotrifluoride, 3,4-	328-84-7								
Dichlorodifluoromethane	75-71-8				1.34E+06		1.02E+04	1.01E+04	1.01E+04 sat
Dichlorodiisopropyl ether, 2,2'-	39638-32-9								
Dichloroethane, 1,1-	75-34-3				1.34E+06			1.34E+06	4.05E+02 ca
Dichloroethane, 1,2-	107-06-2				4.02E+04		3.87E+03	3.53E+03	4.81E+01 ca*
Dichloroethylene, 1,1-	75-35-4				3.35E+05		2.79E+04	2.58E+04	2.58E+04 sat
Dichloroethylene, 1,2-cis-	156-59-2				1.34E+04			1.34E+04	1.34E+04 sat
Dichloroethylene, 1,2-trans-	156-60-5				1.34E+05			1.34E+05	1.34E+05 sat
Dichlorophenol, 2,3-	576-24-9								
Dichlorophenol, 2,4-	120-83-2				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Dichlorophenol, 2,5-	583-78-8								
Dichlorophenol, 2,6-	87-65-0								
Dichlorophenol, 3,4-	95-77-2								
Dichlorophenols (total)	NA								
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7				6.70E+04	4.69E+05		5.86E+04	5.86E+04 nc
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6				5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Dichloropropane, 1,2-	78-87-5				6.03E+05		1.83E+03	1.83E+03	1.07E+02 ca*
Dichloropropane, 1,3-	142-28-9				1.34E+05			1.34E+05	1.34E+05 sat
Dichloropropane, 2,2-	594-20-7								
Dichloropropanol, 2,3-	616-23-9				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Dichloropropene, 1,3-	542-75-6				2.01E+05		8.59E+03	8.24E+03	1.20E+02 ca*
Dichloropropene, 2,3-	78-88-6								
Dichloropropene, cis-1,3-	10061-01-5								
Dichloropropene, trans-1,3-	10061-02-6								
Dichlorvos	62-73-7				3.35E+03	1.17E+04	1.42E+08	2.61E+03	5.24E+01 ca*
Diclofop-methyl	51338-27-3								
Dicofol	115-32-2								
Dicyclohexylamine	101-83-7								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dicyclopentadiene	77-73-6	No	Yes					8.00E-02	U	3.00E-04	U	1
Didecyl dimethyl ammonium chloride	7173-51-5	No	No									1
Dieldrin	60-57-1	No	No	1.60E+01	U	4.60E-03	U	5.00E-05	U			1
Diepoxybutane	1464-53-5	No	Yes									1
Diethanolamine	111-42-2	No	No					2.00E-03	U	2.00E-04	U	1
Diethyl Phthalate	84-66-2	No	No					8.00E-01	U			1
Diethyl sulfate	64-67-5	No	No									1
Diethyl-p-nitrophenylphosphate	311-45-5	No	No									1
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	No	No									1
Diethylene Glycol Monobutyl Ether	112-34-5	No	No					3.00E-02	U	1.00E-04	U	1
Diethylene Glycol Monoethyl Ether	111-90-0	No	No					6.00E-02	U	3.00E-04	U	1
Diethylene-glycol	111-46-6	No	No									1
Diethylformamide	617-84-5	No	Yes					1.00E-03	U			1
Diethylphosphorodithioate	298-06-6	No	Yes									1
Diethylstilbestrol	56-53-1	No	No	3.50E+02	U	1.00E-01	U					1
Difenzoquat	43222-48-6	No	No					8.00E-02	U			1
Diflubenzuron	35367-38-5	No	No					2.00E-02	U			1
Difluoroethane, 1,1-	75-37-6	No	Yes							4.00E+01	U	1
Difluoropropane, 2,2-	420-45-1	No	Yes									1
Dihydrosafrole	94-58-6	No	Yes	4.40E-02	U	1.30E-05	U					1
Diisopropyl Ether	108-20-3	No	Yes							7.00E-01	U	1
Diisopropyl Methylphosphonate	1445-75-6	No	Yes					8.00E-02	U			1
Dimagnesium phosphate	7782-75-4	No	No					4.86E+01	U			1
Dimethipin	55290-64-7	No	No					2.00E-02	U			1
Dimethoate	60-51-5	No	No					2.00E-04	U			1
Dimethoxybenzidine, 3,3'-	119-90-4	No	No	1.60E+00	U							1
Dimethyl Sulfate	77-78-1	No	No									1
Dimethyl Sulfide	75-18-3	No	Yes									1
Dimethyl methylphosphonate	756-79-6	No	No	1.70E-03	U			6.00E-02	U			1
Dimethylamino azobenzene [p-]	60-11-7	No	No	4.60E+00	U	1.30E-03	U					1
Dimethylaniline HCl, 2,4-	21436-96-4	No	No	5.80E-01	U							1
Dimethylaniline, 2,4-	95-68-1	No	No	2.00E-01	U			2.00E-03	U			1
Dimethylaniline, N,N-	121-69-7	No	Yes					2.00E-03	U			1
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	U	7.10E-02	U					1
Dimethylbenzidine, 3,3'-	119-93-7	No	No	1.10E+01	U							1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Dicyclopentadiene	77-73-6		1	5.67E+03		3.23E+09					
Didecyl dimethyl ammonium chloride	7173-51-5	0.1	1			3.23E+09					
Dieldrin	60-57-1	0.1	1			3.23E+09	1.22E+00	4.27E+00	1.80E+05	9.50E-01	
Diepoxybutane	1464-53-5		1	2.02E+05	1.15E+05	3.23E+09					
Diethanolamine	111-42-2	0.1	1			3.23E+09					
Diethyl Phthalate	84-66-2	0.1	1			3.23E+09					
Diethyl sulfate	64-67-5	0.1	1			3.23E+09					
Diethyl-p-nitrophenylphosphate	311-45-5	0.1	1			3.23E+09					
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	0.1	1			3.23E+09					
Diethylene Glycol Monobutyl Ether	112-34-5	0.1	1			3.23E+09					
Diethylene Glycol Monoethyl Ether	111-90-0	0.1	1			3.23E+09					
Diethylene-glycol	111-46-6	0.1	1			3.23E+09					
Diethylformamide	617-84-5		1	1.91E+05	1.12E+05	3.23E+09					
Diethylphosphorodithioate	298-06-6		1	1.79E+04	2.15E-02	3.23E+09					
Diethylstilbestrol	56-53-1	0.1	1			3.23E+09	5.58E-02	1.95E-01	8.26E+03	4.34E-02	
Difenzoquat	43222-48-6	0.1	1			3.23E+09					
Diflubenzuron	35367-38-5	0.1	1			3.23E+09					
Difluoroethane, 1,1-	75-37-6		1	1.59E+03	1.43E+03	3.23E+09					
Difluoropropane, 2,2-	420-45-1		1	1.01E+03	4.63E+04	3.23E+09					
Dihydrosafrole	94-58-6		1	2.08E+03		3.23E+09	4.44E+02		4.09E+01	3.74E+01	
Diisopropyl Ether	108-20-3		1	4.21E+03	2.26E+03	3.23E+09					
Diisopropyl Methylphosphonate	1445-75-6		1	5.26E+04	5.30E+02	3.23E+09					
Dimagnesium phosphate	7782-75-4		1			3.23E+09					
Dimethipin	55290-64-7	0.1	1			3.23E+09					
Dimethoate	60-51-5	0.1	1			3.23E+09					
Dimethoxybenzidine, 3,3'-	119-90-4	0.1	1			3.23E+09	1.22E+01	4.27E+01		9.50E+00	
Dimethyl Sulfate	77-78-1	0.1	1			3.23E+09					
Dimethyl Sulfide	75-18-3		1	4.10E+03	5.34E+03	3.23E+09					
Dimethyl methylphosphonate	756-79-6	0.1	1			3.23E+09	1.15E+04	4.02E+04		8.94E+03	
Dimethylamino azobenzene [p-]	60-11-7	0.1	1			3.23E+09	4.25E+00	1.49E+01	6.35E+05	3.30E+00	
Dimethylaniline HCl, 2,4-	21436-96-4	0.1	1			3.23E+09	3.37E+01	1.18E+02		2.62E+01	
Dimethylaniline, 2,4-	95-68-1	0.1	1			3.23E+09	9.77E+01	3.42E+02		7.60E+01	
Dimethylaniline, N,N-	121-69-7		1	4.32E+04	8.30E+02	3.23E+09					
Dimethylbenz(a)anthracene, 7,12-	57-97-6	0.13	1			3.23E+09	2.66E-02	1.38E-01	6.35E+03	2.23E-02	
Dimethylbenzidine, 3,3'-	119-93-7	0.1	1			3.23E+09	1.78E+00	6.22E+00		1.38E+00	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dicyclopentadiene	77-73-6				5.36E+05		1.49E+02	1.49E+02	1.49E+02 nc
Didecyl dimethyl ammonium chloride	7173-51-5								
Dieldrin	60-57-1				3.35E+02	1.17E+03		2.61E+02	9.50E-01 ca
Diepoxybutane	1464-53-5								
Diethanolamine	111-42-2				1.34E+04	4.69E+04	5.66E+07	1.04E+04	1.04E+04 nc
Diethyl Phthalate	84-66-2				5.36E+06	1.88E+07		4.17E+06	4.17E+06 max
Diethyl sulfate	64-67-5								
Diethyl-p-nitrophenylphosphate	311-45-5								
Diethylene Glycol Dinitrate (DEGDN)	693-21-0								
Diethylene Glycol Monobutyl Ether	112-34-5				2.01E+05	7.03E+05	2.83E+07	1.56E+05	1.56E+05 max
Diethylene Glycol Monoethyl Ether	111-90-0				4.02E+05	1.41E+06	8.50E+07	3.12E+05	3.12E+05 max
Diethylene-glycol	111-46-6								
Diethylformamide	617-84-5				6.70E+03			6.70E+03	6.70E+03 nc
Diethylphosphorodithioate	298-06-6								
Diethylstilbestrol	56-53-1								4.34E-02 ca
Difenzoquat	43222-48-6				5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Diflubenzuron	35367-38-5				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Difluoroethane, 1,1-	75-37-6						5.55E+06	5.55E+06	5.55E+06 sat
Difluoropropane, 2,2-	420-45-1								
Dihydrosafrole	94-58-6								3.74E+01 ca
Diisopropyl Ether	108-20-3						2.58E+05	2.58E+05	2.58E+05 sat
Diisopropyl Methylphosphonate	1445-75-6				5.36E+05			5.36E+05	5.36E+05 sat
Dimagnesium phosphate	7782-75-4				3.26E+08			3.26E+08	3.26E+08 max
Dimethipin	55290-64-7				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Dimethoate	60-51-5				1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Dimethoxybenzidine, 3,3'-	119-90-4								9.50E+00 ca
Dimethyl Sulfate	77-78-1								
Dimethyl Sulfide	75-18-3								
Dimethyl methylphosphonate	756-79-6				4.02E+05	1.41E+06		3.13E+05	8.94E+03 ca*
Dimethylamino azobenzene [p-]	60-11-7								3.30E+00 ca
Dimethylaniline HCl, 2,4-	21436-96-4								2.62E+01 ca
Dimethylaniline, 2,4-	95-68-1				1.34E+04	4.69E+04		1.04E+04	7.60E+01 ca
Dimethylaniline, N,N-	121-69-7				1.34E+04			1.34E+04	1.34E+04 sat
Dimethylbenz(a)anthracene, 7,12-	57-97-6								2.23E-02 ca
Dimethylbenzidine, 3,3'-	119-93-7								1.38E+00 ca

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Dimethylcyclohexylamine, n,n-	98-94-2	No	Yes									1
Dimethylethyl Lead	107584-40-7	No	No									1
Dimethylformamide	68-12-2	No	Yes					1.00E-01	U	3.00E-02	U	1
Dimethylhydrazine, 1,1-	57-14-7	No	Yes					1.00E-04	U	2.00E-06	U	1
Dimethylhydrazine, 1,2-	540-73-8	No	Yes	5.50E+02	U	1.60E-01	U					1
Dimethylmercury	593-74-8	No	Yes									1
Dimethylphenethylamine	122-09-8	No	No									1
Dimethylphenol, 2,4-	105-67-9	No	No					2.00E-02	U			1
Dimethylphenol, 2,6-	576-26-1	No	No					6.00E-04	U			1
Dimethylphenol, 3,4-	95-65-8	No	No					1.00E-03	U			1
Dimethylphthalate	131-11-3	No	No									1
Dimethylterephthalate	120-61-6	No	Yes					1.00E-01	U			1
Dimethylvinylchloride	513-37-1	No	Yes	4.50E-02	U	1.30E-05	U					1
Dinitro-o-cresol, 4,6-	534-52-1	No	No					8.00E-05	U			1
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	No	No					2.00E-03	U			1
Dinitroaniline, 3,5-	618-87-1	No	No									1
Dinitrobenzene, 1,2-	528-29-0	No	No					1.00E-04	U			1
Dinitrobenzene, 1,3-	99-65-0	No	No					1.00E-04	U			1
Dinitrobenzene, 1,4-	100-25-4	No	No					1.00E-04	U			1
Dinitrophenol, 2,4-	51-28-5	No	No					2.00E-03	U			1
Dinitrophenols	25550-58-7	Yes	No									1
Dinitrosopentamethylenetetramine, N,N-	101-25-7	No	No									1
Dinitrotoluene Mixture, 2,4/2,6-	NA	No	No	6.80E-01	U							1
Dinitrotoluene, 2,4-	121-14-2	No	No	3.10E-01	U	8.90E-05	U	2.00E-03	U			1
Dinitrotoluene, 2,6-	606-20-2	No	No	1.50E+00	U			3.00E-04	U			1
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	No	No					2.00E-03	U			1
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	No	No					2.00E-03	U			1
Dinitrotoluene, Technical grade	25321-14-6	No	No	4.50E-01	U			9.00E-04	U			1
Dinoseb	88-85-7	No	No					1.00E-03	U			1
Dioxane, 1,4-	123-91-1	No	Yes	1.00E-01	U	5.00E-06	U	3.00E-02	U	3.00E-02	U	1
Diphenamid	957-51-7	No	No					3.00E-02	U			1
Diphenyl Sulfone	127-63-9	No	No					8.00E-04	U			1
Diphenylamine	122-39-4	No	No					2.50E-02	U			1
Diphenylhydrazine, 1,2-	122-66-7	No	No	8.00E-01	U	2.20E-04	U					1
Dipotassium phosphate	7758-11-4	No	No					4.86E+01	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Dimethylcyclohexylamine, n,n-	98-94-2		1	5.23E+04		3.23E+09					
Dimethylethyl Lead	107584-40-7	0.1	1			3.23E+09					
Dimethylformamide	68-12-2		1	1.76E+05	1.06E+05	3.23E+09					
Dimethylhydrazine, 1,1-	57-14-7		1	2.23E+05	1.72E+05	3.23E+09					
Dimethylhydrazine, 1,2-	540-73-8		1	2.31E+05	1.89E+05	3.23E+09	3.55E-02		3.69E-01	3.24E-02	
Dimethylmercury	593-74-8		1	5.88E+03	4.14E+03	3.23E+09					
Dimethylphenethylamine	122-09-8	0.1	1			3.23E+09					
Dimethylphenol, 2,4-	105-67-9	0.1	1			3.23E+09					
Dimethylphenol, 2,6-	576-26-1	0.1	1			3.23E+09					
Dimethylphenol, 3,4-	95-65-8	0.1	1			3.23E+09					
Dimethylphthalate	131-11-3	0.1	1			3.23E+09					
Dimethylterephthalate	120-61-6		1	2.95E+04		3.23E+09					
Dimethylvinylchloride	513-37-1		1	1.39E+03	1.09E+03	3.23E+09	4.34E+02		2.73E+01	2.57E+01	
Dinitro-o-cresol, 4,6-	534-52-1	0.1	1			3.23E+09					
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	0.1	1			3.23E+09					
Dinitroaniline, 3,5-	618-87-1	0.1	1			3.23E+09					
Dinitrobenzene, 1,2-	528-29-0	0.1	1			3.23E+09					
Dinitrobenzene, 1,3-	99-65-0	0.1	1			3.23E+09					
Dinitrobenzene, 1,4-	100-25-4	0.1	1			3.23E+09					
Dinitrophenol, 2,4-	51-28-5	0.1	1			3.23E+09					
Dinitrophenols	25550-58-7	0.1	1			3.23E+09					
Dinitrosopentamethylenetetramine, N,N-	101-25-7	0.1	1			3.23E+09					
Dinitrotoluene Mixture, 2,4/2,6-	NA	0.1	1			3.23E+09	2.87E+01	1.01E+02		2.24E+01	
Dinitrotoluene, 2,4-	121-14-2	0.102	1			3.23E+09	6.31E+01	2.16E+02	9.28E+06	4.88E+01	
Dinitrotoluene, 2,6-	606-20-2	0.099	1			3.23E+09	1.30E+01	4.61E+01		1.02E+01	
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	0.006	1			3.23E+09					
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	0.009	1			3.23E+09					
Dinitrotoluene, Technical grade	25321-14-6	0.1	1			3.23E+09	4.34E+01	1.52E+02		3.38E+01	
Dinoseb	88-85-7	0.1	1			3.23E+09					
Dioxane, 1,4-	123-91-1		1	5.47E+04	1.16E+05	3.23E+09	1.95E+02		2.80E+03	1.83E+02	
Diphenamid	957-51-7	0.1	1			3.23E+09					
Diphenyl Sulfone	127-63-9	0.1	1			3.23E+09					
Diphenylamine	122-39-4	0.1	1			3.23E+09					
Diphenylhydrazine, 1,2-	122-66-7	0.1	1			3.23E+09	2.44E+01	8.55E+01	3.75E+06	1.90E+01	
Dipotassium phosphate	7758-11-4		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dimethylcyclohexylamine, n,n-	98-94-2								
Dimethylethyl Lead	107584-40-7								
Dimethylformamide	68-12-2				6.70E+05		4.62E+05	2.74E+05	2.74E+05 sat
Dimethylhydrazine, 1,1-	57-14-7				6.70E+02		3.91E+01	3.69E+01	3.69E+01 nc
Dimethylhydrazine, 1,2-	540-73-8								3.24E-02 ca
Dimethylmercury	593-74-8								
Dimethylphenethylamine	122-09-8								
Dimethylphenol, 2,4-	105-67-9				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Dimethylphenol, 2,6-	576-26-1				4.02E+03	1.41E+04		3.13E+03	3.13E+03 nc
Dimethylphenol, 3,4-	95-65-8				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Dimethylphthalate	131-11-3								
Dimethylterephthalate	120-61-6				6.70E+05			6.70E+05	6.70E+05 max
Dimethylvinylchloride	513-37-1								2.57E+01 ca
Dinitro-o-cresol, 4,6-	534-52-1				5.36E+02	1.88E+03		4.17E+02	4.17E+02 nc
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dinitroaniline, 3,5-	618-87-1								
Dinitrobenzene, 1,2-	528-29-0				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrobenzene, 1,3-	99-65-0				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrobenzene, 1,4-	100-25-4				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrophenol, 2,4-	51-28-5				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dinitrophenols	25550-58-7								
Dinitrosopentamethylenetetramine, N,N-	101-25-7								
Dinitrotoluene Mixture, 2,4/2,6-	NA								2.24E+01 ca
Dinitrotoluene, 2,4-	121-14-2				1.34E+04	4.60E+04		1.04E+04	4.88E+01 ca
Dinitrotoluene, 2,6-	606-20-2				2.01E+03	7.11E+03		1.57E+03	1.02E+01 ca
Dinitrotoluene, 2-Amino-4,6-	35572-78-2				1.34E+04	7.82E+05		1.32E+04	1.32E+04 nc
Dinitrotoluene, 4-Amino-2,6-	19406-51-0				1.34E+04	5.21E+05		1.31E+04	1.31E+04 nc
Dinitrotoluene, Technical grade	25321-14-6				6.03E+03	2.11E+04		4.69E+03	3.38E+01 ca
Dinoseb	88-85-7				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Dioxane, 1,4-	123-91-1				2.01E+05		1.44E+05	8.38E+04	1.83E+02 ca
Diphenamid	957-51-7				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Diphenyl Sulfone	127-63-9				5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Diphenylamine	122-39-4				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Diphenylhydrazine, 1,2-	122-66-7								1.90E+01 ca
Dipotassium phosphate	7758-11-4				3.26E+08			3.26E+08	3.26E+08 max

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Diquat	85-00-7	No	No					2.20E-03	U			1
Direct Black 38	1937-37-7	No	No	7.10E+00	U	1.40E-01	U					1
Direct Blue 6	2602-46-2	No	No	7.40E+00	U	1.40E-01	U					1
Direct Brown 95	16071-86-6	No	No	6.70E+00	U	1.40E-01	U					1
Direct Sky Blue	2610-05-1	No	No									1
Disodium phosphate	7558-79-4	No	No					4.86E+01	U			1
Disulfoton	298-04-4	No	No					4.00E-05	U			1
Dithiane, 1,4-	505-29-3	No	Yes					1.00E-02	U			1
Diuron	330-54-1	No	No					2.00E-03	U			1
Dodecyl benzenesulfonic acid	27176-87-0	No	No									1
Dodine	2439-10-3	No	No					4.00E-03	U			1
EPTC	759-94-4	No	Yes					2.50E-02	U			1
Endosulfan	115-29-7	No	Yes					6.00E-03	U			1
Endosulfan I	959-98-8	No	Yes									1
Endosulfan II	33213-65-9	No	Yes									1
Endosulfan Sulfate	1031-07-8	No	No									1
Endothall	145-73-3	No	No					2.00E-02	U			1
Endrin	72-20-8	No	No					3.00E-04	U			1
Endrin aldehyde	7421-93-4	No	No									1
Endrin ketone	53494-70-5	No	No									1
Epichlorohydrin	106-89-8	No	Yes	9.90E-03	U	1.20E-06	U	6.00E-03	U	1.00E-03	U	1
Epoxybutane, 1,2-	106-88-7	No	Yes							2.00E-02	U	1
Ethanol	64-17-5	No	Yes									1
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	No	No									1
Ethephon	16672-87-0	No	No					5.00E-03	U			1
Ethion	563-12-2	No	No					5.00E-04	U			1
Ethoxy Propanol	52125-53-8	No	Yes									1
Ethoxyethanol Acetate, 2-	111-15-9	No	Yes					1.00E-01	U	6.00E-02	U	1
Ethoxyethanol, 2-	110-80-5	No	Yes					9.00E-02	U	2.00E-01	U	1
Ethyl Acetate	141-78-6	No	Yes					9.00E-01	U	7.00E-02	U	1
Ethyl Acrylate	140-88-5	No	Yes	4.80E-02	U			5.00E-03	U	8.00E-03	U	1
Ethyl Chloride	75-00-3	No	Yes							1.00E+01	U	1
Ethyl Ether	60-29-7	No	Yes					2.00E-01	U			1
Ethyl Methacrylate	97-63-2	No	Yes					9.00E-02	U	3.00E-01	U	1
Ethyl methane sulfonate	62-50-0	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Diquat	85-00-7	0.1	1			3.23E+09					
Direct Black 38	1937-37-7	0.1	1			3.23E+09	2.75E+00	9.63E+00	5.90E+03	2.14E+00	
Direct Blue 6	2602-46-2	0.1	1			3.23E+09	2.64E+00	9.24E+00	5.90E+03	2.05E+00	
Direct Brown 95	16071-86-6	0.1	1			3.23E+09	2.92E+00	1.02E+01	5.90E+03	2.27E+00	
Direct Sky Blue	2610-05-1	0.1	1			3.23E+09					
Disodium phosphate	7558-79-4		1			3.23E+09					
Disulfoton	298-04-4	0.1	1			3.23E+09					
Dithiane, 1,4-	505-29-3		1	6.26E+04		3.23E+09					
Diuron	330-54-1	0.1	1			3.23E+09					
Dodecyl benzenesulfonic acid	27176-87-0	0.1	1			3.23E+09					
Dodine	2439-10-3	0.1	1			3.23E+09					
EPTC	759-94-4		1	1.62E+05		3.23E+09					
Endosulfan	115-29-7		1	5.65E+05		3.23E+09					
Endosulfan I	959-98-8		1	5.65E+05		3.23E+09					
Endosulfan II	33213-65-9		1	5.51E+05		3.23E+09					
Endosulfan Sulfate	1031-07-8	0.1	1			3.23E+09					
Endothall	145-73-3	0.1	1			3.23E+09					
Endrin	72-20-8	0.1	1			3.23E+09					
Endrin aldehyde	7421-93-4	0.1	1			3.23E+09					
Endrin ketone	53494-70-5	0.1	1			3.23E+09					
Epichlorohydrin	106-89-8		1	2.61E+04	1.05E+04	3.23E+09	1.97E+03		5.55E+03	1.46E+03	
Epoxybutane, 1,2-	106-88-7		1	1.06E+04	1.53E+04	3.23E+09					
Ethanol	64-17-5		1	4.34E+04	1.06E+05	3.23E+09					
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	0.1	1			3.23E+09					
Ethephon	16672-87-0	0.1	1			3.23E+09					
Ethion	563-12-2	0.1	1			3.23E+09					
Ethoxy Propanol	52125-53-8		1	1.26E+05	8.55E+04	3.23E+09					
Ethoxyethanol Acetate, 2-	111-15-9		1	8.47E+04	3.14E+04	3.23E+09					
Ethoxyethanol, 2-	110-80-5		1	1.36E+05	1.06E+05	3.23E+09					
Ethyl Acetate	141-78-6		1	1.19E+04	1.08E+04	3.23E+09					
Ethyl Acrylate	140-88-5		1	8.74E+03	2.50E+03	3.23E+09	4.07E+02			4.07E+02	
Ethyl Chloride	75-00-3		1	1.78E+03	2.12E+03	3.23E+09					
Ethyl Ether	60-29-7		1	4.31E+03	1.01E+04	3.23E+09					
Ethyl Methacrylate	97-63-2		1	7.97E+03	1.11E+03	3.23E+09					
Ethyl methane sulfonate	62-50-0	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Diquat	85-00-7				1.47E+04	5.16E+04		1.15E+04	1.15E+04 nc
Direct Black 38	1937-37-7								2.14E+00 ca
Direct Blue 6	2602-46-2								2.05E+00 ca
Direct Brown 95	16071-86-6								2.27E+00 ca
Direct Sky Blue	2610-05-1								
Disodium phosphate	7558-79-4				3.26E+08			3.26E+08	3.26E+08 max
Disulfoton	298-04-4				2.68E+02	9.38E+02		2.08E+02	2.08E+02 nc
Dithiane, 1,4-	505-29-3				6.70E+04			6.70E+04	6.70E+04 nc
Diuron	330-54-1				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dodecyl benzenesulfonic acid	27176-87-0								
Dodine	2439-10-3				2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
EPTC	759-94-4				1.68E+05			1.68E+05	1.68E+05 max
Endosulfan	115-29-7				4.02E+04			4.02E+04	4.02E+04 nc
Endosulfan I	959-98-8								
Endosulfan II	33213-65-9								
Endosulfan Sulfate	1031-07-8								
Endothall	145-73-3				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Endrin	72-20-8				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Endrin aldehyde	7421-93-4								
Endrin ketone	53494-70-5								
Epichlorohydrin	106-89-8				4.02E+04		2.28E+03	2.16E+03	1.46E+03 ca**
Epoxybutane, 1,2-	106-88-7						1.85E+04	1.85E+04	1.85E+04 sat
Ethanol	64-17-5								
Ethanol, 2-(2-methoxyethoxy)-	111-77-3								
Ethephon	16672-87-0				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Ethion	563-12-2				3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Ethoxy Propanol	52125-53-8								
Ethoxyethanol Acetate, 2-	111-15-9				6.70E+05		4.45E+05	2.68E+05	2.68E+05 sat
Ethoxyethanol, 2-	110-80-5				6.03E+05		2.38E+06	4.81E+05	4.81E+05 sat
Ethyl Acetate	141-78-6				6.03E+06		7.29E+04	7.20E+04	7.20E+04 sat
Ethyl Acrylate	140-88-5				3.35E+04		6.13E+03	5.18E+03	4.07E+02 ca*
Ethyl Chloride	75-00-3						1.56E+06	1.56E+06	1.56E+06 sat
Ethyl Ether	60-29-7				1.34E+06			1.34E+06	1.34E+06 sat
Ethyl Methacrylate	97-63-2				6.03E+05		2.10E+05	1.55E+05	1.55E+05 sat
Ethyl methane sulfonate	62-50-0								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	No	No					1.00E-05	U			1
Ethylbenzene	100-41-4	No	Yes	1.10E-02	U	2.50E-06	U	1.00E-01	U	1.00E+00	U	1
Ethylene Cyanohydrin	109-78-4	No	No					7.00E-02	U			1
Ethylene Diamine	107-15-3	No	Yes					9.00E-02	U			1
Ethylene Glycol	107-21-1	No	No					2.00E+00	U	4.00E-01	U	1
Ethylene Glycol Monobutyl Ether	111-76-2	No	No					1.00E-01	U	1.60E+00	U	1
Ethylene Oxide	75-21-8	No	Yes	3.10E-01	U	8.80E-05	U			3.00E-02	U	1
Ethylene Thiourea	96-45-7	No	No	4.50E-02	U	1.30E-05	U	8.00E-05	U			1
Ethyleneimine	151-56-4	No	Yes	6.50E+01	U	1.90E-02	U					1
Ethylphenol, 4-	123-07-9	No	No									1
Ethylphthalyl Ethyl Glycolate	84-72-0	No	No					3.00E+00	U			1
Express	101200-48-0	No	No					8.00E-03	U			1
Famphur	52-85-7	No	No									1
Fenamiphos	22224-92-6	No	No					2.50E-04	U			1
Fenpropathrin	39515-41-8	No	No					2.50E-02	U			1
Fluometuron	2164-17-2	No	No					1.30E-02	U			1
Fluoranthene	206-44-0	No	No					4.00E-02	U			1
Fluorene	86-73-7	No	Yes					4.00E-02	U			1
Fluoride	16984-48-8	No	No					4.00E-02	U	1.30E-02	U	1
Fluorine (Soluble Fluoride)	7782-41-4	No	No					6.00E-02	U	1.30E-02	U	1
Fluorobenzene	462-06-6	No	Yes									1
Fluorobiphenyl, 2-	321-60-8	No	Yes									1
Fluorophenol, 2-	367-12-4	No	Yes									1
Fluridone	59756-60-4	No	No					8.00E-02	U			1
Flurprimidol	56425-91-3	No	No					2.00E-02	U			1
Flutolanil	66332-96-5	No	No					6.00E-02	U			1
Fluvalinate	69409-94-5	No	No					1.00E-02	U			1
Folpet	133-07-3	No	No	3.50E-03	U			1.00E-01	U			1
Fomesafen	72178-02-0	No	No	1.90E-01	U							1
Fonofos	944-22-9	No	No					2.00E-03	U			1
Formaldehyde	50-00-0	No	Yes			1.30E-05	U	2.00E-01	U	9.83E-03	U	1
Formic Acid	64-18-6	No	Yes					9.00E-01	U	3.00E-04	U	1
Fosetyl-AL	39148-24-8	No	No					3.00E+00	U			1
Fuel Oil Number 2	68476-30-2	No	No									1
Furan	110-00-9	No	Yes					1.00E-03	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	0.1	1			3.23E+09					
Ethylbenzene	100-41-4		1	7.82E+03	4.79E+02	3.23E+09	1.78E+03		7.99E+02	5.51E+02	
Ethylene Cyanohydrin	109-78-4	0.1	1			3.23E+09					
Ethylene Diamine	107-15-3		1	2.48E+05	1.89E+05	3.23E+09					
Ethylene Glycol	107-21-1	0.1	1			3.23E+09					
Ethylene Glycol Monobutyl Ether	111-76-2	0.1	1			3.23E+09					
Ethylene Oxide	75-21-8		1	8.40E+03	1.21E+05	3.23E+09	6.31E+01		2.44E+01	1.76E+01	
Ethylene Thiourea	96-45-7	0.1	1			3.23E+09	4.34E+02	1.52E+03	6.35E+07	3.38E+02	
Ethyleneimine	151-56-4		1	3.29E+04	1.54E+05	3.23E+09	3.01E-01		4.43E-01	1.79E-01	
Ethylphenol, 4-	123-07-9	0.1	1			3.23E+09					
Ethylphthalyl Ethyl Glycolate	84-72-0	0.1	1			3.23E+09					
Express	101200-48-0	0.1	1			3.23E+09					
Famphur	52-85-7	0.1	1			3.23E+09					
Fenamiphos	22224-92-6	0.1	1			3.23E+09					
Fenpropathrin	39515-41-8	0.1	1			3.23E+09					
Fluometuron	2164-17-2	0.1	1			3.23E+09					
Fluoranthene	206-44-0	0.13	1			3.23E+09					
Fluorene	86-73-7	0.13	1	3.88E+05		3.23E+09					
Fluoride	16984-48-8		1			3.23E+09					
Fluorine (Soluble Fluoride)	7782-41-4		1			3.23E+09					
Fluorobenzene	462-06-6		1	6.49E+03	2.39E+03	3.23E+09					
Fluorobiphenyl, 2-	321-60-8		1	1.08E+05		3.23E+09					
Fluorophenol, 2-	367-12-4		1	2.93E+05	9.21E+04	3.23E+09					
Fluridone	59756-60-4	0.1	1			3.23E+09					
Flurprimidol	56425-91-3	0.1	1			3.23E+09					
Flutolanil	66332-96-5	0.1	1			3.23E+09					
Fluvalinate	69409-94-5	0.1	1			3.23E+09					
Folpet	133-07-3	0.1	1			3.23E+09	5.58E+03	1.95E+04		4.34E+03	
Fomesafen	72178-02-0	0.1	1			3.23E+09	1.03E+02	3.60E+02		8.00E+01	
Fonofos	944-22-9	0.1	1			3.23E+09					
Formaldehyde	50-00-0		1	1.07E+05	4.24E+04	3.23E+09			2.11E+03	2.11E+03	
Formic Acid	64-18-6		1	1.28E+05	1.06E+05	3.23E+09					
Fosetyl-AL	39148-24-8	0.1	1			3.23E+09					
Fuel Oil Number 2	68476-30-2	0.1	1			3.23E+09					
Furan	110-00-9	0.03	1	3.60E+03	6.22E+03	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Ethyl-p-nitrophenyl Phosphonate	2104-64-5				6.70E+01	2.34E+02		5.21E+01	5.21E+01 nc
Ethylbenzene	100-41-4				6.70E+05		6.85E+05	3.39E+05	5.51E+02 sat
Ethylene Cyanohydrin	109-78-4				4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Ethylene Diamine	107-15-3				6.03E+05			6.03E+05	6.03E+05 sat
Ethylene Glycol	107-21-1				1.34E+07	4.69E+07	1.13E+11	1.04E+07	1.04E+07 max
Ethylene Glycol Monobutyl Ether	111-76-2				6.70E+05	2.34E+06	4.53E+11	5.21E+05	5.21E+05 max
Ethylene Oxide	75-21-8						2.21E+04	2.21E+04	1.76E+01 ca
Ethylene Thiourea	96-45-7				5.36E+02	1.88E+03		4.17E+02	3.38E+02 ca**
Ethyleneimine	151-56-4								1.79E-01 ca
Ethylphenol, 4-	123-07-9								
Ethylphthalyl Ethyl Glycolate	84-72-0				2.01E+07	7.03E+07		1.56E+07	1.56E+07 max
Express	101200-48-0				5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Famphur	52-85-7								
Fenamiphos	22224-92-6				1.68E+03	5.86E+03		1.30E+03	1.30E+03 nc
Fenpropathrin	39515-41-8				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Fluometuron	2164-17-2				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Fluoranthene	206-44-0				2.68E+05	7.22E+05		1.95E+05	1.95E+05 max
Fluorene	86-73-7				2.68E+05	7.22E+05		1.95E+05	1.95E+05 max
Fluoride	16984-48-8				2.68E+05		3.68E+09	2.68E+05	2.68E+05 max
Fluorine (Soluble Fluoride)	7782-41-4				4.02E+05		3.68E+09	4.02E+05	4.02E+05 max
Fluorobenzene	462-06-6								
Fluorobiphenyl, 2-	321-60-8								
Fluorophenol, 2-	367-12-4								
Fluridone	59756-60-4				5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Flurprimidol	56425-91-3				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Flutolanil	66332-96-5				4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Fluvalinate	69409-94-5				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Folpet	133-07-3				6.70E+05	2.34E+06		5.21E+05	4.34E+03 ca
Fomesafen	72178-02-0								8.00E+01 ca
Fonofos	944-22-9				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Formaldehyde	50-00-0				1.34E+06		9.23E+04	8.64E+04	2.11E+03 ca*
Formic Acid	64-18-6				6.03E+06		3.37E+03	3.37E+03	3.37E+03 nc
Fosetyl-AL	39148-24-8				2.01E+07	7.03E+07		1.56E+07	1.56E+07 max
Fuel Oil Number 2	68476-30-2								
Furan	110-00-9				6.70E+03	7.82E+04		6.17E+03	6.17E+03 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Furazolidone	67-45-8	No	No	3.80E+00	U							1
Furfural	98-01-1	No	Yes					3.00E-03	U	5.00E-02	U	1
Furium	531-82-8	No	No	1.50E+00	U	4.30E-04	U					1
Furmecyclox	60568-05-0	No	No	3.00E-02	U	8.60E-06	U					1
Gadolinium	7440-54-2	No	No									1
Gallium	7440-55-3	No	No									1
Germanium	7440-56-4	No	No									1
Glufosinate, Ammonium	77182-82-2	No	No					4.00E-04	U			1
Glutaraldehyde	111-30-8	No	No							8.00E-05	U	1
Glycerol	56-81-5	No	No									1
Glycidyl	765-34-4	No	Yes					4.00E-04	U	1.00E-03	U	1
Glyphosate	1071-83-6	No	No					1.00E-01	U			1
Goal	42874-03-3	No	No					3.00E-03	U			1
Guanidine	113-00-8	No	Yes					1.00E-02	U			1
Guanidine Chloride	50-01-1	No	No					2.00E-02	U			1
Guanidine Nitrate	506-93-4	No	No									1
Guthion	86-50-0	No	No					3.00E-03	U	1.00E-02	U	1
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	No	Yes	1.30E+03	U	3.80E-01	U	1.00E-06	U	4.00E-06	U	1
Haloacetic acids	NA	No	No									1
Haloxyfop, Methyl	69806-40-2	No	No					5.00E-05	U			1
Harmony	79277-27-3	No	No					1.30E-02	U			1
Heptachlor	76-44-8	No	Yes	4.50E+00	U	1.30E-03	U	5.00E-04	U			1
Heptachlor Epoxide	1024-57-3	No	Yes	9.10E+00	U	2.60E-03	U	1.30E-05	U			1
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
Heptanal, n-	111-71-7	No	Yes									1
Heptane, N-	142-82-5	No	Yes									1
Heptanol, n-	111-70-6	No	Yes									1
Hexabromobenzene	87-82-1	No	Yes					2.00E-03	U			1
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	No	No					2.00E-04	U			1
Hexachlorobenzene	118-74-1	No	Yes	1.60E+00	U	4.60E-04	U	8.00E-04	U			1
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Furazolidone	67-45-8	0.1	1			3.23E+09	5.14E+00	1.80E+01		4.00E+00	
Furfural	98-01-1		1	6.71E+04	1.01E+04	3.23E+09					
Furium	531-82-8	0.1	1			3.23E+09	1.30E+01	4.56E+01	1.92E+06	1.01E+01	
Furmecyclox	60568-05-0	0.1	1			3.23E+09	6.52E+02	2.28E+03	9.61E+07	5.07E+02	
Gadolinium	7440-54-2		1			3.23E+09					
Gallium	7440-55-3		1			3.23E+09					
Germanium	7440-56-4		1			3.23E+09					
Glufosinate, Ammonium	77182-82-2	0.1	1			3.23E+09					
Glutaraldehyde	111-30-8	0.1	1			3.23E+09					
Glycerol	56-81-5	0.1	1			3.23E+09					
Glycidyl	765-34-4		1	1.01E+05	1.06E+05	3.23E+09					
Glyphosate	1071-83-6	0.1	1			3.23E+09					
Goal	42874-03-3	0.1	1			3.23E+09					
Guanidine	113-00-8		1	2.00E+05		3.23E+09					
Guanidine Chloride	50-01-1	0.1	1			3.23E+09					
Guanidine Nitrate	506-93-4	0.1	1			3.23E+09					
Guthion	86-50-0	0.1	1			3.23E+09					
HCDD, 1,2,3,4,6,7,8,-	35822-46-9		1	4.52E+06		3.23E+09	1.50E-02		3.04E+00	1.50E-02	
Haloacetic acids	NA	0.1	1			3.23E+09					
Haloxyfop, Methyl	69806-40-2	0.1	1			3.23E+09					
Harmony	79277-27-3	0.1	1			3.23E+09					
Heptachlor	76-44-8		1	6.62E+05		3.23E+09	4.34E+00		1.30E+02	4.20E+00	
Heptachlor Epoxide	1024-57-3		1	1.16E+06		3.23E+09	2.15E+00		1.14E+02	2.11E+00	
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	0.14	1	2.81E+06		3.23E+09	5.01E+00	1.25E+01	6.29E+02	3.56E+00	
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	0.03	1	1.15E+07		3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02	
Heptanal, n-	111-71-7		1	1.08E+04	2.09E+02	3.23E+09					
Heptane, N-	142-82-5		1	1.23E+03	5.79E+01	3.23E+09					
Heptanol, n-	111-70-6		1	4.73E+04	3.78E+02	3.23E+09					
Hexabromobenzene	87-82-1		1	5.24E+05		3.23E+09					
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	0.1	1			3.23E+09					
Hexachlorobenzene	118-74-1		1	9.37E+04		3.23E+09	1.22E+01		5.21E+01	9.90E+00	
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	0.14	1	1.98E+06		3.23E+09	5.01E+00	1.25E+01	4.43E+02	3.55E+00	
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	0.14	1	2.00E+06		3.23E+09	5.01E+00	1.25E+01	4.48E+02	3.55E+00	
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	0.14	1	2.13E+06		3.23E+09	5.01E+00	1.25E+01	4.77E+02	3.55E+00	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Furazolidone	67-45-8								4.00E+00 ca
Furfural	98-01-1				2.01E+04		2.94E+05	1.88E+04	1.88E+04 sat
Furium	531-82-8								1.01E+01 ca
Furmecyclox	60568-05-0								5.07E+02 ca
Gadolinium	7440-54-2								
Gallium	7440-55-3								
Germanium	7440-56-4								
Glufosinate, Ammonium	77182-82-2				2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Glutaraldehyde	111-30-8						2.27E+07	2.27E+07	2.27E+07 max
Glycerol	56-81-5								
Glycidyl	765-34-4				2.68E+03		8.88E+03	2.06E+03	2.06E+03 nc
Glyphosate	1071-83-6				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Goal	42874-03-3				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Guanidine	113-00-8				6.70E+04			6.70E+04	6.70E+04 nc
Guanidine Chloride	50-01-1				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Guanidine Nitrate	506-93-4								
Guthion	86-50-0				2.01E+04	7.03E+04	2.83E+09	1.56E+04	1.56E+04 nc
HCDD, 1,2,3,4,6,7,8,-	35822-46-9				6.70E+00		1.58E+03	6.67E+00	1.50E-02 ca
Haloacetic acids	NA								
Haloxyfop, Methyl	69806-40-2				3.35E+02	1.17E+03		2.61E+02	2.61E+02 nc
Harmony	79277-27-3				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Heptachlor	76-44-8				3.35E+03			3.35E+03	4.20E+00 ca
Heptachlor Epoxide	1024-57-3				8.71E+01			8.71E+01	2.11E+00 ca*
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9				1.56E+02	3.90E+02	3.27E+05	1.11E+02	3.56E+00 ca*
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4				4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
Heptanal, n-	111-71-7								
Heptane, N-	142-82-5								
Heptanol, n-	111-70-6								
Hexabromobenzene	87-82-1				1.34E+04			1.34E+04	1.34E+04 nc
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2				1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Hexachlorobenzene	118-74-1				5.36E+03			5.36E+03	9.90E+00 ca
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6				1.56E+02	3.90E+02	2.30E+05	1.11E+02	3.55E+00 ca*
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7				1.56E+02	3.90E+02	2.33E+05	1.11E+02	3.55E+00 ca*
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4				1.56E+02	3.90E+02	2.48E+05	1.11E+02	3.55E+00 ca*

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	No	Yes	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1
Hexachlorobutadiene	87-68-3	No	Yes	7.80E-02	U	2.20E-05	U	1.00E-03	U			1
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	6.30E+00	U	1.80E-03	U	8.00E-03	U			1
Hexachlorocyclohexane, Beta-	319-85-7	No	No	1.80E+00	U	5.30E-04	U					1
Hexachlorocyclohexane, Delta-	319-86-8	No	No									1
Hexachlorocyclohexane, Epsilon	6108-10-7	No	No									1
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	No	No	1.10E+00	U	3.10E-04	U	3.00E-04	U			1
Hexachlorocyclohexane, Technical	608-73-1	No	No	1.80E+00	U	5.10E-04	U					1
Hexachlorocyclopentadiene	77-47-4	No	Yes					6.00E-03	U	2.00E-04	U	1
Hexachlorodibenzo-p-dioxin	34465-46-8	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachlorodibenzo-p-dioxin, Mixture	NA	No	No	6.20E+03	U	1.30E+00	U					1
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hexachloroethane	67-72-1	No	Yes	4.00E-02	U	1.10E-05	U	7.00E-04	U	3.00E-02	U	1
Hexachlorophene	70-30-4	No	No					3.00E-04	U			1
Hexachloropropene	1888-71-7	No	Yes									1
Hexadecanoic Acid	57-10-3	No	Yes									1
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	No	No	1.10E-01	U			3.00E-03	U			1
Hexamethylene Diisocyanate, 1,6-	822-06-0	No	Yes							1.00E-05	U	1
Hexamethylphosphoramide	680-31-9	No	No					4.00E-04	U			1
Hexane, N-	110-54-3	No	Yes					6.00E-02	U	7.00E-01	U	1
Hexanedioic Acid	124-04-9	No	No					2.00E+00	U			1
Hexanol, n-	111-27-3	No	Yes									1
Hexanone, 2-	591-78-6	No	Yes					5.00E-03	U	3.00E-02	U	1
Hexazinone	51235-04-2	No	No					3.30E-02	U			1
HpCDD, 2,3,7,8-	37871-00-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HpCDF, 2,3,7,8-	38998-75-3	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1
HxCDD, 1,2,3,6,7,8-	57653-85-7	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDD, 1,2,3,7,8,9-	19408-74-3	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 1,2,3,6,7,8-	57117-44-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 1,2,3,7,8,9-	72918-21-9	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 2,3,4,6,7,8-	60851-34-5	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
HxCDF, 2,3,7,8-	55684-94-1	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Hydrazine	302-01-2	No	Yes	3.00E+00	U	4.90E-03	U			3.00E-05	U	1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	0.14	1	1.98E+06		3.23E+09	5.01E-03	1.25E-02	4.43E-01	3.55E-03	
Hexachlorobutadiene	87-68-3		1	1.49E+04	1.68E+01	3.23E+09	2.51E+02		1.73E+02	1.02E+02	
Hexachlorocyclohexane, Alpha-	319-84-6	0.1	1			3.23E+09	3.10E+00	1.09E+01	4.59E+05	2.41E+00	
Hexachlorocyclohexane, Beta-	319-85-7	0.1	1			3.23E+09	1.09E+01	3.80E+01	1.56E+06	8.45E+00	
Hexachlorocyclohexane, Delta-	319-86-8	0.1	1			3.23E+09					
Hexachlorocyclohexane, Epsilon	6108-10-7	0.1	1			3.23E+09					
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	0.04	1			3.23E+09	1.78E+01	1.55E+02	2.66E+06	1.59E+01	
Hexachlorocyclohexane, Technical	608-73-1	0.1	1			3.23E+09	1.09E+01	3.80E+01	1.62E+06	8.45E+00	
Hexachlorocyclopentadiene	77-47-4		1	1.18E+04	1.57E+01	3.23E+09					
Hexachlorodibenzo-p-dioxin	34465-46-8	0.03	1			3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03	
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	0.03	1	6.59E+06		3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03	
Hexachlorodibenzo-p-dioxin, Mixture	NA	0.03	1			3.23E+09	3.15E-03	3.68E-02	6.35E+02	2.90E-03	
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	0.03	1	5.38E+06		3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03	
Hexachloroethane	67-72-1		1	1.10E+04		3.23E+09	4.89E+02		2.57E+02	1.68E+02	
Hexachlorophene	70-30-4	0.1	1			3.23E+09					
Hexachloropropene	1888-71-7		1	1.48E+04	4.37E+01	3.23E+09					
Hexadecanoic Acid	57-10-3		1	7.66E+05		3.23E+09					
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	0.015	1			3.23E+09	1.78E+02	4.15E+03		1.70E+02	
Hexamethylene Diisocyanate, 1,6-	822-06-0		1	4.15E+05	5.19E+03	3.23E+09					
Hexamethylphosphoramide	680-31-9	0.1	1			3.23E+09					
Hexane, N-	110-54-3		1	1.14E+03	1.41E+02	3.23E+09					
Hexanedioic Acid	124-04-9	0.1	1			3.23E+09					
Hexanol, n-	111-27-3		1	4.03E+04	9.98E+02	3.23E+09					
Hexanone, 2-	591-78-6		1	1.83E+04	3.28E+03	3.23E+09					
Hexazinone	51235-04-2	0.1	1			3.23E+09					
HpCDD, 2,3,7,8-	37871-00-4	0.03	1	3.36E+06		3.23E+09	1.50E-02	1.75E-01	2.26E+00	1.38E-02	
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	0.03	1	1.15E+07		3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02	
HpCDF, 2,3,7,8-	38998-75-3	0.03	1	1.15E+07		3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02	
HxCDD, 1,2,3,6,7,8-	57653-85-7	0.03	1	6.59E+06		3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03	
HxCDD, 1,2,3,7,8,9-	19408-74-3	0.03	1	6.59E+06		3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03	
HxCDF, 1,2,3,6,7,8-	57117-44-9	0.03	1	5.38E+06		3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03	
HxCDF, 1,2,3,7,8,9-	72918-21-9	0.03	1			3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03	
HxCDF, 2,3,4,6,7,8-	60851-34-5	0.03	1	5.38E+06		3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03	
HxCDF, 2,3,7,8-	55684-94-1	0.03	1			3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03	
Hydrazine	302-01-2		1			3.23E+09	6.52E+00		1.69E+05	6.52E+00	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6				1.56E-01	3.90E-01	2.30E+02	1.11E-01	3.55E-03 ca*
Hexachlorobutadiene	87-68-3				6.70E+03			6.70E+03	1.02E+02 sat
Hexachlorocyclohexane, Alpha-	319-84-6				5.36E+04	1.88E+05		4.17E+04	2.41E+00 ca
Hexachlorocyclohexane, Beta-	319-85-7								8.45E+00 ca
Hexachlorocyclohexane, Delta-	319-86-8								
Hexachlorocyclohexane, Epsilon	6108-10-7								
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9				2.01E+03	1.76E+04		1.80E+03	1.59E+01 ca
Hexachlorocyclohexane, Technical	608-73-1								8.45E+00 ca
Hexachlorocyclopentadiene	77-47-4				4.02E+04		2.06E+02	2.05E+02	2.05E+02 sat
Hexachlorodibenzo-p-dioxin	34465-46-8				4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6				4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
Hexachlorodibenzo-p-dioxin, Mixture	NA								2.90E-03 ca
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9				4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
Hexachloroethane	67-72-1				4.69E+03		2.90E+04	4.04E+03	1.68E+02 ca*
Hexachlorophene	70-30-4				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Hexachloropropene	1888-71-7								
Hexadecanoic Acid	57-10-3								
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4				2.01E+04	4.69E+05		1.93E+04	1.70E+02 ca
Hexamethylene Diisocyanate, 1,6-	822-06-0						3.63E+02	3.63E+02	3.63E+02 nc
Hexamethylphosphoramide	680-31-9				2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Hexane, N-	110-54-3				4.02E+05		7.01E+04	5.97E+04	5.97E+04 sat
Hexanedioic Acid	124-04-9				1.34E+07	4.69E+07		1.04E+07	1.04E+07 max
Hexanol, n-	111-27-3								
Hexanone, 2-	591-78-6				3.35E+04		4.82E+04	1.98E+04	1.98E+04 sat
Hexazinone	51235-04-2				2.21E+05	7.74E+05		1.72E+05	1.72E+05 max
HpCDD, 2,3,7,8-	37871-00-4				4.69E-01	5.47E+00	1.18E+03	4.32E-01	1.38E-02 ca*
HpCDF, 1,2,3,4,7,8,9-	55673-89-7				4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
HpCDF, 2,3,7,8-	38998-75-3				4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
HxCDD, 1,2,3,6,7,8-	57653-85-7				4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
HxCDD, 1,2,3,7,8,9-	19408-74-3				4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
HxCDF, 1,2,3,6,7,8-	57117-44-9				4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
HxCDF, 1,2,3,7,8,9-	72918-21-9				4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
HxCDF, 2,3,4,6,7,8-	60851-34-5				4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
HxCDF, 2,3,7,8-	55684-94-1				4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
Hydrazine	302-01-2						8.50E+06	8.50E+06	6.52E+00 ca

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Hydrazine Sulfate	10034-93-2	No	No	3.00E+00	U	4.90E-03	U					1
Hydrogen Chloride	7647-01-0	No	Yes							2.00E-02	U	1
Hydrogen Cyanide	74-90-8	No	Yes					6.00E-04	U	8.00E-04	U	1
Hydrogen Fluoride	7664-39-3	No	Yes					4.00E-02	U	1.40E-02	U	1
Hydrogen Selenide	77830-70-5	No	No									1
Hydrogen Sulfate	12143-45-2	No	No									1
Hydrogen Sulfide	7783-06-4	No	Yes							2.00E-03	U	1
Hydroquinone	123-31-9	No	No	6.00E-02	U			4.00E-02	U			1
Imazalil	35554-44-0	No	No					1.30E-02	U			1
Imazaquin	81335-37-7	No	No					2.50E-01	U			1
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	U	1.10E-04	U					1
Indium	7440-74-6	No	No									1
Iodide	20461-54-5	No	No									1
Iodine	7553-56-2	No	No					1.00E-02	U			1
Iodomethane	74-88-4	No	Yes									1
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	No	No									1
Iprodione	36734-19-7	No	No					4.00E-02	U			1
Iron	7439-89-6	No	No					7.00E-01	U			1
Iron Sulfide	11126-12-8	No	No									1
Isobutyl Alcohol	78-83-1	No	Yes					3.00E-01	U			1
Isodrin	465-73-6	No	Yes									1
Isophorone	78-59-1	No	No	9.50E-04	U			2.00E-01	U	2.00E+00	U	1
Isopropalin	33820-53-0	No	Yes					1.50E-02	U			1
Isopropanol	67-63-0	No	Yes					2.00E+00	U	2.00E-01	U	1
Isopropyl Methyl Phosphonic Acid	1832-54-8	No	No					1.00E-01	U			1
Isopropyltoluene, p-	99-87-6	No	Yes									1
Isosafrole	120-58-1	No	Yes									1
Isoxaben	82558-50-7	No	No					5.00E-02	U			1
JP-4	50815-00-4	No	Yes									1
JP-5/JP-8	8002-20-6	No	Yes									1
JP-7	NA	No	Yes							3.00E-01	U	1
Kerb	23950-58-5	No	No					7.50E-02	U			1
Kerosene	8008-20-6	No	Yes									1
Lactofen	77501-63-4	No	No					2.00E-03	U			1
Lactonitrile	78-97-7	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Hydrazine Sulfate	10034-93-2		1			3.23E+09	6.52E+00		1.69E+05	6.52E+00	
Hydrogen Chloride	7647-01-0		1			3.23E+09					
Hydrogen Cyanide	74-90-8		1	7.20E+04	1.00E+07	3.23E+09					
Hydrogen Fluoride	7664-39-3		1			3.23E+09					
Hydrogen Selenide	77830-70-5		1			3.23E+09					
Hydrogen Sulfate	12143-45-2		1			3.23E+09					
Hydrogen Sulfide	7783-06-4		1			3.23E+09					
Hydroquinone	123-31-9	0.1	1			3.23E+09	3.26E+02	1.14E+03		2.53E+02	
Imazalil	35554-44-0	0.1	1			3.23E+09					
Imazaquin	81335-37-7	0.1	1			3.23E+09					
Indeno[1,2,3-cd]pyrene	193-39-5	0.13	1			3.23E+09	9.10E+00	4.74E+01	4.10E+06	7.63E+00	
Indium	7440-74-6		1			3.23E+09					
Iodide	20461-54-5		1			3.23E+09					
Iodine	7553-56-2		1			3.23E+09					
Iodomethane	74-88-4		1	2.55E+03	3.03E+03	3.23E+09					
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	0.1	1			3.23E+09					
Iprodione	36734-19-7	0.1	1			3.23E+09					
Iron	7439-89-6		1			3.23E+09					
Iron Sulfide	11126-12-8		1			3.23E+09					
Isobutyl Alcohol	78-83-1		1	3.88E+04	1.00E+04	3.23E+09					
Isodrin	465-73-6		1	2.32E+06		3.23E+09					
Isophorone	78-59-1	0.1	1			3.23E+09	2.06E+04	7.20E+04		1.60E+04	
Isopropalin	33820-53-0		1	5.78E+05		3.23E+09					
Isopropanol	67-63-0		1	3.83E+04	1.09E+05	3.23E+09					
Isopropyl Methyl Phosphonic Acid	1832-54-8	0.1	1			3.23E+09					
Isopropyltoluene, p-	99-87-6		1	1.18E+04	1.62E+02	3.23E+09					
Isosafrole	120-58-1		1	3.42E+03	2.04E+01	3.23E+09					
Isoxaben	82558-50-7	0.1	1			3.23E+09					
JP-4	50815-00-4		1			3.23E+09					
JP-5/JP-8	8002-20-6		1			3.23E+09					
JP-7	NA		1			3.23E+09					
Kerb	23950-58-5	0.1	1			3.23E+09					
Kerosene	8008-20-6		1			3.23E+09					
Lactofen	77501-63-4	0.1	1			3.23E+09					
Lactonitrile	78-97-7	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Hydrazine Sulfate	10034-93-2								6.52E+00 ca
Hydrogen Chloride	7647-01-0						5.66E+09	5.66E+09	5.66E+09 max
Hydrogen Cyanide	74-90-8				4.02E+03		5.05E+03	2.24E+03	2.24E+03 nc
Hydrogen Fluoride	7664-39-3				2.68E+05		3.96E+09	2.68E+05	2.68E+05 max
Hydrogen Selenide	77830-70-5								
Hydrogen Sulfate	12143-45-2								
Hydrogen Sulfide	7783-06-4						5.66E+08	5.66E+08	5.66E+08 max
Hydroquinone	123-31-9				2.68E+05	9.38E+05		2.08E+05	2.53E+02 ca
Imazalil	35554-44-0				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Imazaquin	81335-37-7				1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Indeno[1,2,3-cd]pyrene	193-39-5								7.63E+00 ca
Indium	7440-74-6								
Iodide	20461-54-5								
Iodine	7553-56-2				6.70E+04			6.70E+04	6.70E+04 nc
Iodomethane	74-88-4								
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6								
Iprodione	36734-19-7				2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Iron	7439-89-6				4.69E+06			4.69E+06	4.69E+06 max
Iron Sulfide	11126-12-8								
Isobutyl Alcohol	78-83-1				2.01E+06			2.01E+06	2.01E+06 sat
Isodrin	465-73-6								
Isophorone	78-59-1				1.34E+06	4.69E+06	5.66E+11	1.04E+06	1.60E+04 ca*
Isopropalin	33820-53-0				1.01E+05			1.01E+05	1.01E+05 max
Isopropanol	67-63-0				1.34E+07		6.70E+05	6.38E+05	6.38E+05 sat
Isopropyl Methyl Phosphonic Acid	1832-54-8				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Isopropyltoluene, p-	99-87-6								
Isosafrole	120-58-1								
Isoxaben	82558-50-7				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
JP-4	50815-00-4								
JP-5/JP-8	8002-20-6								
JP-7	NA						8.50E+10	8.50E+10	8.50E+10 max
Kerb	23950-58-5				5.03E+05	1.76E+06		3.91E+05	3.91E+05 max
Kerosene	8008-20-6								
Lactofen	77501-63-4				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Lactonitrile	78-97-7								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Lanthanum	7439-91-0	No	No									1
Lead Alkyls	NA	No	No									1
Lead Chromate	7758-97-6	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Lead Phosphate	7446-27-7	No	No	8.50E-03	U	1.20E-05	U					1
Lead acetate	301-04-2	No	No	2.80E-01	U	8.00E-05	U					1
Lead and Compounds	7439-92-1	No	No									1
Lead subacetate	1335-32-6	No	No	8.50E-03	U	1.20E-05	U					1
Linuron	330-55-2	No	No					2.00E-03	U			1
Lithium	7439-93-2	No	No					2.00E-03	U			1
Lithium Perchlorate	7791-03-9	No	No					7.00E-04	U			1
Londax	83055-99-6	No	No					2.00E-01	U			1
Lutetium	7439-94-3	No	No									1
MCPA	94-74-6	No	No					5.00E-04	U			1
MCPB	94-81-5	No	No					1.00E-02	U			1
MCPP	93-65-2	No	No					1.00E-03	U			1
Magnesium	7439-95-4	No	No									1
Magnesium Chlorate	10326-21-3	No	No									1
Malathion	121-75-5	No	No					2.00E-02	U			1
Maleic Anhydride	108-31-6	No	No					1.00E-01	U	7.00E-04	U	1
Maleic Hydrazide	123-33-1	No	No					5.00E-01	U			1
Malononitrile	109-77-3	No	No					1.00E-04	U			1
Mancozeb	8018-01-7	No	No					3.00E-02	U			1
Maneb	12427-38-2	No	No					5.00E-03	U			1
Manganese (Non-diet)	7439-96-5	No	No					2.40E-02	U	5.00E-05	U	0.04
Mechlorethamine	51-75-2	No	No									1
Mephosfolan	950-10-7	No	No					9.00E-05	U			1
Mepiquat Chloride	24307-26-4	No	No					3.00E-02	U			1
Mercuric Chloride	7487-94-7	No	No					3.00E-04	U	3.00E-04	U	0.07
Mercury (elemental)	7439-97-6	No	Yes							3.00E-04	U	1
Merphos	150-50-5	No	Yes					3.00E-05	U			1
Merphos Oxide	78-48-8	No	No					3.00E-05	U			1
Metalaxyl	57837-19-1	No	No					6.00E-02	U			1
Methacrylonitrile	126-98-7	No	Yes					1.00E-04	U	3.00E-02	U	1
Methamidophos	10265-92-6	No	No					5.00E-05	U			1
Methanol	67-56-1	No	Yes					2.00E+00	U	2.00E+01	U	1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Lanthanum	7439-91-0		1			3.23E+09					
Lead Alkyls	NA	0.1	1			3.23E+09					
Lead Chromate	7758-97-6		1			3.23E+09	1.33E+01		3.00E+03	1.32E+01	
Lead Phosphate	7446-27-7		1			3.23E+09	2.30E+03		6.88E+07	2.30E+03	
Lead acetate	301-04-2	0.1	1			3.23E+09	6.98E+01	2.44E+02	1.03E+07	5.43E+01	
Lead and Compounds	7439-92-1		1			3.23E+09					
Lead subacetate	1335-32-6	0.1	1			3.23E+09	2.30E+03	8.05E+03	6.88E+07	1.79E+03	
Linuron	330-55-2	0.1	1			3.23E+09					
Lithium	7439-93-2		1			3.23E+09					
Lithium Perchlorate	7791-03-9		1			3.23E+09					
Londax	83055-99-6	0.1	1			3.23E+09					
Lutetium	7439-94-3		1			3.23E+09					
MCPA	94-74-6	0.1	1			3.23E+09					
MCPB	94-81-5	0.1	1			3.23E+09					
MCPP	93-65-2	0.1	1			3.23E+09					
Magnesium	7439-95-4		1			3.23E+09					
Magnesium Chlorate	10326-21-3		1			3.23E+09					
Malathion	121-75-5	0.1	1			3.23E+09					
Maleic Anhydride	108-31-6	0.1	1			3.23E+09					
Maleic Hydrazide	123-33-1	0.1	1			3.23E+09					
Malononitrile	109-77-3	0.1	1			3.23E+09					
Mancozeb	8018-01-7	0.1	1			3.23E+09					
Maneb	12427-38-2	0.1	1			3.23E+09					
Manganese (Non-diet)	7439-96-5		1			3.23E+09					
Mechlorethamine	51-75-2	0.1	1			3.23E+09					
Mephosfolan	950-10-7	0.1	1			3.23E+09					
Mepiquat Chloride	24307-26-4	0.1	1			3.23E+09					
Mercuric Chloride	7487-94-7		1			3.23E+09					
Mercury (elemental)	7439-97-6		1	4.16E+04	3.13E+00	3.23E+09					
Merphos	150-50-5		1	2.67E+06		3.23E+09					
Merphos Oxide	78-48-8	0.1	1			3.23E+09					
Metalaxyl	57837-19-1	0.1	1			3.23E+09					
Methacrylonitrile	126-98-7		1	9.38E+03	4.59E+03	3.23E+09					
Methamidophos	10265-92-6	0.1	1			3.23E+09					
Methanol	67-56-1		1	4.01E+04	1.06E+05	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Lanthanum	7439-91-0								
Lead Alkyls	NA								
Lead Chromate	7758-97-6				1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Lead Phosphate	7446-27-7								2.30E+03 ca
Lead acetate	301-04-2								5.43E+01 ca
Lead and Compounds	7439-92-1			4.00E+02					4.00E+02 nc
Lead subacetate	1335-32-6								1.79E+03 ca
Linuron	330-55-2				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Lithium	7439-93-2				1.34E+04			1.34E+04	1.34E+04 nc
Lithium Perchlorate	7791-03-9				4.69E+03			4.69E+03	4.69E+03 nc
Londax	83055-99-6				1.34E+06	4.69E+06		1.04E+06	1.04E+06 max
Lutetium	7439-94-3								
MCPA	94-74-6				3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
MCPB	94-81-5				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
MCPP	93-65-2				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Magnesium	7439-95-4								
Magnesium Chlorate	10326-21-3								
Malathion	121-75-5				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Maleic Anhydride	108-31-6				6.70E+05	2.34E+06	1.98E+08	5.20E+05	5.20E+05 max
Maleic Hydrazide	123-33-1				3.35E+06	1.17E+07		2.61E+06	2.61E+06 max
Malononitrile	109-77-3				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Mancozeb	8018-01-7				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Maneb	12427-38-2				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Manganese (Non-diet)	7439-96-5				1.61E+05		1.42E+07	1.59E+05	1.59E+05 max
Mechlorethamine	51-75-2								
Mephosfolan	950-10-7				6.03E+02	2.11E+03		4.69E+02	4.69E+02 nc
Mepiquat Chloride	24307-26-4				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Mercuric Chloride	7487-94-7				2.01E+03		8.50E+07	2.01E+03	2.01E+03 nc
Mercury (elemental)	7439-97-6						1.09E+03	1.09E+03	1.09E+03 sat
Merphos	150-50-5				2.01E+02			2.01E+02	2.01E+02 nc
Merphos Oxide	78-48-8				2.01E+02	7.03E+02		1.56E+02	1.56E+02 nc
Metalaxyl	57837-19-1				4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Methacrylonitrile	126-98-7				6.70E+02		2.46E+04	6.52E+02	6.52E+02 nc
Methamidophos	10265-92-6				3.35E+02	1.17E+03		2.61E+02	2.61E+02 nc
Methanol	67-56-1				1.34E+07		7.02E+07	1.13E+07	1.13E+07 sat

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Methapyrilene	91-80-5	No	No									1
Methidathion	950-37-8	No	No					1.00E-03	U			1
Methomyl	16752-77-5	No	No					2.50E-02	U			1
Methoxy-5-nitroaniline, 2-	99-59-2	No	No	4.90E-02	U	1.40E-05	U					1
Methoxychlor	72-43-5	No	No					5.00E-03	U			1
Methoxyethanol Acetate, 2-	110-49-6	No	Yes					8.00E-03	U	1.00E-03	U	1
Methoxyethanol, 2-	109-86-4	No	Yes					5.00E-03	U	2.00E-02	U	1
Methyl Acetate	79-20-9	No	Yes					1.00E+00	U			1
Methyl Acrylate	96-33-3	No	Yes					3.00E-02	U	2.00E-02	U	1
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes					6.00E-01	U	5.00E+00	U	1
Methyl Hydrazine	60-34-4	No	Yes			1.00E-03	U	1.00E-03	U	2.00E-05	U	1
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	No	Yes					8.00E-02	U	3.00E+00	U	1
Methyl Isocyanate	624-83-9	No	Yes							1.00E-03	U	1
Methyl Mercaptan	74-93-1	No	Yes									1
Methyl Mercury	22967-92-6	No	No					1.00E-04	U			1
Methyl Methacrylate	80-62-6	No	Yes					1.40E+00	U	7.00E-01	U	1
Methyl Parathion	298-00-0	No	No					2.50E-04	U			1
Methyl Phosphonic Acid	993-13-5	No	No					6.00E-02	U			1
Methyl Styrene (Mixed Isomers)	25013-15-4	No	Yes					6.00E-03	U	4.00E-02	U	1
Methyl dicyclohexylamine, n-	7560-83-0	No	Yes									1
Methyl methanesulfonate	66-27-3	No	No	9.90E-02	U	2.80E-05	U					1
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	U	2.60E-07	U			3.00E+00	U	1
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	No	No					3.00E-04	U			1
Methyl-2-Pentanol, 4-	108-11-2	No	Yes									1
Methyl-5-Nitroaniline, 2-	99-55-8	No	No	9.00E-03	U			2.00E-02	U			1
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	No	No	8.30E+00	U	2.40E-03	U					1
Methylaniline Hydrochloride, 2-	636-21-5	No	No	1.30E-01	U	3.70E-05	U					1
Methylarsonic acid	124-58-3	No	No					1.00E-02	U			1
Methylaziridine, 2-	75-55-8	No	Yes									1
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	No	No					2.00E-04	U			1
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	No	No	1.00E-01	U			3.00E-04	U			1
Methylcholanthrene, 3-	56-49-5	Yes	No	2.20E+01	U	6.30E-03	U					1
Methylcyclohexane	108-87-2	No	Yes									1
Methylcyclohexylamine, n-	100-60-7	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Methapyrilene	91-80-5	0.1	1			3.23E+09					
Methidathion	950-37-8	0.1	1			3.23E+09					
Methomyl	16752-77-5	0.1	1			3.23E+09					
Methoxy-5-nitroaniline, 2-	99-59-2	0.1	1			3.23E+09	3.99E+02	1.40E+03	5.90E+07	3.10E+02	
Methoxychlor	72-43-5	0.1	1			3.23E+09					
Methoxyethanol Acetate, 2-	110-49-6		1	1.71E+05	1.15E+05	3.23E+09					
Methoxyethanol, 2-	109-86-4		1	1.39E+05	1.06E+05	3.23E+09					
Methyl Acetate	79-20-9		1	1.12E+04	2.90E+04	3.23E+09					
Methyl Acrylate	96-33-3		1	9.62E+03	6.75E+03	3.23E+09					
Methyl Ethyl Ketone (2-Butanone)	78-93-3		1	1.68E+04	2.84E+04	3.23E+09					
Methyl Hydrazine	60-34-4		1	2.16E+05	1.80E+05	3.23E+09			5.51E+01	5.51E+01	
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1		1	1.46E+04	3.36E+03	3.23E+09					
Methyl Isocyanate	624-83-9		1	6.08E+03	1.67E+04	3.23E+09					
Methyl Mercaptan	74-93-1		1	2.46E+03	3.13E+03	3.23E+09					
Methyl Mercury	22967-92-6		1			3.23E+09					
Methyl Methacrylate	80-62-6		1	8.75E+03	2.36E+03	3.23E+09					
Methyl Parathion	298-00-0	0.1	1			3.23E+09					
Methyl Phosphonic Acid	993-13-5	0.1	1			3.23E+09					
Methyl Styrene (Mixed Isomers)	25013-15-4		1	1.65E+04	3.93E+02	3.23E+09					
Methyl dicyclohexylamine, n-	7560-83-0		1	6.54E+04		3.23E+09					
Methyl methanesulfonate	66-27-3	0.1	1			3.23E+09	1.97E+02	6.91E+02	2.95E+07	1.54E+02	
Methyl tert-Butyl Ether (MTBE)	1634-04-4		1	6.76E+03	8.88E+03	3.23E+09	1.09E+04		6.65E+03	4.12E+03	
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	0.1	1			3.23E+09					
Methyl-2-Pentanol, 4-	108-11-2		1	2.37E+04	2.45E+03	3.23E+09					
Methyl-5-Nitroaniline, 2-	99-55-8	0.1	1			3.23E+09	2.17E+03	7.60E+03		1.69E+03	
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	0.1	1			3.23E+09	2.36E+00	8.24E+00	3.44E+05	1.83E+00	
Methylaniline Hydrochloride, 2-	636-21-5	0.1	1			3.23E+09	1.50E+02	5.26E+02	2.23E+07	1.17E+02	
Methylarsonic acid	124-58-3	0.1	1			3.23E+09					
Methylaziridine, 2-	75-55-8		1	4.41E+04	1.87E+05	3.23E+09					
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	0.1	1			3.23E+09					
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	0.1	1			3.23E+09	1.95E+02	6.84E+02		1.52E+02	
Methylcholanthrene, 3-	56-49-5	0.1	1			3.23E+09	3.02E-01	2.05E+00	7.15E+04	2.63E-01	
Methylcyclohexane	108-87-2		1	1.37E+03	6.77E+01	3.23E+09					
Methylcyclohexylamine, n-	100-60-7		1	4.39E+04	2.81E+04	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Methapyrilene	91-80-5								
Methidathion	950-37-8				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Methomyl	16752-77-5				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Methoxy-5-nitroaniline, 2-	99-59-2								3.10E+02 ca
Methoxychlor	72-43-5				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Methoxyethanol Acetate, 2-	110-49-6				5.36E+04		1.50E+04	1.17E+04	1.17E+04 nc
Methoxyethanol, 2-	109-86-4				3.35E+04		2.44E+05	2.95E+04	2.95E+04 nc
Methyl Acetate	79-20-9				6.70E+06			6.70E+06	6.70E+06 sat
Methyl Acrylate	96-33-3				2.01E+05		1.68E+04	1.55E+04	1.55E+04 sat
Methyl Ethyl Ketone (2-Butanone)	78-93-3				4.02E+06		7.36E+06	2.60E+06	2.60E+06 sat
Methyl Hydrazine	60-34-4				6.70E+03		3.78E+02	3.58E+02	5.51E+01 ca**
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1				5.36E+05		3.83E+06	4.70E+05	4.70E+05 sat
Methyl Isocyanate	624-83-9						5.32E+02	5.32E+02	5.32E+02 nc
Methyl Mercaptan	74-93-1								
Methyl Mercury	22967-92-6				6.70E+02			6.70E+02	6.70E+02 nc
Methyl Methacrylate	80-62-6				9.38E+06		5.36E+05	5.07E+05	5.07E+05 sat
Methyl Parathion	298-00-0				1.68E+03	5.86E+03		1.30E+03	1.30E+03 nc
Methyl Phosphonic Acid	993-13-5				4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Methyl Styrene (Mixed Isomers)	25013-15-4				4.02E+04		5.80E+04	2.37E+04	2.37E+04 sat
Methyl dicyclohexylamine, n-	7560-83-0								
Methyl methanesulfonate	66-27-3								1.54E+02 ca
Methyl tert-Butyl Ether (MTBE)	1634-04-4						1.78E+06	1.78E+06	4.12E+03 ca
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Methyl-2-Pentanol, 4-	108-11-2								
Methyl-5-Nitroaniline, 2-	99-55-8				1.34E+05	4.69E+05		1.04E+05	1.69E+03 ca*
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7								1.83E+00 ca
Methylaniline Hydrochloride, 2-	636-21-5								1.17E+02 ca
Methylarsonic acid	124-58-3				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Methylaziridine, 2-	75-55-8								
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7				1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9				2.01E+03	7.03E+03		1.56E+03	1.52E+02 ca*
Methylcholanthrene, 3-	56-49-5								2.63E-01 ca
Methylcyclohexane	108-87-2								
Methylcyclohexylamine, n-	100-60-7								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Methylcyclopentane	96-37-7	No	Yes									1
Methylene Chloride	75-09-2	Yes	Yes	2.00E-03	U	1.00E-08	U	6.00E-03	U	6.00E-01	U	1
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	Yes	No	1.00E-01	U	4.30E-04	U	2.00E-03	U			1
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	No	No	4.60E-02	U	1.30E-05	U					1
Methylenebisbenzenamine, 4,4'-	101-77-9	No	No	1.60E+00	U	4.60E-04	U			2.00E-02	U	1
Methylenediphenyl Diisocyanate	101-68-8	No	No							6.00E-04	U	1
Methylisothiocyanate	556-61-6	No	Yes									1
Methylnaphthalene	1321-94-4	No	Yes									1
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	U			7.00E-02	U			1
Methylnaphthalene, 2-	91-57-6	No	Yes					4.00E-03	U			1
Methylstyrene, Alpha-	98-83-9	No	Yes					7.00E-02	U			1
Methyltriethyl Lead	1762-28-3	No	Yes									1
Metolachlor	51218-45-2	No	No					1.50E-01	U			1
Metribuzin	21087-64-9	No	No					2.50E-02	U			1
Mineral oils	8012-95-1	No	Yes					3.00E+00	U			1
Mirex	2385-85-5	No	Yes	1.80E+01	U	5.10E-03	U	2.00E-04	U			1
Molinate	2212-67-1	No	No					2.00E-03	U			1
Molybdenum	7439-98-7	No	No					5.00E-03	U			1
Monoaluminum phosphate	13530-50-2	No	No					4.86E+01	U			1
Monoammonium phosphate	7722-76-1	No	No					4.86E+01	U			1
Monobutyltin Compounds	NA	No	No									1
Monocalcium phosphate	7758-23-8	No	No					4.86E+01	U			1
Monochloramine	10599-90-3	No	No					1.00E-01	U			1
Monochlorobutanes	25154-42-1	No	No									1
Monochlorophenols (total)	NA	No	No									1
Monocyclic aromatic hydrocarbons (total)	NA	No	No									1
Monomagnesium phosphate	7757-86-0	No	No					4.86E+01	U			1
Monomethylaniline	100-61-8	No	No					2.00E-03	U			1
Monopotassium phosphate	7778-77-0	No	No					4.86E+01	U			1
Monosodium phosphate	7558-80-7	No	No					4.86E+01	U			1
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No					3.00E-04	U			1
N-Methyl dithiocarbamate	137-42-8	No	No									1
Naled	300-76-5	No	Yes					2.00E-03	U			1
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes					3.00E-02	U	1.00E-01	U	1
Naphthalene	91-20-3	No	Yes			3.40E-05	U	2.00E-02	U	3.00E-03	U	1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Methylcyclopentane	96-37-7		1	1.22E+03	1.54E+02	3.23E+09					
Methylene Chloride	75-09-2		1	3.02E+03	3.32E+03	3.23E+09	3.32E+03		4.21E+04	3.08E+03	
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	0.1	1			3.23E+09	6.64E+01	4.50E+02	1.05E+06	5.79E+01	
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	0.1	1			3.23E+09	4.25E+02	1.49E+03	6.35E+07	3.30E+02	
Methylenebisbenzenamine, 4,4'-	101-77-9	0.1	1			3.23E+09	1.22E+01	4.27E+01	1.80E+06	9.50E+00	
Methylenediphenyl Diisocyanate	101-68-8	0.1	1			3.23E+09					
Methylisothiocyanate	556-61-6		1	2.04E+04		3.23E+09					
Methylnaphthalene	1321-94-4		1	8.08E+04		3.23E+09					
Methylnaphthalene, 1-	90-12-0	0.13	1	8.09E+04		3.23E+09	6.74E+02	1.81E+03		4.91E+02	
Methylnaphthalene, 2-	91-57-6	0.13	1	8.00E+04		3.23E+09					
Methylstyrene, Alpha-	98-83-9		1	1.77E+04	5.00E+02	3.23E+09					
Methyltriethyl Lead	1762-28-3		1	2.24E+03	4.81E+03	3.23E+09					
Metolachlor	51218-45-2	0.1	1			3.23E+09					
Metribuzin	21087-64-9	0.1	1			3.23E+09					
Mineral oils	8012-95-1		1	1.90E+03	3.41E-01	3.23E+09					
Mirex	2385-85-5		1	1.18E+06		3.23E+09	1.09E+00		5.92E+01	1.07E+00	
Molinate	2212-67-1	0.1	1			3.23E+09					
Molybdenum	7439-98-7		1			3.23E+09					
Monoaluminum phosphate	13530-50-2		1			3.23E+09					
Monoammonium phosphate	7722-76-1		1			3.23E+09					
Monobutyltin Compounds	NA	0.1	1			3.23E+09					
Monocalcium phosphate	7758-23-8		1			3.23E+09					
Monochloramine	10599-90-3		1			3.23E+09					
Monochlorobutanes	25154-42-1	0.1	1			3.23E+09					
Monochlorophenols (total)	NA	0.1	1			3.23E+09					
Monocyclic aromatic hydrocarbons (total)	NA	0.1	1			3.23E+09					
Monomagnesium phosphate	7757-86-0		1			3.23E+09					
Monomethylaniline	100-61-8	0.1	1			3.23E+09					
Monopotassium phosphate	7778-77-0		1			3.23E+09					
Monosodium phosphate	7558-80-7		1			3.23E+09					
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	0.1	1			3.23E+09					
N-Methyl dithiocarbamate	137-42-8	0.1	1			3.23E+09					
Naled	300-76-5		1	7.87E+04		3.23E+09					
Naphtha, High Flash Aromatic (HFAN)	64742-95-6		1			3.23E+09					
Naphthalene	91-20-3	0.13	1	6.38E+04		3.23E+09			4.79E+02	4.79E+02	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Methylcyclopentane	96-37-7								
Methylene Chloride	75-09-2				4.02E+04		1.59E+05	3.21E+04	3.08E+03 ca*
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4				1.34E+04	4.69E+04		1.04E+04	5.79E+01 ca
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1								3.30E+02 ca
Methylenebisbenzenamine, 4,4'-	101-77-9						5.66E+09	5.66E+09	9.50E+00 ca
Methylenediphenyl Diisocyanate	101-68-8						1.70E+08	1.70E+08	1.70E+08 max
Methylisothiocyanate	556-61-6								
Methylnaphthalene	1321-94-4								
Methylnaphthalene, 1-	90-12-0				4.69E+05	1.26E+06		3.42E+05	4.91E+02 ca
Methylnaphthalene, 2-	91-57-6				2.68E+04	7.22E+04		1.95E+04	1.95E+04 nc
Methylstyrene, Alpha-	98-83-9				4.69E+05			4.69E+05	4.69E+05 sat
Methyltriethyl Lead	1762-28-3								
Metolachlor	51218-45-2				1.01E+06	3.52E+06		7.82E+05	7.82E+05 max
Metribuzin	21087-64-9				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Mineral oils	8012-95-1				2.01E+07			2.01E+07	2.01E+07 sat
Mirex	2385-85-5				1.34E+03			1.34E+03	1.07E+00 ca
Molinate	2212-67-1				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Molybdenum	7439-98-7				3.35E+04			3.35E+04	3.35E+04 nc
Monoaluminum phosphate	13530-50-2				3.26E+08			3.26E+08	3.26E+08 max
Monoammonium phosphate	7722-76-1				3.26E+08			3.26E+08	3.26E+08 max
Monobutyltin Compounds	NA								
Monocalcium phosphate	7758-23-8				3.26E+08			3.26E+08	3.26E+08 max
Monochloramine	10599-90-3				6.70E+05			6.70E+05	6.70E+05 max
Monochlorobutanes	25154-42-1								
Monochlorophenols (total)	NA								
Monocyclic aromatic hydrocarbons (total)	NA								
Monomagnesium phosphate	7757-86-0				3.26E+08			3.26E+08	3.26E+08 max
Monomethylaniline	100-61-8				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Monopotassium phosphate	7778-77-0				3.26E+08			3.26E+08	3.26E+08 max
Monosodium phosphate	7558-80-7				3.26E+08			3.26E+08	3.26E+08 max
N,N'-Diphenyl-1,4-benzenediamine	74-31-7				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
N-Methyl dithiocarbamate	137-42-8								
Naled	300-76-5				1.34E+04			1.34E+04	1.34E+04 nc
Naphtha, High Flash Aromatic (HFAN)	64742-95-6				2.01E+05		2.83E+10	2.01E+05	2.01E+05 max
Naphthalene	91-20-3				1.34E+05	3.61E+05	1.68E+04	1.43E+04	4.79E+02 ca*

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Naphthol, 2-	135-19-3	No	No									1
Naphthoquinone, 1,4-	130-15-4	No	No									1
Naphthylamine, 1-	134-32-7	No	No									1
Naphthylamine, 2-	91-59-8	No	No	1.80E+00	U	0.00E+00	U					1
Napropamide	15299-99-7	No	No					1.00E-01	U			1
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No									1
Niagara Blue 4B	2429-74-5	No	No									1
Nickel Acetate	373-02-4	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Carbonate	3333-67-3	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Carbonyl	13463-39-3	No	Yes			2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nickel Hydroxide	12054-48-7	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickel Oxide	1313-99-1	No	No			2.60E-04	U	1.10E-02	U	2.00E-05	U	0.04
Nickel Refinery Dust	NA	No	No			2.40E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickel Soluble Salts	7440-02-0	No	No			2.60E-04	U	2.00E-02	U	9.00E-05	U	0.04
Nickel Subsulfide	12035-72-2	No	No	1.70E+00	U	4.80E-04	U	1.10E-02	U	1.40E-05	U	0.04
Nickelocene	1271-28-9	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1
Nicotinonitrile	100-54-9	No	No									1
Niobium	7440-03-1	No	No									1
Nitrapyrin	1929-82-4	No	Yes									1
Nitrate	14797-55-8	No	No					1.60E+00	U			1
Nitrate + Nitrite (as N)	NA	No	No									1
Nitric Acid	7697-37-2	No	No									1
Nitric Oxide	10102-43-9	No	Yes									1
Nitrite	14797-65-0	No	No					1.00E-01	U			1
Nitroaniline, 2-	88-74-4	No	No					1.00E-02	U	5.00E-05	U	1
Nitroaniline, 3-	99-09-2	No	No									1
Nitroaniline, 4-	100-01-6	No	No	2.00E-02	U			4.00E-03	U	6.00E-03	U	1
Nitrobenzene	98-95-3	No	Yes			4.00E-05	U	2.00E-03	U	9.00E-03	U	1
Nitrobiphenyl, 4-	92-93-3	No	No									1
Nitrocellulose	9004-70-0	No	No					3.00E+03	U			1
Nitrodiphenylamine, 2-	119-75-5	No	No									1
Nitrofurantoin	67-20-9	No	No					7.00E-02	U			1
Nitrofurazone	59-87-0	No	No	1.30E+00	U	3.70E-04	U					1
Nitrogen Dioxide	10102-44-0	No	Yes									1
Nitroglycerin	55-63-0	No	No	1.70E-02	U			1.00E-04	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Naphthol, 2-	135-19-3	0.1	1			3.23E+09					
Naphthoquinone, 1,4-	130-15-4	0.1	1			3.23E+09					
Naphthylamine, 1-	134-32-7	0.1	1			3.23E+09					
Naphthylamine, 2-	91-59-8	0.1	1			3.23E+09	1.09E+01	3.80E+01		8.45E+00	
Napropamide	15299-99-7	0.1	1			3.23E+09					
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8		1			3.23E+09					
Niagara Blue 4B	2429-74-5	0.1	1			3.23E+09					
Nickel Acetate	373-02-4	0.1	1			3.23E+09			3.18E+06	3.18E+06	
Nickel Carbonate	3333-67-3	0.1	1			3.23E+09			3.18E+06	3.18E+06	
Nickel Carbonyl	13463-39-3		1			3.23E+09			3.18E+06	3.18E+06	
Nickel Hydroxide	12054-48-7		1			3.23E+09			3.18E+06	3.18E+06	
Nickel Oxide	1313-99-1		1			3.23E+09			3.18E+06	3.18E+06	
Nickel Refinery Dust	NA		1			3.23E+09			3.44E+06	3.44E+06	
Nickel Soluble Salts	7440-02-0		1			3.23E+09			3.18E+06	3.18E+06	
Nickel Subsulfide	12035-72-2		1			3.23E+09	1.15E+01		1.72E+06	1.15E+01	
Nickelocene	1271-28-9	0.1	1			3.23E+09			3.18E+06	3.18E+06	
Nicotinonitrile	100-54-9	0.1	1			3.23E+09					
Niobium	7440-03-1		1			3.23E+09					
Nitrapyrin	1929-82-4		1	3.05E+05		3.23E+09					
Nitrate	14797-55-8		1			3.23E+09					
Nitrate + Nitrite (as N)	NA		1			3.23E+09					
Nitric Acid	7697-37-2	0.1	1			3.23E+09					
Nitric Oxide	10102-43-9		1			3.23E+09					
Nitrite	14797-65-0		1			3.23E+09					
Nitroaniline, 2-	88-74-4	0.1	1			3.23E+09					
Nitroaniline, 3-	99-09-2	0.1	1			3.23E+09					
Nitroaniline, 4-	100-01-6	0.1	1			3.23E+09	9.77E+02	3.42E+03		7.60E+02	
Nitrobenzene	98-95-3		1	1.01E+05	3.04E+03	3.23E+09			6.44E+02	6.44E+02	
Nitrobiphenyl, 4-	92-93-3	0.1	1			3.23E+09					
Nitrocellulose	9004-70-0	0.1	1			3.23E+09					
Nitrodiphenylamine, 2-	119-75-5	0.1	1			3.23E+09					
Nitrofurantoin	67-20-9	0.1	1			3.23E+09					
Nitrofurazone	59-87-0	0.1	1			3.23E+09	1.50E+01	5.26E+01	2.23E+06	1.17E+01	
Nitrogen Dioxide	10102-44-0		1			3.23E+09					
Nitroglycerin	55-63-0	0.1	1			3.23E+09	1.15E+03	4.02E+03		8.94E+02	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Naphthol, 2-	135-19-3								
Naphthoquinone, 1,4-	130-15-4								
Naphthylamine, 1-	134-32-7								
Naphthylamine, 2-	91-59-8								8.45E+00 ca
Napropamide	15299-99-7				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8								
Niagara Blue 4B	2429-74-5								
Nickel Acetate	373-02-4				7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nickel Carbonate	3333-67-3				7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nickel Carbonyl	13463-39-3				7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Hydroxide	12054-48-7				7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Oxide	1313-99-1				7.37E+04		5.66E+06	7.28E+04	7.28E+04 nc
Nickel Refinery Dust	NA				7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Soluble Salts	7440-02-0				1.34E+05		2.55E+07	1.33E+05	1.33E+05 max
Nickel Subsulfide	12035-72-2				7.37E+04		3.96E+06	7.24E+04	1.15E+01 ca
Nickelocene	1271-28-9				7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nicotinonitrile	100-54-9								
Niobium	7440-03-1								
Nitrapyrin	1929-82-4								
Nitrate	14797-55-8				1.07E+07			1.07E+07	1.07E+07 max
Nitrate + Nitrite (as N)	NA								
Nitric Acid	7697-37-2								
Nitric Oxide	10102-43-9								
Nitrite	14797-65-0				6.70E+05			6.70E+05	6.70E+05 max
Nitroaniline, 2-	88-74-4				6.70E+04	2.34E+05	1.42E+07	5.19E+04	5.19E+04 nc
Nitroaniline, 3-	99-09-2								
Nitroaniline, 4-	100-01-6				2.68E+04	9.38E+04	1.70E+09	2.08E+04	7.60E+02 ca*
Nitrobenzene	98-95-3				1.34E+04		7.95E+04	1.15E+04	6.44E+02 ca*
Nitrobiphenyl, 4-	92-93-3								
Nitrocellulose	9004-70-0				2.01E+10	7.03E+10		1.56E+10	1.56E+10 max
Nitrodiphenylamine, 2-	119-75-5								
Nitrofurantoin	67-20-9				4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Nitrofurazone	59-87-0								1.17E+01 ca
Nitrogen Dioxide	10102-44-0								
Nitroglycerin	55-63-0				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Nitroguanidine	556-88-7	No	No					1.00E-01	U			1
Nitromethane	75-52-5	No	Yes			8.80E-06	U			5.00E-03	U	1
Nitrophenol, 2-	88-75-5	No	Yes									1
Nitrophenol, 2-amino-4-	99-57-0	No	No									1
Nitrophenol, 3-	554-84-7	No	No									1
Nitrophenol, 4-	100-02-7	No	No									1
Nitrophenol, 4-amino-2-	119-34-6	No	No									1
Nitropropane, 2-	79-46-9	No	Yes			2.70E-03	U			2.00E-02	U	1
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	U	1.10E-04	U					1
Nitroquinoline-1-oxide. 4-	56-57-5	No	No									1
Nitroso-N-ethylurea, N-	759-73-9	Yes	No	2.70E+01	U	7.70E-03	U					1
Nitroso-N-methylurea, N-	684-93-5	Yes	No	1.20E+02	U	3.40E-02	U					1
Nitroso-di-N-butylamine, N-	924-16-3	No	Yes	5.40E+00	U	1.60E-03	U					1
Nitroso-di-N-propylamine, N-	621-64-7	No	No	7.00E+00	U	2.00E-03	U					1
Nitrosodiethanolamine, N-	1116-54-7	No	No	2.80E+00	U	8.00E-04	U					1
Nitrosodiethylamine, N-	55-18-5	Yes	No	1.50E+02	U	4.30E-02	U					1
Nitrosodimethylamine, N-	62-75-9	Yes	Yes	5.10E+01	U	1.40E-02	U	8.00E-06	U	4.00E-05	U	1
Nitrosodiphenylamine, N-	86-30-6	No	No	4.90E-03	U	2.60E-06	U					1
Nitrosomethylethylamine, N-	10595-95-6	No	Yes	2.20E+01	U	6.30E-03	U					1
Nitrosomethylvinylamine, N-	4549-40-0	No	Yes									1
Nitrosomorpholine [N-]	59-89-2	No	No	6.70E+00	U	1.90E-03	U					1
Nitrosopiperidine [N-]	100-75-4	No	No	9.40E+00	U	2.70E-03	U					1
Nitrosopyrrolidine, N-	930-55-2	No	No	2.10E+00	U	6.10E-04	U					1
Nitrotoluene, 4-Amino-2-	119-32-4	No	No									1
Nitrotoluene, m-	99-08-1	No	No					1.00E-04	U			1
Nitrotoluene, o-	88-72-2	No	Yes	2.20E-01	U			9.00E-04	U			1
Nitrotoluene, p-	99-99-0	No	No	1.60E-02	U			4.00E-03	U			1
Nonachlor, trans-	39765-80-5	No	Yes									1
Nonane, n-	111-84-2	No	Yes					3.00E-04	U	2.00E-02	U	1
Nonanol, n-	143-08-8	No	Yes									1
Norflurazon	27314-13-2	No	No					4.00E-02	U			1
Nustar	85509-19-9	No	No					7.00E-04	U			1
OCDD	3268-87-9	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
OCDF	39001-02-0	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
Octabromodiphenyl Ether	32536-52-0	No	No					3.00E-03	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Nitroguanidine	556-88-7	0.1	1			3.23E+09					
Nitromethane	75-52-5		1	2.34E+04	1.80E+04	3.23E+09			6.78E+02	6.78E+02	
Nitrophenol, 2-	88-75-5		1	1.65E+05		3.23E+09					
Nitrophenol, 2-amino-4-	99-57-0	0.1	1			3.23E+09					
Nitrophenol, 3-	554-84-7	0.1	1			3.23E+09					
Nitrophenol, 4-	100-02-7	0.1	1			3.23E+09					
Nitrophenol, 4-amino-2-	119-34-6	0.1	1			3.23E+09					
Nitropropane, 2-	79-46-9		1	1.81E+04	4.86E+03	3.23E+09			1.71E+00	1.71E+00	
Nitropyrene, 4-	57835-92-4	0.13	1			3.23E+09	1.63E+01	4.38E+01	7.51E+06	1.19E+01	
Nitroquinoline-1-oxide. 4-	56-57-5	0.1	1			3.23E+09					
Nitroso-N-ethylurea, N-	759-73-9	0.1	1			3.23E+09	2.46E-01	1.67E+00	5.85E+04	2.14E-01	
Nitroso-N-methylurea, N-	684-93-5	0.1	1			3.23E+09	5.54E-02	3.75E-01	1.33E+04	4.82E-02	
Nitroso-di-N-butylamine, N-	924-16-3		1	3.35E+05		3.23E+09	3.62E+00		5.35E+01	3.39E+00	
Nitroso-di-N-propylamine, N-	621-64-7	0.1	1			3.23E+09	2.79E+00	9.77E+00	4.13E+05	2.17E+00	
Nitrosodiethanolamine, N-	1116-54-7	0.1	1			3.23E+09	6.98E+00	2.44E+01	1.03E+06	5.43E+00	
Nitrosodiethylamine, N-	55-18-5	0.1	1			3.23E+09	4.43E-02	3.00E-01	1.05E+04	3.86E-02	
Nitrosodimethylamine, N-	62-75-9		1	1.14E+05	2.37E+05	3.23E+09	1.30E-01		1.13E+00	1.17E-01	
Nitrosodiphenylamine, N-	86-30-6	0.1	1			3.23E+09	3.99E+03	1.40E+04	3.18E+08	3.10E+03	
Nitrosomethylethylamine, N-	10595-95-6		1	1.67E+05	1.08E+05	3.23E+09	8.89E-01		6.77E+00	7.85E-01	
Nitrosomethylvinylamine, N-	4549-40-0		1	1.12E+05	1.08E+04	3.23E+09					
Nitrosomorpholine [N-]	59-89-2	0.1	1			3.23E+09	2.92E+00	1.02E+01	4.35E+05	2.27E+00	
Nitrosopiperidine [N-]	100-75-4	0.1	1			3.23E+09	2.08E+00	7.28E+00	3.06E+05	1.62E+00	
Nitrosopyrrolidine, N-	930-55-2	0.1	1			3.23E+09	9.31E+00	3.26E+01	1.35E+06	7.24E+00	
Nitrotoluene, 4-Amino-2-	119-32-4	0.1	1			3.23E+09					
Nitrotoluene, m-	99-08-1	0.1	1			3.23E+09					
Nitrotoluene, o-	88-72-2		1	1.89E+05	1.51E+03	3.23E+09	8.89E+01			8.89E+01	
Nitrotoluene, p-	99-99-0	0.1	1			3.23E+09	1.22E+03	4.27E+03		9.50E+02	
Nonachlor, trans-	39765-80-5		1	3.73E+06		3.23E+09					
Nonane, n-	111-84-2		1	1.44E+03	6.86E+00	3.23E+09					
Nonanol, n-	143-08-8		1	6.41E+04	7.27E+01	3.23E+09					
Norflurazon	27314-13-2	0.1	1			3.23E+09					
Nustar	85509-19-9	0.1	1			3.23E+09					
OCDD	3268-87-9	0.03	1			3.23E+09	5.01E-01	5.85E+00	7.25E+04	4.62E-01	
OCDF	39001-02-0	0.03	1			3.23E+09	5.01E-01	5.85E+00	7.25E+04	4.62E-01	
Octabromodiphenyl Ether	32536-52-0	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Nitroguanidine	556-88-7				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Nitromethane	75-52-5						1.02E+04	1.02E+04	6.78E+02 ca*
Nitrophenol, 2-	88-75-5								
Nitrophenol, 2-amino-4-	99-57-0								
Nitrophenol, 3-	554-84-7								
Nitrophenol, 4-	100-02-7								
Nitrophenol, 4-amino-2-	119-34-6								
Nitropropane, 2-	79-46-9						3.17E+04	3.17E+04	1.71E+00 ca
Nitropyrene, 4-	57835-92-4								1.19E+01 ca
Nitroquinoline-1-oxide. 4-	56-57-5								
Nitroso-N-ethylurea, N-	759-73-9								2.14E-01 ca
Nitroso-N-methylurea, N-	684-93-5								4.82E-02 ca
Nitroso-di-N-butylamine, N-	924-16-3								3.39E+00 ca
Nitroso-di-N-propylamine, N-	621-64-7								2.17E+00 ca
Nitrosodiethanolamine, N-	1116-54-7								5.43E+00 ca
Nitrosodiethylamine, N-	55-18-5								3.86E-02 ca
Nitrosodimethylamine, N-	62-75-9				5.36E+01		3.98E+02	4.72E+01	1.17E-01 ca
Nitrosodiphenylamine, N-	86-30-6								3.10E+03 ca
Nitrosomethylethylamine, N-	10595-95-6								7.85E-01 ca
Nitrosomethylvinylamine, N-	4549-40-0								
Nitrosomorpholine [N-]	59-89-2								2.27E+00 ca
Nitrosopiperidine [N-]	100-75-4								1.62E+00 ca
Nitrosopyrrolidine, N-	930-55-2								7.24E+00 ca
Nitrotoluene, 4-Amino-2-	119-32-4								
Nitrotoluene, m-	99-08-1				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Nitrotoluene, o-	88-72-2				6.03E+03			6.03E+03	8.89E+01 ca*
Nitrotoluene, p-	99-99-0				2.68E+04	9.38E+04		2.08E+04	9.50E+02 ca*
Nonachlor, trans-	39765-80-5								
Nonane, n-	111-84-2				2.01E+03		2.52E+03	1.12E+03	1.12E+03 sat
Nonanol, n-	143-08-8								
Norflurazon	27314-13-2				2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Nustar	85509-19-9				4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
OCDD	3268-87-9				1.56E+01	1.82E+02	3.77E+07	1.44E+01	4.62E-01 ca*
OCDF	39001-02-0				1.56E+01	1.82E+02	3.77E+07	1.44E+01	4.62E-01 ca*
Octabromodiphenyl Ether	32536-52-0				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Octachlorostyrene	29082-74-4	No	Yes									1
Octadecanoic Acid	57-11-4	No	No									1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	No	No					5.00E-02	U			1
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	No	No									1
Octamethylpyrophosphoramide	152-16-9	No	No					2.00E-03	U			1
Octanol, n-	111-87-5	No	Yes									1
Octanone, 2-	111-13-7	No	Yes									1
Octanone, 3-	106-68-3	No	Yes									1
Octyl Phthalate, di-N-	117-84-0	No	No					1.00E-02	U			1
Oleic acid	112-80-1	Yes	Yes									1
Oleum	8014-95-7	No	No									1
Oryzalin	19044-88-3	No	No					5.00E-02	U			1
Oxadiazon	19666-30-9	No	No					5.00E-03	U			1
Oxamyl	23135-22-0	No	No					2.50E-02	U			1
Oxychlordane	27304-13-8	No	No									1
Ozone	10028-15-6	No	No									1
Paclobutrazol	76738-62-0	No	No					1.30E-02	U			1
Paraquat Dichloride	1910-42-5	No	No					4.50E-03	U			1
Parathion	56-38-2	No	No					6.00E-03	U			1
PeCDD, 2,3,7,8-	36088-22-9	No	No	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
PeCDF, 1,2,3,7,8-	57117-41-6	No	No	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1
PeCDF, 2,3,4,7,8-	57117-31-4	No	No	3.90E+04	U	1.14E+01	U	2.33E-09	U	1.33E-07	U	1
Pebulate	1114-71-2	No	Yes					5.00E-02	U			1
Pendimethalin	40487-42-1	No	No					4.00E-02	U			1
Pentabromodiphenyl Ether	32534-81-9	No	No					2.00E-03	U			1
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	No	No					1.00E-04	U			1
Pentachloroaniline	527-20-8	No	No									1
Pentachlorobenzene	608-93-5	No	Yes					8.00E-04	U			1
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
Pentachlorocyclopentadiene	25329-35-5	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Octachlorostyrene	29082-74-4		1	8.40E+05		3.23E+09					
Octadecanoic Acid	57-11-4	0.1	1			3.23E+09					
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	0.006	1			3.23E+09					
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	0.1	1			3.23E+09					
Octamethylpyrophosphoramide	152-16-9	0.1	1			3.23E+09					
Octanol, n-	111-87-5		1	5.35E+04	1.78E+02	3.23E+09					
Octanone, 2-	111-13-7		1	2.12E+04	3.60E+02	3.23E+09					
Octanone, 3-	106-68-3		1	2.60E+04	1.08E+03	3.23E+09					
Octyl Phthalate, di-N-	117-84-0	0.1	1			3.23E+09					
Oleic acid	112-80-1		1	1.43E+06	1.44E+00	3.23E+09					
Oleum	8014-95-7		1			3.23E+09					
Oryzalin	19044-88-3	0.1	1			3.23E+09					
Oxadiazon	19666-30-9	0.1	1			3.23E+09					
Oxamyl	23135-22-0	0.1	1			3.23E+09					
Oxychlordane	27304-13-8	0.1	1			3.23E+09					
Ozone	10028-15-6		1			3.23E+09					
Paclobutrazol	76738-62-0	0.1	1			3.23E+09					
Paraquat Dichloride	1910-42-5	0.1	1			3.23E+09					
Parathion	56-38-2	0.1	1			3.23E+09					
PeCDD, 2,3,7,8-	36088-22-9	0.03	1			3.23E+09	1.50E-04	1.75E-03	2.17E+01	1.38E-04	
PeCDF, 1,2,3,7,8-	57117-41-6	0.03	1			3.23E+09	5.01E-03	5.85E-02	7.25E+02	4.62E-03	
PeCDF, 2,3,4,7,8-	57117-31-4	0.03	1			3.23E+09	5.01E-04	5.85E-03	7.25E+01	4.62E-04	
Pebulate	1114-71-2		1	6.20E+04		3.23E+09					
Pendimethalin	40487-42-1	0.1	1			3.23E+09					
Pentabromodiphenyl Ether	32534-81-9	0.1	1			3.23E+09					
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	0.1	1			3.23E+09					
Pentachloroaniline	527-20-8	0.1	1			3.23E+09					
Pentachlorobenzene	608-93-5		1	1.12E+05		3.23E+09					
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	0.14	1	1.42E+06		3.23E+09	5.01E+00	1.25E+01	3.19E+02	3.54E+00	
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	0.14	1	1.14E+06		3.23E+09	5.01E+00	1.25E+01	2.56E+02	3.53E+00	
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	0.14	1	1.17E+06		3.23E+09	5.01E+00	1.25E+01	2.61E+02	3.53E+00	
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	0.14	1	1.42E+06		3.23E+09	5.01E+00	1.25E+01	3.19E+02	3.54E+00	
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	0.14	1	1.41E+06		3.23E+09	1.50E-03	3.76E-03	9.46E-02	1.06E-03	
Pentachlorocyclopentadiene	25329-35-5		1	1.95E+04		3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Octachlorostyrene	29082-74-4								
Octadecanoic Acid	57-11-4								
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0				3.35E+05	1.95E+07		3.29E+05	3.29E+05 max
Octahydrotrimethylmethylethylphenanthrenol	511-15-9								
Octamethylpyrophosphoramide	152-16-9				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Octanol, n-	111-87-5								
Octanone, 2-	111-13-7								
Octanone, 3-	106-68-3								
Octyl Phthalate, di-N-	117-84-0				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Oleic acid	112-80-1								
Oleum	8014-95-7								
Oryzalin	19044-88-3				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Oxadiazon	19666-30-9				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Oxamyl	23135-22-0				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Oxychlordane	27304-13-8								
Ozone	10028-15-6								
Paclobutrazol	76738-62-0				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Paraquat Dichloride	1910-42-5				3.02E+04	1.06E+05		2.35E+04	2.35E+04 nc
Parathion	56-38-2				4.02E+04	1.41E+05		3.13E+04	3.13E+04 nc
PeCDD, 2,3,7,8-	36088-22-9				4.69E-03	5.47E-02	1.13E+04	4.32E-03	1.38E-04 ca*
PeCDF, 1,2,3,7,8-	57117-41-6				1.56E-01	1.82E+00	3.77E+05	1.44E-01	4.62E-03 ca*
PeCDF, 2,3,4,7,8-	57117-31-4				1.56E-02	1.82E-01	3.77E+04	1.44E-02	4.62E-04 ca*
Pebulate	1114-71-2				3.35E+05			3.35E+05	3.35E+05 max
Pendimethalin	40487-42-1				2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Pentabromodiphenyl Ether	32534-81-9				1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Pentachloroaniline	527-20-8								
Pentachlorobenzene	608-93-5				5.36E+03			5.36E+03	5.36E+03 nc
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3				1.56E+02	3.90E+02	1.66E+05	1.11E+02	3.54E+00 ca*
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6				1.56E+02	3.90E+02	1.33E+05	1.11E+02	3.53E+00 ca*
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4				1.56E+02	3.90E+02	1.36E+05	1.11E+02	3.53E+00 ca*
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0				1.56E+02	3.90E+02	1.66E+05	1.11E+02	3.54E+00 ca*
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8				4.69E-02	1.17E-01	4.93E+01	3.35E-02	1.06E-03 ca*
Pentachlorocyclopentadiene	25329-35-5								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
Pentachloroethane	76-01-7	No	Yes	9.00E-02	U							1
Pentachloronitrobenzene	82-68-8	No	Yes	2.60E-01	U			3.00E-03	U			1
Pentachlorophenol	87-86-5	No	No	4.00E-01	U	5.10E-06	U	5.00E-03	U			1
Pentaerythritol tetranitrate (PETN)	78-11-5	No	No	4.00E-03	U			2.00E-03	U			1
Pentamethyl dipropylenetriamine	3855-32-1	No	No									1
Pentane, n-	109-66-0	No	Yes							1.00E+00	U	1
Pentyl Alcohol, N-	71-41-0	No	Yes									1
Perchlorate and Perchlorate Salts	14797-73-0	No	No					7.00E-04	U			1
Perfluorobutane Sulfonate	375-73-5	No	Yes					2.00E-02	U			1
Perfluorooctane Sulphonic Acid	1763-23-1	No	Yes									1
Perfluorooctanoic acid	335-67-1	No	Yes									1
Permethrin	52645-53-1	No	No					5.00E-02	U			1
Perylene	198-55-0	No	No									1
Pesticides (total)	NA	No	No									1
Pesticides, organochlorinated (each)	NA	No	No									1
Pesticides, organochlorinated (total)	NA	No	No									1
Phenacetin	62-44-2	No	No	2.20E-03	U	6.30E-07	U					1
Phenanthrene	85-01-8	No	Yes									1
Phenmedipham	13684-63-4	No	No					2.50E-01	U			1
Phenol	108-95-2	No	No					3.00E-01	U	2.00E-01	U	1
Phenothiazine	92-84-2	No	No					5.00E-04	U			1
Phenyl Isothiocyanate	103-72-0	No	Yes									1
Phenylenediamine, m-	108-45-2	No	No					6.00E-03	U			1
Phenylenediamine, o-	95-54-5	No	No	4.70E-02	U							1
Phenylenediamine, p-	106-50-3	No	No					1.90E-01	U			1
Phenylmercuric Acetate	62-38-4	No	No					8.00E-05	U			1
Phenylphenol, 2-	90-43-7	No	No	1.94E-03	U							1
Phorate	298-02-2	No	No					2.00E-04	U			1
Phosgene	75-44-5	No	Yes							3.00E-04	U	1
Phosmet	732-11-6	No	No					2.00E-02	U			1
Phosphine	7803-51-2	No	Yes					3.00E-04	U	3.00E-04	U	1
Phosphoric Acid	7664-38-2	No	No					4.86E+01	U	1.00E-02	U	1
Phosphorus (total)	NA	No	No									1
Phosphorus pentoxide	1314-56-3	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	0.03	1	4.61E+06		3.23E+09	1.50E-04	1.75E-03	3.10E-02	1.38E-04	
Pentachloroethane	76-01-7		1	1.33E+04	4.47E+02	3.23E+09	2.17E+02			2.17E+02	
Pentachloronitrobenzene	82-68-8		1	5.95E+05		3.23E+09	7.52E+01			7.52E+01	
Pentachlorophenol	87-86-5	0.25	1			3.23E+09	4.89E+01	6.84E+01	1.62E+08	2.85E+01	
Pentaerythritol tetranitrate (PETN)	78-11-5	0.1	1			3.23E+09	4.89E+03	1.71E+04		3.80E+03	
Pentamethyl dipropylenetriamine	3855-32-1	0.1	1			3.23E+09					
Pentane, n-	109-66-0		1	1.07E+03	3.88E+02	3.23E+09					
Pentyl Alcohol, N-	71-41-0		1	3.91E+04	3.04E+03	3.23E+09					
Perchlorate and Perchlorate Salts	14797-73-0		1			3.23E+09					
Perfluorobutane Sulfonate	375-73-5		1	1.82E+05		3.23E+09					
Perfluorooctane Sulphonic Acid	1763-23-1		1	1.48E+05		3.23E+09					
Perfluorooctanoic acid	335-67-1		1	3.00E+04		3.23E+09					
Permethrin	52645-53-1	0.1	1			3.23E+09					
Perylene	198-55-0	0.13	1			3.23E+09					
Pesticides (total)	NA	0.1	1			3.23E+09					
Pesticides, organochlorinated (each)	NA	0.1	1			3.23E+09					
Pesticides, organochlorinated (total)	NA	0.1	1			3.23E+09					
Phenacetin	62-44-2	0.1	1			3.23E+09	8.89E+03	3.11E+04	1.31E+09	6.91E+03	
Phenanthrene	85-01-8	0.13	1	8.87E+05		3.23E+09					
Phenmedipham	13684-63-4	0.1	1			3.23E+09					
Phenol	108-95-2	0.1	1			3.23E+09					
Phenothiazine	92-84-2	0.1	1			3.23E+09					
Phenyl Isothiocyanate	103-72-0		1	9.76E+03	1.29E+02	3.23E+09					
Phenylenediamine, m-	108-45-2	0.1	1			3.23E+09					
Phenylenediamine, o-	95-54-5	0.1	1			3.23E+09	4.16E+02	1.46E+03		3.23E+02	
Phenylenediamine, p-	106-50-3	0.1	1			3.23E+09					
Phenylmercuric Acetate	62-38-4	0.1	1			3.23E+09					
Phenylphenol, 2-	90-43-7	0.1	1			3.23E+09	1.01E+04	3.53E+04		7.84E+03	
Phorate	298-02-2	0.1	1			3.23E+09					
Phosgene	75-44-5		1	1.35E+03	1.61E+03	3.23E+09					
Phosmet	732-11-6	0.1	1			3.23E+09					
Phosphine	7803-51-2		1			3.23E+09					
Phosphoric Acid	7664-38-2		1			3.23E+09					
Phosphorus (total)	NA		1			3.23E+09					
Phosphorus pentoxide	1314-56-3		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4				4.69E-03	5.47E-02	1.61E+01	4.32E-03	1.38E-04 ca*
Pentachloroethane	76-01-7								2.17E+02 ca
Pentachloronitrobenzene	82-68-8				2.01E+04			2.01E+04	7.52E+01 ca
Pentachlorophenol	87-86-5				3.35E+04	4.69E+04		1.95E+04	2.85E+01 ca
Pentaerythritol tetranitrate (PETN)	78-11-5				1.34E+04	4.69E+04		1.04E+04	3.80E+03 ca**
Pentamethyl dipropylenetriamine	3855-32-1								
Pentane, n-	109-66-0						9.42E+04	9.42E+04	9.42E+04 sat
Pentyl Alcohol, N-	71-41-0								
Perchlorate and Perchlorate Salts	14797-73-0				4.69E+03			4.69E+03	4.69E+03 nc
Perfluorobutane Sulfonate	375-73-5				1.34E+05			1.34E+05	1.34E+05 max
Perfluorooctane Sulphonic Acid	1763-23-1								
Perfluorooctanoic acid	335-67-1								
Permethrin	52645-53-1				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Perylene	198-55-0								
Pesticides (total)	NA								
Pesticides, organochlorinated (each)	NA								
Pesticides, organochlorinated (total)	NA								
Phenacetin	62-44-2								6.91E+03 ca
Phenanthrene	85-01-8								
Phenmedipham	13684-63-4				1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Phenol	108-95-2				2.01E+06	7.03E+06	5.66E+10	1.56E+06	1.56E+06 max
Phenothiazine	92-84-2				3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Phenyl Isothiocyanate	103-72-0								
Phenylenediamine, m-	108-45-2				4.02E+04	1.41E+05		3.13E+04	3.13E+04 nc
Phenylenediamine, o-	95-54-5								3.23E+02 ca
Phenylenediamine, p-	106-50-3				1.27E+06	4.46E+06		9.90E+05	9.90E+05 max
Phenylmercuric Acetate	62-38-4				5.36E+02	1.88E+03		4.17E+02	4.17E+02 nc
Phenylphenol, 2-	90-43-7								7.84E+03 ca
Phorate	298-02-2				1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Phosgene	75-44-5						3.56E+01	3.56E+01	3.56E+01 nc
Phosmet	732-11-6				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Phosphine	7803-51-2				2.01E+03		8.50E+07	2.01E+03	2.01E+03 nc
Phosphoric Acid	7664-38-2				3.26E+08		2.83E+09	2.92E+08	2.92E+08 max
Phosphorus (total)	NA								
Phosphorus pentoxide	1314-56-3								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Phosphorus, White	7723-14-0	No	Yes					2.00E-05	U			1
Phthalates (total)	NA	No	No									1
Phthalic Acid, P-	100-21-0	No	No					1.00E+00	U			1
Phthalic Acid, m-	121-91-5	No	No									1
Phthalic Acid, o-	88-99-3	No	No									1
Phthalic Anhydride	85-44-9	No	No					2.00E+00	U	2.00E-02	U	1
Picloram	1918-02-1	No	No					7.00E-02	U			1
Picoline, 2-	109-06-8	No	Yes									1
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	No	No					1.00E-04	U			1
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	No	No									1
Piperidine	110-89-4	Yes	Yes									1
Pirimiphos, Methyl	29232-93-7	No	No					1.00E-02	U			1
Polybrominated Biphenyls	59536-65-1	No	No	3.00E+01	U	8.60E-03	U	7.00E-06	U			1
Polychlorinated Biphenyls (high risk)	1336-36-3	No	Yes	2.00E+00	U	5.71E-04	U					1
Polycyclic aromatic hydrocarbons (PAH), Total	NA	No	No									1
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	No	No									1
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	No	No									1
Polycyclic chlorinated hydrocarbons (total)	NA	No	No									1
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	No	No							6.00E-04	U	1
Polyphosphoric acid	8017-16-1	No	No					4.86E+01	U			1
Potassium	7440-09-7	No	No									1
Potassium Cyanide	151-50-8	No	No					2.00E-03	U			1
Potassium Perchlorate	7778-74-7	No	No					7.00E-04	U			1
Potassium Perfluorobutane Sulfonate	29420-49-3	No	No					2.00E-02	U			1
Potassium Silver Cyanide	506-61-6	No	No					5.00E-03	U			0.04
Potassium chlorate	3811-04-9	No	No									1
Potassium tripolyphosphate	13845-36-8	No	No					4.86E+01	U			1
Praseodymium	7440-10-0	No	No									1
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	No	No									1
Prochloraz	67747-09-5	No	No	1.50E-01	U			9.00E-03	U			1
Profluralin	26399-36-0	No	Yes					6.00E-03	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Phosphorus, White	7723-14-0		1	9.55E+03		3.23E+09					
Phthalates (total)	NA	0.1	1			3.23E+09					
Phthalic Acid, P-	100-21-0	0.1	1			3.23E+09					
Phthalic Acid, m-	121-91-5	0.1	1			3.23E+09					
Phthalic Acid, o-	88-99-3	0.1	1			3.23E+09					
Phthalic Anhydride	85-44-9	0.1	1			3.23E+09					
Picloram	1918-02-1	0.1	1			3.23E+09					
Picoline, 2-	109-06-8		1	1.05E+05	7.90E+05	3.23E+09					
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	0.1	1			3.23E+09					
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	0.1	1			3.23E+09					
Piperidine	110-89-4		1	1.12E+05	1.96E+05	3.23E+09					
Pirimiphos, Methyl	29232-93-7	0.1	1			3.23E+09					
Polybrominated Biphenyls	59536-65-1	0.1	1			3.23E+09	6.52E-01	2.28E+00	9.61E+04	5.07E-01	
Polychlorinated Biphenyls (high risk)	1336-36-3	0.14	1	1.08E+06		3.23E+09	9.77E+00	2.44E+01	4.85E+02	6.88E+00	
Polycyclic aromatic hydrocarbons (PAH), Total	NA	0.13	1			3.23E+09					
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	0.13	1			3.23E+09					
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	0.13	1			3.23E+09					
Polycyclic chlorinated hydrocarbons (total)	NA	0.1	1			3.23E+09					
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	0.1	1			3.23E+09					
Polyphosphoric acid	8017-16-1		1			3.23E+09					
Potassium	7440-09-7		1			3.23E+09					
Potassium Cyanide	151-50-8		1			3.23E+09					
Potassium Perchlorate	7778-74-7		1			3.23E+09					
Potassium Perfluorobutane Sulfonate	29420-49-3	0.1	1			3.23E+09					
Potassium Silver Cyanide	506-61-6		1			3.23E+09					
Potassium chlorate	3811-04-9		1			3.23E+09					
Potassium tripolyphosphate	13845-36-8		1			3.23E+09					
Praseodymium	7440-10-0		1			3.23E+09					
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2		1			3.23E+09					
Prochloraz	67747-09-5	0.1	1			3.23E+09	1.30E+02	4.56E+02		1.01E+02	
Profluralin	26399-36-0		1	5.78E+05		3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Phosphorus, White	7723-14-0				1.34E+02			1.34E+02	1.34E+02 nc
Phthalates (total)	NA								
Phthalic Acid, P-	100-21-0				6.70E+06	2.34E+07		5.21E+06	5.21E+06 max
Phthalic Acid, m-	121-91-5								
Phthalic Acid, o-	88-99-3								
Phthalic Anhydride	85-44-9				1.34E+07	4.69E+07	5.66E+09	1.04E+07	1.04E+07 max
Picloram	1918-02-1				4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Picoline, 2-	109-06-8								
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3				6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Picric Acid (2,4,6-Trinitrophenol)	88-89-1								
Piperidine	110-89-4								
Pirimiphos, Methyl	29232-93-7				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Polybrominated Biphenyls	59536-65-1				4.69E+01	1.64E+02		3.65E+01	5.07E-01 ca*
Polychlorinated Biphenyls (high risk)	1336-36-3								6.88E+00 ca
Polycyclic aromatic hydrocarbons (PAH), Total	NA								
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA								
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA								
Polycyclic chlorinated hydrocarbons (total)	NA								
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9						1.70E+08	1.70E+08	1.70E+08 max
Polyphosphoric acid	8017-16-1				3.26E+08			3.26E+08	3.26E+08 max
Potassium	7440-09-7								
Potassium Cyanide	151-50-8				1.34E+04			1.34E+04	1.34E+04 nc
Potassium Perchlorate	7778-74-7				4.69E+03			4.69E+03	4.69E+03 nc
Potassium Perfluorobutane Sulfonate	29420-49-3				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Potassium Silver Cyanide	506-61-6				3.35E+04			3.35E+04	3.35E+04 nc
Potassium chlorate	3811-04-9								
Potassium tripolyphosphate	13845-36-8				3.26E+08			3.26E+08	3.26E+08 max
Praseodymium	7440-10-0								
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2								
Prochloraz	67747-09-5				6.03E+04	2.11E+05		4.69E+04	1.01E+02 ca
Profluralin	26399-36-0				4.02E+04			4.02E+04	4.02E+04 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Promethium	7440-12-2	No	No									1
Prometon	1610-18-0	No	No					1.50E-02	U			1
Prometryn	7287-19-6	No	No					4.00E-03	U			1
Propachlor	1918-16-7	No	No					1.30E-02	U			1
Propanil	709-98-8	No	No					5.00E-03	U			1
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	No	No									1
Propargite	2312-35-8	No	No					2.00E-02	U			1
Propargyl Alcohol	107-19-7	No	Yes					2.00E-03	U			1
Propazine	139-40-2	No	No					2.00E-02	U			1
Propham	122-42-9	No	No					2.00E-02	U			1
Propiconazole	60207-90-1	No	No					1.30E-02	U			1
Propionaldehyde	123-38-6	No	Yes							8.00E-03	U	1
Propionitrile	107-12-0	No	Yes									1
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	No	Yes									1
Propyl Alcohol, n-	71-23-8	No	Yes									1
Propyl benzene	103-65-1	No	Yes					1.00E-01	U	1.00E+00	U	1
Propylene	115-07-1	No	Yes							3.00E+00	U	1
Propylene Glycol	57-55-6	No	No					2.00E+01	U			1
Propylene Glycol Dinitrate	6423-43-4	No	No							2.72E-04	U	1
Propylene Glycol Monoethyl Ether	1569-02-4	No	Yes					7.00E-01	U			1
Propylene Glycol Monomethyl Ether	107-98-2	No	Yes					7.00E-01	U	2.00E+00	U	1
Propylene Oxide	75-56-9	No	Yes	2.40E-01	U	3.70E-06	U			3.00E-02	U	1
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	No	No									1
Pursuit	81335-77-5	No	No					2.50E-01	U			1
Pydrin	51630-58-1	No	No					2.50E-02	U			1
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	No	No									1
Pyrene	129-00-0	No	Yes					3.00E-02	U			1
Pyridine	110-86-1	No	Yes					1.00E-03	U			1
Quinalphos	13593-03-8	No	No					5.00E-04	U			1
Quinoline	91-22-5	No	No	3.00E+00	U							1
Refractory Ceramic Fibers	NA	No	No							3.00E-02	U	1
Resmethrin	10453-86-8	No	No					3.00E-02	U			1
Resorcinol	108-46-3	No	No									1
Ronnel	299-84-3	No	Yes					5.00E-02	U			1
Rotenone	83-79-4	No	No					4.00E-03	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Promethium	7440-12-2		1			3.23E+09					
Prometon	1610-18-0	0.1	1			3.23E+09					
Prometryn	7287-19-6	0.1	1			3.23E+09					
Propachlor	1918-16-7	0.1	1			3.23E+09					
Propanil	709-98-8	0.1	1			3.23E+09					
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	0.1	1			3.23E+09					
Propargite	2312-35-8	0.1	1			3.23E+09					
Propargyl Alcohol	107-19-7		1	8.66E+04	1.11E+05	3.23E+09					
Propazine	139-40-2	0.1	1			3.23E+09					
Propham	122-42-9	0.1	1			3.23E+09					
Propiconazole	60207-90-1	0.1	1			3.23E+09					
Propionaldehyde	123-38-6		1	1.24E+04	3.26E+04	3.23E+09					
Propionitrile	107-12-0		1	2.07E+04	1.56E+04	3.23E+09					
Propionitrile, 3-(NN-dimethylamino)	1738-25-6		1	2.62E+05	1.60E+05	3.23E+09					
Propyl Alcohol, n-	71-23-8		1	4.01E+04	1.11E+05	3.23E+09					
Propyl benzene	103-65-1		1	9.64E+03	2.64E+02	3.23E+09					
Propylene	115-07-1		1	9.70E+02	3.49E+02	3.23E+09					
Propylene Glycol	57-55-6	0.1	1			3.23E+09					
Propylene Glycol Dinitrate	6423-43-4	0.1	1			3.23E+09					
Propylene Glycol Monoethyl Ether	1569-02-4		1	2.14E+05	8.52E+04	3.23E+09					
Propylene Glycol Monomethyl Ether	107-98-2		1	1.08E+05	1.06E+05	3.23E+09					
Propylene Oxide	75-56-9		1	1.42E+04	7.77E+04	3.23E+09	8.14E+01		9.77E+02	7.52E+01	
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	0.1	1			3.23E+09					
Pursuit	81335-77-5	0.1	1			3.23E+09					
Pydrin	51630-58-1	0.1	1			3.23E+09					
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	0.1	1			3.23E+09					
Pyrene	129-00-0	0.13	1	3.28E+06		3.23E+09					
Pyridine	110-86-1		1	7.64E+04	5.30E+05	3.23E+09					
Quinalphos	13593-03-8	0.1	1			3.23E+09					
Quinoline	91-22-5	0.1	1			3.23E+09	6.52E+00	2.28E+01		5.07E+00	
Refractory Ceramic Fibers	NA		1			3.23E+09					
Resmethrin	10453-86-8	0.1	1			3.23E+09					
Resorcinol	108-46-3	0.1	1			3.23E+09					
Ronnel	299-84-3		1	6.40E+05		3.23E+09					
Rotenone	83-79-4	0.1	1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Promethium	7440-12-2								
Prometon	1610-18-0				1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Prometryn	7287-19-6				2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
Propachlor	1918-16-7				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Propanil	709-98-8				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5								
Propargite	2312-35-8				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propargyl Alcohol	107-19-7				1.34E+04			1.34E+04	1.34E+04 nc
Propazine	139-40-2				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propham	122-42-9				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propiconazole	60207-90-1				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Propionaldehyde	123-38-6						8.66E+03	8.66E+03	8.66E+03 nc
Propionitrile	107-12-0								
Propionitrile, 3-(NN-dimethylamino)	1738-25-6								
Propyl Alcohol, n-	71-23-8								
Propyl benzene	103-65-1				6.70E+05		8.45E+05	3.74E+05	3.74E+05 sat
Propylene	115-07-1						2.55E+05	2.55E+05	2.55E+05 sat
Propylene Glycol	57-55-6				1.34E+08	4.69E+08		1.04E+08	1.04E+08 max
Propylene Glycol Dinitrate	6423-43-4						7.70E+07	7.70E+07	7.70E+07 max
Propylene Glycol Monoethyl Ether	1569-02-4				4.69E+06			4.69E+06	4.69E+06 sat
Propylene Glycol Monomethyl Ether	107-98-2				4.69E+06		1.89E+07	3.76E+06	3.76E+06 sat
Propylene Oxide	75-56-9						3.72E+04	3.72E+04	7.52E+01 ca
Prussian Blue (Ferric Ferrocyanide)	14038-43-8								
Pursuit	81335-77-5				1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Pydrin	51630-58-1				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2								
Pyrene	129-00-0				2.01E+05	5.41E+05		1.47E+05	1.47E+05 max
Pyridine	110-86-1				6.70E+03			6.70E+03	6.70E+03 nc
Quinalphos	13593-03-8				3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Quinoline	91-22-5								5.07E+00 ca
Refractory Ceramic Fibers	NA						8.50E+09	8.50E+09	8.50E+09 max
Resmethrin	10453-86-8				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Resorcinol	108-46-3								
Ronnel	299-84-3				3.35E+05			3.35E+05	3.35E+05 max
Rotenone	83-79-4				2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Safrole	94-59-7	Yes	No	2.20E-01	U	6.30E-05	U					1
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	No	No									1
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	No	No									1
Savey	78587-05-0	No	No					2.50E-02	U			1
Scandium	7440-20-2	No	No									1
Selenious Acid	7783-00-8	No	No					5.00E-03	U			1
Selenite	14124-67-5	No	No									1
Selenium	7782-49-2	No	No					5.00E-03	U	2.00E-02	U	1
Selenium Sulfide	7446-34-6	No	No					5.00E-03	U	2.00E-02	U	1
Selenourea	630-10-4	No	No									1
Sethoxydim	74051-80-2	No	No					9.00E-02	U			1
Silica (crystalline, respirable)	7631-86-9	No	No							3.00E-03	U	1
Silicon	7440-21-3	No	No									1
Silver	7440-22-4	No	No					5.00E-03	U			0.04
Silver Cyanide	506-64-9	No	No					1.00E-01	U			0.04
Simazine	122-34-9	No	No	1.20E-01	U			5.00E-03	U			1
Sodium	7440-23-5	No	No									1
Sodium Acifluorfen	62476-59-9	No	No					1.30E-02	U			1
Sodium Azide	26628-22-8	No	No					4.00E-03	U			1
Sodium Chlorate	7775-09-9	No	No									1
Sodium Cyanide	143-33-9	No	No					1.00E-03	U			1
Sodium Dichromate	10588-01-9	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Sodium Diethyldithiocarbamate	148-18-5	No	No	2.70E-01	U			3.00E-02	U			1
Sodium Fluoride	7681-49-4	No	No					5.00E-02	U	1.30E-02	U	1
Sodium Fluoroacetate	62-74-8	No	No					2.00E-05	U			1
Sodium Hydroxide	1310-73-2	No	No									1
Sodium Metavanadate	13718-26-8	No	No					1.00E-03	U			1
Sodium Perchlorate	7601-89-0	No	No					7.00E-04	U			1
Sodium acid pyrophosphate	7758-16-9	No	No					4.86E+01	U			1
Sodium aluminum phosphate (acidic)	7785-88-8	No	No					4.86E+01	U			1
Sodium aluminum phosphate (anhydrous)	10279-59-1	No	No					4.86E+01	U			1
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	No	No					4.86E+01	U			1
Sodium hexametaphosphate	10124-56-8	No	No					4.86E+01	U			1
Sodium polyphosphate	68915-31-1	No	No					4.86E+01	U			1
Sodium trimetaphosphate	7785-84-4	No	No					4.86E+01	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Safrole	94-59-7	0.1	1			3.23E+09	3.02E+01	2.05E+02	7.15E+06	2.63E+01	
Samarium Chloride (Stable, Nonradioactive)	10361-82-7		1			3.23E+09					
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8		1			3.23E+09					
Savey	78587-05-0	0.1	1			3.23E+09					
Scandium	7440-20-2		1			3.23E+09					
Selenious Acid	7783-00-8		1			3.23E+09					
Selenite	14124-67-5		1			3.23E+09					
Selenium	7782-49-2		1			3.23E+09					
Selenium Sulfide	7446-34-6		1			3.23E+09					
Selenourea	630-10-4	0.1	1			3.23E+09					
Sethoxydim	74051-80-2	0.1	1			3.23E+09					
Silica (crystalline, respirable)	7631-86-9		1			3.23E+09					
Silicon	7440-21-3		1			3.23E+09					
Silver	7440-22-4		1			3.23E+09					
Silver Cyanide	506-64-9		1			3.23E+09					
Simazine	122-34-9	0.1	1			3.23E+09	1.63E+02	5.70E+02		1.27E+02	
Sodium	7440-23-5		1			3.23E+09					
Sodium Acifluorfen	62476-59-9	0.1	1			3.23E+09					
Sodium Azide	26628-22-8		1			3.23E+09					
Sodium Chlorate	7775-09-9		1			3.23E+09					
Sodium Cyanide	143-33-9		1			3.23E+09					
Sodium Dichromate	10588-01-9		1			3.23E+09	1.33E+01		3.00E+03	1.32E+01	
Sodium Diethyldithiocarbamate	148-18-5	0.1	1			3.23E+09	7.24E+01	2.53E+02		5.63E+01	
Sodium Fluoride	7681-49-4		1			3.23E+09					
Sodium Fluoroacetate	62-74-8	0.1	1			3.23E+09					
Sodium Hydroxide	1310-73-2		1			3.23E+09					
Sodium Metavanadate	13718-26-8		1			3.23E+09					
Sodium Perchlorate	7601-89-0		1			3.23E+09					
Sodium acid pyrophosphate	7758-16-9		1			3.23E+09					
Sodium aluminum phosphate (acidic)	7785-88-8		1			3.23E+09					
Sodium aluminum phosphate (anhydrous)	10279-59-1		1			3.23E+09					
Sodium aluminum phosphate (tetrahydrate)	10305-76-7		1			3.23E+09					
Sodium hexametaphosphate	10124-56-8		1			3.23E+09					
Sodium polyphosphate	68915-31-1		1			3.23E+09					
Sodium trimetaphosphate	7785-84-4		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Safrole	94-59-7								2.63E+01 ca
Samarium Chloride (Stable, Nonradioactive)	10361-82-7								
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8								
Savey	78587-05-0				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Scandium	7440-20-2								
Selenious Acid	7783-00-8				3.35E+04			3.35E+04	3.35E+04 nc
Selenite	14124-67-5								
Selenium	7782-49-2				3.35E+04		5.66E+09	3.35E+04	3.35E+04 nc
Selenium Sulfide	7446-34-6				3.35E+04		5.66E+09	3.35E+04	3.35E+04 nc
Selenourea	630-10-4								
Sethoxydim	74051-80-2				6.03E+05	2.11E+06		4.69E+05	4.69E+05 max
Silica (crystalline, respirable)	7631-86-9						8.50E+08	8.50E+08	8.50E+08 max
Silicon	7440-21-3								
Silver	7440-22-4				3.35E+04			3.35E+04	3.35E+04 nc
Silver Cyanide	506-64-9				6.70E+05			6.70E+05	6.70E+05 max
Simazine	122-34-9				3.35E+04	1.17E+05		2.61E+04	1.27E+02 ca
Sodium	7440-23-5								
Sodium Acifluorfen	62476-59-9				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Sodium Azide	26628-22-8				2.68E+04			2.68E+04	2.68E+04 nc
Sodium Chlorate	7775-09-9								
Sodium Cyanide	143-33-9				6.70E+03			6.70E+03	6.70E+03 nc
Sodium Dichromate	10588-01-9				1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Sodium Diethyldithiocarbamate	148-18-5				2.01E+05	7.03E+05		1.56E+05	5.63E+01 ca
Sodium Fluoride	7681-49-4				3.35E+05		3.68E+09	3.35E+05	3.35E+05 max
Sodium Fluoroacetate	62-74-8				1.34E+02	4.69E+02		1.04E+02	1.04E+02 nc
Sodium Hydroxide	1310-73-2								
Sodium Metavanadate	13718-26-8				6.70E+03			6.70E+03	6.70E+03 nc
Sodium Perchlorate	7601-89-0				4.69E+03			4.69E+03	4.69E+03 nc
Sodium acid pyrophosphate	7758-16-9				3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (acidic)	7785-88-8				3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (anhydrous)	10279-59-1				3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (tetrahydrate)	10305-76-7				3.26E+08			3.26E+08	3.26E+08 max
Sodium hexametaphosphate	10124-56-8				3.26E+08			3.26E+08	3.26E+08 max
Sodium polyphosphate	68915-31-1				3.26E+08			3.26E+08	3.26E+08 max
Sodium trimetaphosphate	7785-84-4				3.26E+08			3.26E+08	3.26E+08 max

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Sodium tripolyphosphate	7758-29-4	No	No					4.86E+01	U			1
Stearyl Acetate	822-23-1	No	Yes									1
Stirofos (Tetrachlorovinphos)	961-11-5	No	No	2.40E-02	U			3.00E-02	U			1
Strontium Chromate	7789-06-2	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025
Strontium, Stable	7440-24-6	No	No					6.00E-01	U			1
Strychnine	57-24-9	No	No					3.00E-04	U			1
Styrene	100-42-5	No	Yes					2.00E-01	U	1.00E+00	U	1
Styrene-Acrylonitrile (SAN) Trimer	NA	No	No					3.00E-03	U			1
Sulfate	14808-79-8	No	No									1
Sulfide	18496-25-8	No	No									1
Sulfolane	126-33-0	No	No					1.00E-03	U	2.00E-03	U	1
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	No	No					8.00E-04	U			1
Sulfur	7704-34-9	No	No									1
Sulfur Dioxide	7446-09-5	No	Yes									1
Sulfur Mustard	505-60-2	No	Yes									1
Sulfur Trioxide	7446-11-9	No	Yes							1.00E-03	U	1
Sulfuric Acid	7664-93-9	No	No							1.00E-03	U	1
Systhane	88671-89-0	No	No					2.50E-02	U			1
TCDD, 2,3,7,8-	1746-01-6	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1
TCDF, 2,3,7,8-	51207-31-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1
TCMTB	21564-17-0	No	No					3.00E-02	U			1
Tebuthiuron	34014-18-1	No	No					7.00E-02	U			1
Technetium	7440-26-8	No	No									1
Tellurium	13494-80-9	No	No									1
Temephos	3383-96-8	No	No					2.00E-02	U			1
Terbacil	5902-51-2	No	No					1.30E-02	U			1
Terbufos	13071-79-9	No	Yes					2.50E-05	U			1
Terbutryn	886-50-0	No	No					1.00E-03	U			1
Tetrabutyl Lead	1920-90-7	No	Yes									1
Tetrachloroaniline, 2,3,5,6-	3481-20-7	No	No									1
Tetrachlorobenzene, 1,2,3,4-	634-66-2	No	Yes									1
Tetrachlorobenzene, 1,2,4,5-	95-94-3	No	Yes					3.00E-04	U			1
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	No	No	1.30E+01	U	3.80E-03	U	7.00E-06	U	4.00E-04	U	1
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	No	Yes	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1
Tetrachloroethane, 1,1,1,2-	630-20-6	No	Yes	2.60E-02	U	7.40E-06	U	3.00E-02	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Sodium tripolyphosphate	7758-29-4		1			3.23E+09					
Stearyl Acetate	822-23-1		1	8.92E+04		3.23E+09					
Stirofos (Tetrachlorovinphos)	961-11-5	0.1	1			3.23E+09	8.14E+02	2.85E+03		6.33E+02	
Strontium Chromate	7789-06-2		1			3.23E+09	1.33E+01		3.00E+03	1.32E+01	
Strontium, Stable	7440-24-6		1			3.23E+09					
Strychnine	57-24-9	0.1	1			3.23E+09					
Styrene	100-42-5		1	1.29E+04	8.67E+02	3.23E+09					
Styrene-Acrylonitrile (SAN) Trimer	NA	0.1	1			3.23E+09					
Sulfate	14808-79-8		1			3.23E+09					
Sulfide	18496-25-8		1			3.23E+09					
Sulfolane	126-33-0	0.1	1			3.23E+09					
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	0.1	1			3.23E+09					
Sulfur	7704-34-9		1			3.23E+09					
Sulfur Dioxide	7446-09-5		1			3.23E+09					
Sulfur Mustard	505-60-2		1	1.21E+05	1.08E+03	3.23E+09					
Sulfur Trioxide	7446-11-9		1			3.23E+09					
Sulfuric Acid	7664-93-9		1			3.23E+09					
Systhane	88671-89-0	0.1	1			3.23E+09					
TCDD, 2,3,7,8-	1746-01-6	0.03	1	2.71E+06		3.23E+09	1.50E-04	1.75E-03	1.82E-02	1.37E-04	
TCDF, 2,3,7,8-	51207-31-9	0.03	1	4.72E+06		3.23E+09	1.50E-03	1.75E-02	3.17E-01	1.38E-03	
TCMTB	21564-17-0	0.1	1			3.23E+09					
Tebuthiuron	34014-18-1	0.1	1			3.23E+09					
Technetium	7440-26-8		1			3.23E+09					
Tellurium	13494-80-9		1			3.23E+09					
Temephos	3383-96-8	0.1	1			3.23E+09					
Terbacil	5902-51-2	0.1	1			3.23E+09					
Terbufos	13071-79-9		1	3.64E+05	3.09E+01	3.23E+09					
Terbutryn	886-50-0	0.1	1			3.23E+09					
Tetrabutyl Lead	1920-90-7		1	6.41E+03		3.23E+09					
Tetrachloroaniline, 2,3,5,6-	3481-20-7	0.1	1			3.23E+09					
Tetrachlorobenzene, 1,2,3,4-	634-66-2		1	8.26E+04		3.23E+09					
Tetrachlorobenzene, 1,2,4,5-	95-94-3		1	6.99E+04		3.23E+09					
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	0.14	1			3.23E+09	1.50E+00	3.76E+00	2.17E+05	1.07E+00	
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	0.14	1	1.00E+06		3.23E+09	5.01E-01	1.25E+00	2.24E+01	3.52E-01	
Tetrachloroethane, 1,1,1,2-	630-20-6		1	7.83E+03	6.80E+02	3.23E+09	7.52E+02		2.70E+02	1.99E+02	

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Sodium tripolyphosphate	7758-29-4				3.26E+08			3.26E+08	3.26E+08 max
Stearyl Acetate	822-23-1								
Stirofos (Tetrachlorovinphos)	961-11-5				2.01E+05	7.03E+05		1.56E+05	6.33E+02 ca
Strontium Chromate	7789-06-2				1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Strontium, Stable	7440-24-6				4.02E+06			4.02E+06	4.02E+06 max
Strychnine	57-24-9				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Styrene	100-42-5				1.34E+06		1.13E+06	6.14E+05	6.14E+05 sat
Styrene-Acrylonitrile (SAN) Trimer	NA				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Sulfate	14808-79-8								
Sulfide	18496-25-8								
Sulfolane	126-33-0				6.70E+03	2.34E+04	5.66E+08	5.21E+03	5.21E+03 nc
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9				5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Sulfur	7704-34-9								
Sulfur Dioxide	7446-09-5								
Sulfur Mustard	505-60-2								
Sulfur Trioxide	7446-11-9						2.83E+08	2.83E+08	2.83E+08 max
Sulfuric Acid	7664-93-9						2.83E+08	2.83E+08	2.83E+08 max
Systhane	88671-89-0				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
TCDD, 2,3,7,8-	1746-01-6				4.69E-03	5.47E-02	9.48E+00	4.32E-03	1.37E-04 ca*
TCDF, 2,3,7,8-	51207-31-9				4.69E-02	5.47E-01	1.65E+02	4.32E-02	1.38E-03 ca*
TCMTB	21564-17-0				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Tebuthiuron	34014-18-1				4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Technetium	7440-26-8								
Tellurium	13494-80-9								
Temephos	3383-96-8				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Terbacil	5902-51-2				8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Terbufos	13071-79-9				1.68E+02			1.68E+02	1.68E+02 sat
Terbutryn	886-50-0				6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Tetrabutyl Lead	1920-90-7								
Tetrachloroaniline, 2,3,5,6-	3481-20-7								
Tetrachlorobenzene, 1,2,3,4-	634-66-2								
Tetrachlorobenzene, 1,2,4,5-	95-94-3				2.01E+03			2.01E+03	2.01E+03 nc
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3				4.69E+01	1.17E+02	1.13E+08	3.35E+01	1.07E+00 ca*
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4				1.56E+01	3.90E+01	1.17E+04	1.11E+01	3.52E-01 ca*
Tetrachloroethane, 1,1,1,2-	630-20-6				2.01E+05			2.01E+05	1.99E+02 ca

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Tetrachloroethane, 1,1,2,2-	79-34-5	No	Yes	2.00E-01	U	5.80E-05	U	2.00E-02	U			1
Tetrachloroethylene	127-18-4	No	Yes	2.10E-03	U	2.60E-07	U	6.00E-03	U	4.00E-02	U	1
Tetrachlorophenol, 2,3,4,5-	4901-51-3	No	No									1
Tetrachlorophenol, 2,3,4,6-	58-90-2	No	No					3.00E-02	U			1
Tetrachlorophenols (total)	25167-83-3	No	No									1
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	No	No									1
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	No	Yes	2.00E+01	U							1
Tetraethyl Dithiopyrophosphate	3689-24-5	No	No					5.00E-04	U			1
Tetraethyl Lead	78-00-2	No	Yes					1.00E-07	U			1
Tetrafluoroethane, 1,1,1,2-	811-97-2	No	Yes							8.00E+01	U	1
Tetrahydrofuran	109-99-9	No	Yes					9.00E-01	U	2.00E+00	U	1
Tetrahydrothiophene	110-01-0	No	Yes									1
Tetramethyl Lead	75-74-1	No	Yes									1
Tetramethylcyclohexane	30501-43-0	No	Yes									1
Tetrapotassium phosphate	7320-34-5	No	No					4.86E+01	U			1
Tetrapropyl Lead	3440-75-3	No	Yes									1
Tetrasodium pyrophosphate	7722-88-5	No	No					4.86E+01	U			1
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	No	No					2.00E-03	U			1
Thallic Oxide	1314-32-5	No	No									1
Thallium (I) Nitrate	10102-45-1	No	No					7.00E-06	U			1
Thallium (Soluble Salts)	7440-28-0	No	No					1.00E-05	U			1
Thallium Acetate	563-68-8	No	No					6.00E-06	U			1
Thallium Carbonate	6533-73-9	No	No					2.00E-05	U			1
Thallium Chloride	7791-12-0	No	No					6.00E-06	U			1
Thallium Selenite	12039-52-0	No	No									1
Thallium Sulfate	7446-18-6	No	No					2.00E-05	U			1
Thiobencarb	28249-77-6	No	No					1.00E-02	U			1
Thiocyanates	NA	No	No					2.00E-04	U			1
Thiocyanic Acid	463-56-9	No	Yes					2.00E-04	U			1
Thiodiglycol	111-48-8	No	No					7.00E-02	U			1
Thiofanox	39196-18-4	No	No					3.00E-04	U			1
Thiophanate, Methyl	23564-05-8	No	No					8.00E-02	U			1
Thiophene	110-02-1	No	Yes									1
Thiram	137-26-8	No	No					5.00E-03	U			1
Thorium	NA	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Tetrachloroethane, 1,1,2,2-	79-34-5		1	2.08E+04	1.90E+03	3.23E+09	9.77E+01		9.18E+01	4.73E+01	
Tetrachloroethylene	127-18-4		1	3.24E+03	1.66E+02	3.23E+09	9.31E+03		3.18E+03	2.37E+03	
Tetrachlorophenol, 2,3,4,5-	4901-51-3	0.1	1			3.23E+09					
Tetrachlorophenol, 2,3,4,6-	58-90-2	0.1	1			3.23E+09					
Tetrachlorophenols (total)	25167-83-3	0.1	1			3.23E+09					
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	0.1	1			3.23E+09					
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1		1	1.46E+05		3.23E+09	9.77E-01			9.77E-01	
Tetraethyl Dithiopyrophosphate	3689-24-5	0.1	1			3.23E+09					
Tetraethyl Lead	78-00-2		1	2.64E+03	2.43E+00	3.23E+09					
Tetrafluoroethane, 1,1,1,2-	811-97-2		1	1.68E+03	1.09E+03	3.23E+09					
Tetrahydrofuran	109-99-9	0.03	1	1.69E+04	1.65E+05	3.23E+09					
Tetrahydrothiophene	110-01-0		1	1.81E+04	3.44E+03	3.23E+09					
Tetramethyl Lead	75-74-1		1	1.89E+03	3.64E+01	3.23E+09					
Tetramethylcyclohexane	30501-43-0		1			3.23E+09					
Tetrapotassium phosphate	7320-34-5		1			3.23E+09					
Tetrapropyl Lead	3440-75-3		1	3.65E+03		3.23E+09					
Tetrasodium pyrophosphate	7722-88-5		1			3.23E+09					
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	0.00065	1			3.23E+09					
Thallic Oxide	1314-32-5		1			3.23E+09					
Thallium (I) Nitrate	10102-45-1		1			3.23E+09					
Thallium (Soluble Salts)	7440-28-0		1			3.23E+09					
Thallium Acetate	563-68-8	0.1	1			3.23E+09					
Thallium Carbonate	6533-73-9	0.1	1			3.23E+09					
Thallium Chloride	7791-12-0		1			3.23E+09					
Thallium Selenite	12039-52-0		1			3.23E+09					
Thallium Sulfate	7446-18-6		1			3.23E+09					
Thiobencarb	28249-77-6	0.1	1			3.23E+09					
Thiocyanates	NA		1			3.23E+09					
Thiocyanic Acid	463-56-9		1			3.23E+09					
Thiodiglycol	111-48-8	0.0075	1			3.23E+09					
Thiofanox	39196-18-4	0.1	1			3.23E+09					
Thiophanate, Methyl	23564-05-8	0.1	1			3.23E+09					
Thiophene	110-02-1		1	5.77E+03	1.80E+03	3.23E+09					
Thiram	137-26-8	0.1	1			3.23E+09					
Thorium	NA		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Tetrachloroethane, 1,1,2,2-	79-34-5				1.34E+05			1.34E+05	4.73E+01 ca
Tetrachloroethylene	127-18-4				4.02E+04		1.13E+04	8.85E+03	2.37E+03 sat
Tetrachlorophenol, 2,3,4,5-	4901-51-3								
Tetrachlorophenol, 2,3,4,6-	58-90-2				2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Tetrachlorophenols (total)	25167-83-3								
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0								
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1								9.77E-01 ca
Tetraethyl Dithiopyrophosphate	3689-24-5				3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Tetraethyl Lead	78-00-2				6.70E-01			6.70E-01	6.70E-01 nc
Tetrafluoroethane, 1,1,1,2-	811-97-2						1.18E+07	1.18E+07	1.18E+07 sat
Tetrahydrofuran	109-99-9				6.03E+06	7.03E+07	2.95E+06	1.93E+06	1.93E+06 sat
Tetrahydrothiophene	110-01-0								
Tetramethyl Lead	75-74-1								
Tetramethylcyclohexane	30501-43-0								
Tetrapotassium phosphate	7320-34-5				3.26E+08			3.26E+08	3.26E+08 max
Tetrapropyl Lead	3440-75-3								
Tetrasodium pyrophosphate	7722-88-5				3.26E+08			3.26E+08	3.26E+08 max
Tetryl (Trinitrophenylmethylnitramine)	479-45-8				1.34E+04	7.22E+06		1.34E+04	1.34E+04 nc
Thallic Oxide	1314-32-5								
Thallium (I) Nitrate	10102-45-1				4.69E+01			4.69E+01	4.69E+01 nc
Thallium (Soluble Salts)	7440-28-0				6.70E+01			6.70E+01	6.70E+01 nc
Thallium Acetate	563-68-8				4.02E+01	1.41E+02		3.13E+01	3.13E+01 nc
Thallium Carbonate	6533-73-9				1.34E+02	4.69E+02		1.04E+02	1.04E+02 nc
Thallium Chloride	7791-12-0				4.02E+01			4.02E+01	4.02E+01 nc
Thallium Selenite	12039-52-0								
Thallium Sulfate	7446-18-6				1.34E+02			1.34E+02	1.34E+02 nc
Thiobencarb	28249-77-6				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Thiocyanates	NA				1.34E+03			1.34E+03	1.34E+03 nc
Thiocyanic Acid	463-56-9				1.34E+03			1.34E+03	1.34E+03 nc
Thiodiglycol	111-48-8				4.69E+05	2.19E+07		4.59E+05	4.59E+05 max
Thiofanox	39196-18-4				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Thiophanate, Methyl	23564-05-8				5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Thiophene	110-02-1								
Thiram	137-26-8				3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Thorium	NA								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Thymol	89-83-8	No	No									1
Tin	7440-31-5	No	No					6.00E-01	U			1
Titanium	7440-32-6	No	No									1
Titanium Tetrachloride	7550-45-0	No	Yes							1.00E-04	U	1
Toluene	108-88-3	No	Yes					8.00E-02	U	5.00E+00	U	1
Toluene-2,5-diamine	95-70-5	No	No	1.80E-01	U			2.00E-04	U			1
Toluenediamine, 2,3-	2687-25-4	No	No									1
Toluenediamine, 3,4-	496-72-0	No	No									1
Toluidine, p-	106-49-0	No	No	3.00E-02	U			4.00E-03	U			1
Total Petroleum Hydrocarbons (Aliphatic High)	NA	No	Yes					3.00E+00	U			1
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	No	Yes							6.00E-01	U	1
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	No	Yes					1.00E-02	U	1.00E-01	U	1
Total Petroleum Hydrocarbons (Aromatic High)	NA	No	No					4.00E-02	U			1
Total Petroleum Hydrocarbons (Aromatic Low)	NA	No	Yes					4.00E-03	U	3.00E-02	U	1
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	No	Yes					4.00E-03	U	3.00E-03	U	1
Toxaphene	8001-35-2	No	No	1.10E+00	U	3.20E-04	U					1
Tralomethrin	66841-25-6	No	No					7.50E-03	U			1
Tri-n-butyltin	688-73-3	No	Yes					3.00E-04	U			1
Triacetin	102-76-1	No	No					8.00E+01	U			1
Triallate	2303-17-5	No	Yes					1.30E-02	U			1
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	No	No					4.86E+01	U			1
Triasulfuron	82097-50-5	No	No					1.00E-02	U			1
Triaziquone	68-76-8	No	No									1
Tribromobenzene, 1,2,4-	615-54-3	No	Yes					5.00E-03	U			1
Tribromochloromethane	594-15-0	No	Yes									1
Tribromodiphenyl Ether	49690-94-0	No	Yes									1
Tribromophenol, 2,4,6-	118-79-6	No	No									1
Tributyl Phosphate	126-73-8	No	No	9.00E-03	U			1.00E-02	U			1
Tributyltin	56573-85-4	No	Yes									1
Tributyltin Compounds	NA	No	No					3.00E-04	U			1
Tributyltin Oxide	56-35-9	No	No					3.00E-04	U			1
Tributyltin chloride	1461-22-9	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Thymol	89-83-8	0.1	1			3.23E+09					
Tin	7440-31-5		1			3.23E+09					
Titanium	7440-32-6		1			3.23E+09					
Titanium Tetrachloride	7550-45-0		1			3.23E+09					
Toluene	108-88-3		1	5.92E+03	8.18E+02	3.23E+09					
Toluene-2,5-diamine	95-70-5	0.1	1			3.23E+09	1.09E+02	3.80E+02		8.45E+01	
Toluenediamine, 2,3-	2687-25-4	0.1	1			3.23E+09					
Toluenediamine, 3,4-	496-72-0	0.1	1			3.23E+09					
Toluidine, p-	106-49-0	0.1	1			3.23E+09	6.52E+02	2.28E+03		5.07E+02	
Total Petroleum Hydrocarbons (Aliphatic High)	NA		1	1.46E+03	3.41E-01	3.23E+09					
Total Petroleum Hydrocarbons (Aliphatic Low)	NA		1	1.14E+03	1.41E+02	3.23E+09					
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA		1	1.44E+03	6.86E+00	3.23E+09					
Total Petroleum Hydrocarbons (Aromatic High)	NA	0.1	1			3.23E+09					
Total Petroleum Hydrocarbons (Aromatic Low)	NA		1	4.88E+03	1.82E+03	3.23E+09					
Total Petroleum Hydrocarbons (Aromatic Medium)	NA		1	7.23E+04		3.23E+09					
Toxaphene	8001-35-2	0.1	1			3.23E+09	1.78E+01	6.22E+01	2.58E+06	1.38E+01	
Tralomethrin	66841-25-6	0.1	1			3.23E+09					
Tri-n-butyltin	688-73-3		1	4.63E+03		3.23E+09					
Triacetin	102-76-1	0.1	1			3.23E+09					
Triallate	2303-17-5		1	5.00E+05		3.23E+09					
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5		1			3.23E+09					
Triasulfuron	82097-50-5	0.1	1			3.23E+09					
Triaziquone	68-76-8	0.1	1			3.23E+09					
Tribromobenzene, 1,2,4-	615-54-3		1	6.24E+04		3.23E+09					
Tribromochloromethane	594-15-0		1	5.65E+04		3.23E+09					
Tribromodiphenyl Ether	49690-94-0		1	1.07E+06		3.23E+09					
Tribromophenol, 2,4,6-	118-79-6	0.1	1			3.23E+09					
Tributyl Phosphate	126-73-8	0.1	1			3.23E+09	2.17E+03	7.60E+03		1.69E+03	
Tributyltin	56573-85-4		1	4.95E+04		3.23E+09					
Tributyltin Compounds	NA	0.1	1			3.23E+09					
Tributyltin Oxide	56-35-9	0.1	1			3.23E+09					
Tributyltin chloride	1461-22-9		1	5.94E+03		3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Thymol	89-83-8								
Tin	7440-31-5				4.02E+06			4.02E+06	4.02E+06 max
Titanium	7440-32-6								
Titanium Tetrachloride	7550-45-0						2.83E+07	2.83E+07	2.83E+07 max
Toluene	108-88-3				5.36E+05		2.59E+06	4.44E+05	4.44E+05 sat
Toluene-2,5-diamine	95-70-5				1.34E+03	4.69E+03		1.04E+03	8.45E+01 ca*
Toluenediamine, 2,3-	2687-25-4								
Toluenediamine, 3,4-	496-72-0								
Toluidine, p-	106-49-0				2.68E+04	9.38E+04		2.08E+04	5.07E+02 ca*
Total Petroleum Hydrocarbons (Aliphatic High)	NA				2.01E+07			2.01E+07	2.01E+07 sat
Total Petroleum Hydrocarbons (Aliphatic Low)	NA						6.01E+04	6.01E+04	6.01E+04 sat
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA				6.70E+04		1.26E+04	1.06E+04	1.06E+04 sat
Total Petroleum Hydrocarbons (Aromatic High)	NA				2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Total Petroleum Hydrocarbons (Aromatic Low)	NA				2.68E+04		1.28E+04	8.67E+03	8.67E+03 sat
Total Petroleum Hydrocarbons (Aromatic Medium)	NA				2.68E+04		1.90E+04	1.11E+04	1.11E+04 nc
Toxaphene	8001-35-2								1.38E+01 ca
Tralomethrin	66841-25-6				5.03E+04	1.76E+05		3.91E+04	3.91E+04 nc
Tri-n-butyltin	688-73-3				2.01E+03			2.01E+03	2.01E+03 nc
Triacetin	102-76-1				5.36E+08	1.88E+09		4.17E+08	4.17E+08 max
Triallate	2303-17-5				8.71E+04			8.71E+04	8.71E+04 nc
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5				3.26E+08			3.26E+08	3.26E+08 max
Triasulfuron	82097-50-5				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Triaziquone	68-76-8								
Tribromobenzene, 1,2,4-	615-54-3				3.35E+04			3.35E+04	3.35E+04 nc
Tribromochloromethane	594-15-0								
Tribromodiphenyl Ether	49690-94-0								
Tribromophenol, 2,4,6-	118-79-6								
Tributyl Phosphate	126-73-8				6.70E+04	2.34E+05		5.21E+04	1.69E+03 ca*
Tributyltin	56573-85-4								
Tributyltin Compounds	NA				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Tributyltin Oxide	56-35-9				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Tributyltin chloride	1461-22-9								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Tributyltin fluoride	1983-10-4	No	Yes									1
Tributyltin linoleate	24124-25-2	No	Yes									1
Tributyltin methacrylate	2155-70-6	No	Yes									1
Tributyltin naphthenate	85409-17-2	No	No									1
Tricaine Methanesulfonate	886-86-2	No	No									1
Tricalcium phosphate	7758-87-4	No	No					4.86E+01	U			1
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	No	Yes					3.00E+01	U	3.00E+01	U	1
Trichloro-2'-hydroxydiphenylether	3380-34-5	No	No									1
Trichloroacetic Acid	76-03-9	No	No	7.00E-02	U			2.00E-02	U			1
Trichloroaniline HCl, 2,4,6-	33663-50-2	No	No	2.90E-02	U							1
Trichloroaniline, 2,4,5-	636-30-6	No	No									1
Trichloroaniline, 2,4,6-	634-93-5	No	No	7.00E-03	U			3.00E-05	U			1
Trichlorobenzene	12002-48-1	No	Yes									1
Trichlorobenzene, 1,2,3-	87-61-6	No	Yes					8.00E-04	U			1
Trichlorobenzene, 1,2,4-	120-82-1	No	Yes	2.90E-02	U			1.00E-02	U	2.00E-03	U	1
Trichloroethane, 1,1,1-	71-55-6	No	Yes					2.00E+00	U	5.00E+00	U	1
Trichloroethane, 1,1,2-	79-00-5	No	Yes	5.70E-02	U	1.60E-05	U	4.00E-03	U	2.00E-04	U	1
Trichloroethylene	79-01-6	Yes	Yes	4.60E-02	U	4.10E-06	U	5.00E-04	U	2.00E-03	U	1
Trichlorofluoromethane	75-69-4	No	Yes					3.00E-01	U	7.00E-01	U	1
Trichlorophenol, 2,4,5-	95-95-4	No	No					1.00E-01	U			1
Trichlorophenol, 2,4,6-	88-06-2	No	No	1.10E-02	U	3.10E-06	U	1.00E-03	U			1
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	No	No					1.00E-02	U			1
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	No	No									1
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	No	No					8.00E-03	U			1
Trichloropropane, 1,1,2-	598-77-6	No	Yes					5.00E-03	U			1
Trichloropropane, 1,2,3-	96-18-4	Yes	Yes	3.00E+01	U			4.00E-03	U	3.00E-04	U	1
Trichloropropene, 1,2,3-	96-19-5	No	Yes					3.00E-03	U	3.00E-04	U	1
Trichlorotoluene, 2,3,6-	2077-46-5	No	Yes									1
Trichlorotoluene, alpha 2,6-	2014-83-7	No	Yes									1
Triclorophenols (total)	NA	No	No									1
Tricresyl Phosphate (TCP)	1330-78-5	No	No					2.00E-02	U			1
Tridiphane	58138-08-2	No	No					3.00E-03	U			1
Tridymite	15468-32-3	Yes	No									1
Triethyl Lead	5224-23-7	No	Yes									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Tributyltin fluoride	1983-10-4		1	8.59E+03		3.23E+09					
Tributyltin linoleate	24124-25-2		1	1.67E+05		3.23E+09					
Tributyltin methacrylate	2155-70-6		1	1.41E+04		3.23E+09					
Tributyltin naphthenate	85409-17-2	0.1	1			3.23E+09					
Tricaine Methanesulfonate	886-86-2	0.1	1			3.23E+09					
Tricalcium phosphate	7758-87-4		1			3.23E+09					
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1		1	1.77E+03	9.10E+02	3.23E+09					
Trichloro-2'-hydroxydiphenylether	3380-34-5	0.1	1			3.23E+09					
Trichloroacetic Acid	76-03-9	0.1	1			3.23E+09	2.79E+02	9.77E+02		2.17E+02	
Trichloroaniline HCl, 2,4,6-	33663-50-2	0.1	1			3.23E+09	6.74E+02	2.36E+03		5.24E+02	
Trichloroaniline, 2,4,5-	636-30-6	0.1	1			3.23E+09					
Trichloroaniline, 2,4,6-	634-93-5	0.1	1			3.23E+09	2.79E+03	9.77E+03		2.17E+03	
Trichlorobenzene	12002-48-1		1	3.55E+04		3.23E+09					
Trichlorobenzene, 1,2,3-	87-61-6		1	4.44E+04		3.23E+09					
Trichlorobenzene, 1,2,4-	120-82-1		1	4.13E+04	4.05E+02	3.23E+09	6.74E+02			6.74E+02	
Trichloroethane, 1,1,1-	71-55-6		1	2.27E+03	6.40E+02	3.23E+09					
Trichloroethane, 1,1,2-	79-00-5		1	9.95E+03	2.16E+03	3.23E+09	3.43E+02		1.59E+02	1.09E+02	
Trichloroethylene	79-01-6		1	3.04E+03	6.92E+02	3.23E+09	3.04E+02		1.58E+02	1.04E+02	
Trichlorofluoromethane	75-69-4		1	1.43E+03	1.23E+03	3.23E+09					
Trichlorophenol, 2,4,5-	95-95-4	0.1	1			3.23E+09					
Trichlorophenol, 2,4,6-	88-06-2	0.1	1			3.23E+09	1.78E+03	6.22E+03	2.66E+08	1.38E+03	
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	0.1	1			3.23E+09					
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA		1			3.23E+09					
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	0.1	1			3.23E+09					
Trichloropropane, 1,1,2-	598-77-6		1	2.07E+04	1.28E+03	3.23E+09					
Trichloropropane, 1,2,3-	96-18-4		1	2.17E+04	1.40E+03	3.23E+09	2.21E-01			2.21E-01	
Trichloropropene, 1,2,3-	96-19-5		1	3.23E+03	4.51E+02	3.23E+09					
Trichlorotoluene, 2,3,6-	2077-46-5		1	5.83E+04		3.23E+09					
Trichlorotoluene, alpha 2,6-	2014-83-7		1	9.70E+04		3.23E+09					
Triclorophenols (total)	NA	0.1	1			3.23E+09					
Tricresyl Phosphate (TCP)	1330-78-5	0.1	1			3.23E+09					
Tridiphane	58138-08-2	0.1	1			3.23E+09					
Tridymite	15468-32-3		1			3.23E+09					
Triethyl Lead	5224-23-7		1	1.80E+03	5.67E+03	3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Tributyltin fluoride	1983-10-4								
Tributyltin linoleate	24124-25-2								
Tributyltin methacrylate	2155-70-6								
Tributyltin naphthenate	85409-17-2								
Tricaine Methanesulfonate	886-86-2								
Tricalcium phosphate	7758-87-4				3.26E+08			3.26E+08	3.26E+08 max
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1				2.01E+08		4.66E+06	4.55E+06	4.55E+06 sat
Trichloro-2'-hydroxydiphenylether	3380-34-5								
Trichloroacetic Acid	76-03-9				1.34E+05	4.69E+05		1.04E+05	2.17E+02 ca
Trichloroaniline HCl, 2,4,6-	33663-50-2								5.24E+02 ca
Trichloroaniline, 2,4,5-	636-30-6								
Trichloroaniline, 2,4,6-	634-93-5				2.01E+02	7.03E+02		1.56E+02	1.56E+02 nc
Trichlorobenzene	12002-48-1								
Trichlorobenzene, 1,2,3-	87-61-6				5.36E+03			5.36E+03	5.36E+03 nc
Trichlorobenzene, 1,2,4-	120-82-1				6.70E+04		7.24E+03	6.53E+03	6.74E+02 sat
Trichloroethane, 1,1,1-	71-55-6				1.34E+07		9.96E+05	9.27E+05	9.27E+05 sat
Trichloroethane, 1,1,2-	79-00-5				2.68E+04		1.74E+02	1.73E+02	1.09E+02 ca**
Trichloroethylene	79-01-6				3.35E+03		5.33E+02	4.60E+02	1.04E+02 ca**
Trichlorofluoromethane	75-69-4				2.01E+06		8.76E+04	8.39E+04	8.39E+04 sat
Trichlorophenol, 2,4,5-	95-95-4				6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Trichlorophenol, 2,4,6-	88-06-2				6.70E+03	2.34E+04		5.21E+03	1.38E+03 ca**
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA								
Trichlorophenoxypropionic acid, -2,4,5	93-72-1				5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Trichloropropane, 1,1,2-	598-77-6				3.35E+04			3.35E+04	3.35E+04 sat
Trichloropropane, 1,2,3-	96-18-4				2.68E+04		5.70E+02	5.58E+02	2.21E-01 ca
Trichloropropene, 1,2,3-	96-19-5				2.01E+04		8.48E+01	8.44E+01	8.44E+01 nc
Trichlorotoluene, 2,3,6-	2077-46-5								
Trichlorotoluene, alpha 2,6-	2014-83-7								
Triclorophenols (total)	NA								
Tricresyl Phosphate (TCP)	1330-78-5				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Tridiphane	58138-08-2				2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Tridymite	15468-32-3								
Triethyl Lead	5224-23-7								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Triethyl phosphorothioate [O,O,O-]	126-68-1	No	Yes									1
Triethylamine	121-44-8	No	Yes							7.00E-03	U	1
Triethylene Glycol	112-27-6	No	No					2.00E+00	U			1
Trifluralin	1582-09-8	No	Yes	7.70E-03	U			7.50E-03	U			1
Trimagnesium phosphate	7757-87-1	No	No					4.86E+01	U			1
Trimethyl Lead	7442-13-9	No	Yes									1
Trimethyl Phosphate	512-56-1	No	No	2.00E-02	U			1.00E-02	U			1
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	No	Yes									1
Trimethylbenzene, 1,2,3-	526-73-8	No	Yes							5.00E-03	U	1
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes							7.00E-03	U	1
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes					1.00E-02	U			1
Trimethylethyl Lead	1762-26-1	No	Yes									1
Trimethylpentane, 2,2,4-	540-84-1	No	Yes									1
Trinitrobenzene, 1,3,5-	99-35-4	No	No					3.00E-02	U			1
Trinitrotoluene, 2,4,6-	118-96-7	No	No	3.00E-02	U			5.00E-04	U			1
Triphenylphosphine Oxide	791-28-6	No	No					2.00E-02	U			1
Triphenyltin	668-34-8	No	Yes									1
Tripotassium phosphate	7778-53-2	No	No					4.86E+01	U			1
Tripropyl Lead	6618-03-7	No	Yes									1
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	No	No					2.00E-02	U			1
Tris(1-chloro-2-propyl)phosphate	13674-84-5	No	No					1.00E-02	U			1
Tris(2,3-dibromopropyl)phosphate	126-72-7	No	Yes	2.30E+00	U	6.60E-04	U					1
Tris(2-chloroethyl)phosphate	115-96-8	No	No	2.00E-02	U			7.00E-03	U			1
Tris(2-ethylhexyl)phosphate	78-42-2	No	No	3.20E-03	U			1.00E-01	U			1
Trisbutoxyethyl Phosphate	78-51-3	No	No									1
Trisodium phosphate	7601-54-9	No	No					4.86E+01	U			1
Trithion	786-19-6	No	No									1
Tungsten	7440-33-7	No	No									1
Uranium (Soluble Salts)	NA	No	No					3.00E-03	U	4.00E-05	U	1
Urea	57-13-6	No	No									1
Urethane	51-79-6	Yes	No	1.00E+00	U	2.90E-04	U					1
Vanadium Pentoxide	1314-62-1	No	No			8.30E-03	U	9.00E-03	U	7.00E-06	U	0.026
Vanadium Sulfate	36907-42-3	No	No									0.026
Vanadium and Compounds	7440-62-2	No	No					5.04E-03	U	1.00E-04	U	0.026
Vanadyl Sulfate	27774-13-6	No	No									1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Triethyl phosphorothioate [O,O,O-]	126-68-1		1	3.87E+04	4.67E+02	3.23E+09					
Triethylamine	121-44-8		1	2.18E+04	2.78E+04	3.23E+09					
Triethylene Glycol	112-27-6	0.1	1			3.23E+09					
Trifluralin	1582-09-8		1	7.07E+05		3.23E+09	2.54E+03			2.54E+03	
Trimagnesium phosphate	7757-87-1		1			3.23E+09					
Trimethyl Lead	7442-13-9		1	1.54E+03	6.92E+04	3.23E+09					
Trimethyl Phosphate	512-56-1	0.1	1			3.23E+09	9.77E+02	3.42E+03		7.60E+02	
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1		1	6.96E+05		3.23E+09					
Trimethylbenzene, 1,2,3-	526-73-8		1	1.30E+04	2.93E+02	3.23E+09					
Trimethylbenzene, 1,2,4-	95-63-6		1	1.09E+04	2.18E+02	3.23E+09					
Trimethylbenzene, 1,3,5-	108-67-8		1	9.11E+03	1.82E+02	3.23E+09					
Trimethylethyl Lead	1762-26-1		1	1.98E+03	2.51E+04	3.23E+09					
Trimethylpentane, 2,2,4-	540-84-1		1	1.29E+03	6.10E+01	3.23E+09					
Trinitrobenzene, 1,3,5-	99-35-4	0.019	1			3.23E+09					
Trinitrotoluene, 2,4,6-	118-96-7	0.032	1			3.23E+09	6.52E+02	7.12E+03		5.97E+02	
Triphenylphosphine Oxide	791-28-6	0.1	1			3.23E+09					
Triphenyltin	668-34-8		1	2.79E+06		3.23E+09					
Tripotassium phosphate	7778-53-2		1			3.23E+09					
Tripropyl Lead	6618-03-7		1	2.30E+03	5.57E+02	3.23E+09					
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	0.1	1			3.23E+09					
Tris(1-chloro-2-propyl)phosphate	13674-84-5	0.1	1			3.23E+09					
Tris(2,3-dibromopropyl)phosphate	126-72-7		1	1.25E+06	4.67E+02	3.23E+09	8.50E+00		4.82E+02	8.35E+00	
Tris(2-chloroethyl)phosphate	115-96-8	0.1	1			3.23E+09	9.77E+02	3.42E+03		7.60E+02	
Tris(2-ethylhexyl)phosphate	78-42-2	0.1	1			3.23E+09	6.11E+03	2.14E+04		4.75E+03	
Trisbutoxyethyl Phosphate	78-51-3	0.1	1			3.23E+09					
Trisodium phosphate	7601-54-9		1			3.23E+09					
Trithion	786-19-6	0.1	1			3.23E+09					
Tungsten	7440-33-7		1			3.23E+09					
Uranium (Soluble Salts)	NA		1			3.23E+09					
Urea	57-13-6	0.1	1			3.23E+09					
Urethane	51-79-6	0.1	1			3.23E+09	6.64E+00	4.50E+01	1.55E+06	5.79E+00	
Vanadium Pentoxide	1314-62-1		1			3.23E+09			9.95E+04	9.95E+04	
Vanadium Sulfate	36907-42-3		1			3.23E+09					
Vanadium and Compounds	7440-62-2		1			3.23E+09					
Vanadyl Sulfate	27774-13-6		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Triethyl phosphorothioate [O,O,O-]	126-68-1								
Triethylamine	121-44-8						1.34E+04	1.34E+04	1.34E+04 nc
Triethylene Glycol	112-27-6				1.34E+07	4.69E+07		1.04E+07	1.04E+07 max
Trifluralin	1582-09-8				5.03E+04			5.03E+04	2.54E+03 ca*
Trimagnesium phosphate	7757-87-1				3.26E+08			3.26E+08	3.26E+08 max
Trimethyl Lead	7442-13-9								
Trimethyl Phosphate	512-56-1				6.70E+04	2.34E+05		5.21E+04	7.60E+02 ca*
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1								
Trimethylbenzene, 1,2,3-	526-73-8						5.70E+03	5.70E+03	5.70E+03 sat
Trimethylbenzene, 1,2,4-	95-63-6						6.69E+03	6.69E+03	6.69E+03 sat
Trimethylbenzene, 1,3,5-	108-67-8				6.70E+04			6.70E+04	6.70E+04 sat
Trimethylethyl Lead	1762-26-1								
Trimethylpentane, 2,2,4-	540-84-1								
Trinitrobenzene, 1,3,5-	99-35-4				2.01E+05	3.70E+06		1.91E+05	1.91E+05 max
Trinitrotoluene, 2,4,6-	118-96-7				3.35E+03	3.66E+04		3.07E+03	5.97E+02 ca**
Triphenylphosphine Oxide	791-28-6				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Triphenyltin	668-34-8								
Tripotassium phosphate	7778-53-2				3.26E+08			3.26E+08	3.26E+08 max
Tripropyl Lead	6618-03-7								
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8				1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Tris(1-chloro-2-propyl)phosphate	13674-84-5				6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Tris(2,3-dibromopropyl)phosphate	126-72-7								8.35E+00 ca
Tris(2-chloroethyl)phosphate	115-96-8				4.69E+04	1.64E+05		3.65E+04	7.60E+02 ca*
Tris(2-ethylhexyl)phosphate	78-42-2				6.70E+05	2.34E+06		5.21E+05	4.75E+03 ca
Trisbutoxyethyl Phosphate	78-51-3								
Trisodium phosphate	7601-54-9				3.26E+08			3.26E+08	3.26E+08 max
Trithion	786-19-6								
Tungsten	7440-33-7								
Uranium (Soluble Salts)	NA				2.01E+04		1.13E+07	2.01E+04	2.01E+04 nc
Urea	57-13-6								
Urethane	51-79-6								5.79E+00 ca
Vanadium Pentoxide	1314-62-1				6.03E+04		1.98E+06	5.85E+04	5.85E+04 nc
Vanadium Sulfate	36907-42-3								
Vanadium and Compounds	7440-62-2				3.38E+04		2.83E+07	3.37E+04	3.37E+04 nc
Vanadyl Sulfate	27774-13-6								

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS
Vernolate	1929-77-7	No	Yes					1.00E-03	U			1
Vinclozolin	50471-44-8	No	No					2.50E-02	U			1
Vinyl Acetate	108-05-4	No	Yes					1.00E+00	U	2.00E-01	U	1
Vinyl Bromide	593-60-2	No	Yes			3.20E-05	U			3.00E-03	U	1
Vinyl Chloride	75-01-4	Yes	Yes	7.20E-01	U	4.40E-06	U	3.00E-03	U	1.00E-01	U	1
Warfarin	81-81-2	No	No					3.00E-04	U			1
Xylene, P-	106-42-3	No	Yes					2.00E-01	U	1.00E-01	U	1
Xylene, m-	108-38-3	No	Yes					2.00E-01	U	1.00E-01	U	1
Xylene, o-	95-47-6	No	Yes					2.00E-01	U	1.00E-01	U	1
Xylenes	1330-20-7	No	Yes					2.00E-01	U	1.00E-01	U	1
Ytterbium	7440-64-4	No	No									1
Yttrium	7440-65-5	No	No									1
Zinc Cyanide	557-21-1	No	No					5.00E-02	U			1
Zinc Phosphide	1314-84-7	No	No					3.00E-04	U			1
Zinc and Compounds	7440-66-6	No	No					3.00E-01	U			1
Zineb	12122-67-7	No	No					5.00E-02	U			1
Zirconium	7440-67-7	No	No					8.00E-05	U			1

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)
Vernolate	1929-77-7		1	1.70E+05		3.23E+09					
Vinclozolin	50471-44-8	0.1	1			3.23E+09					
Vinyl Acetate	108-05-4		1	6.06E+03	2.75E+03	3.23E+09					
Vinyl Bromide	593-60-2		1	1.89E+03	3.38E+03	3.23E+09			1.51E+01	1.51E+01	
Vinyl Chloride	75-01-4		1	1.32E+03	3.92E+03	3.23E+09	2.71E+01		2.98E-01	2.95E-01	
Warfarin	81-81-2	0.1	1			3.23E+09					
Xylene, P-	106-42-3		1	7.70E+03	3.89E+02	3.23E+09					
Xylene, m-	108-38-3		1	7.54E+03	3.87E+02	3.23E+09					
Xylene, o-	95-47-6		1	8.90E+03	4.34E+02	3.23E+09					
Xylenes	1330-20-7		1	8.93E+03	2.58E+02	3.23E+09					
Ytterbium	7440-64-4		1			3.23E+09					
Yttrium	7440-65-5		1			3.23E+09					
Zinc Cyanide	557-21-1		1			3.23E+09					
Zinc Phosphide	1314-84-7		1			3.23E+09					
Zinc and Compounds	7440-66-6		1			3.23E+09					
Zineb	12122-67-7	0.1	1			3.23E+09					
Zirconium	7440-67-7		1			3.23E+09					

Site-specific
Recreator Screening Levels (RSL) for Soil
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Vernolate	1929-77-7				6.70E+03			6.70E+03	6.70E+03 nc
Vinclozolin	50471-44-8				1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Vinyl Acetate	108-05-4				6.70E+06		1.06E+05	1.05E+05	1.05E+05 sat
Vinyl Bromide	593-60-2						4.96E+02	4.96E+02	1.51E+01 ca*
Vinyl Chloride	75-01-4				2.01E+04		1.15E+04	7.33E+03	2.95E-01 ca
Warfarin	81-81-2				2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Xylene, P-	106-42-3				1.34E+06		6.75E+04	6.42E+04	6.42E+04 sat
Xylene, m-	108-38-3				1.34E+06		6.60E+04	6.29E+04	6.29E+04 sat
Xylene, o-	95-47-6				1.34E+06		7.80E+04	7.37E+04	7.37E+04 sat
Xylenes	1330-20-7				1.34E+06		7.82E+04	7.39E+04	7.39E+04 sat
Ytterbium	7440-64-4								
Yttrium	7440-65-5								
Zinc Cyanide	557-21-1				3.35E+05			3.35E+05	3.35E+05 max
Zinc Phosphide	1314-84-7				2.01E+03			2.01E+03	2.01E+03 nc
Zinc and Compounds	7440-66-6				2.01E+06			2.01E+06	2.01E+06 max
Zineb	12122-67-7				3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Zirconium	7440-67-7				5.36E+02			5.36E+02	5.36E+02 nc

General Statistics on Uncensored Data

Date/Time of Computation 5/22/2014 10:22:54 AM

User Selected Options

From File FTMM-12 SOIL UCL.xls

Full Precision OFF

From File: FTMM-12 SOIL UCL.xls

General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method

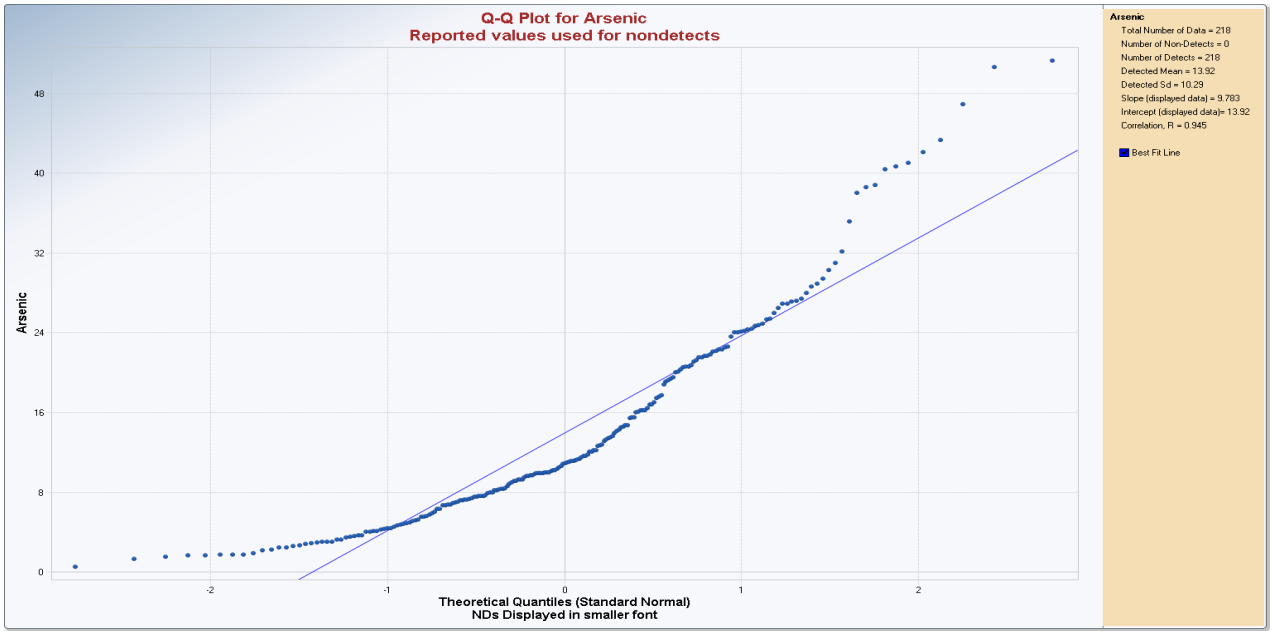
Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Benzo(a)pyrene	153	0	70	83	54.25%	100	5300	593.7	2462534	1569	2.643
Arsenic	218	0	218	0	0.00%	N/A	N/A	13.92	105.9	10.29	0.739
Mercury	153	0	104	49	32.03%	0.013	0.034	0.281	5.798	2.408	8.573
Lead	218	0	182	36	16.51%	10.3	13.7	40.84	8337	91.31	2.236

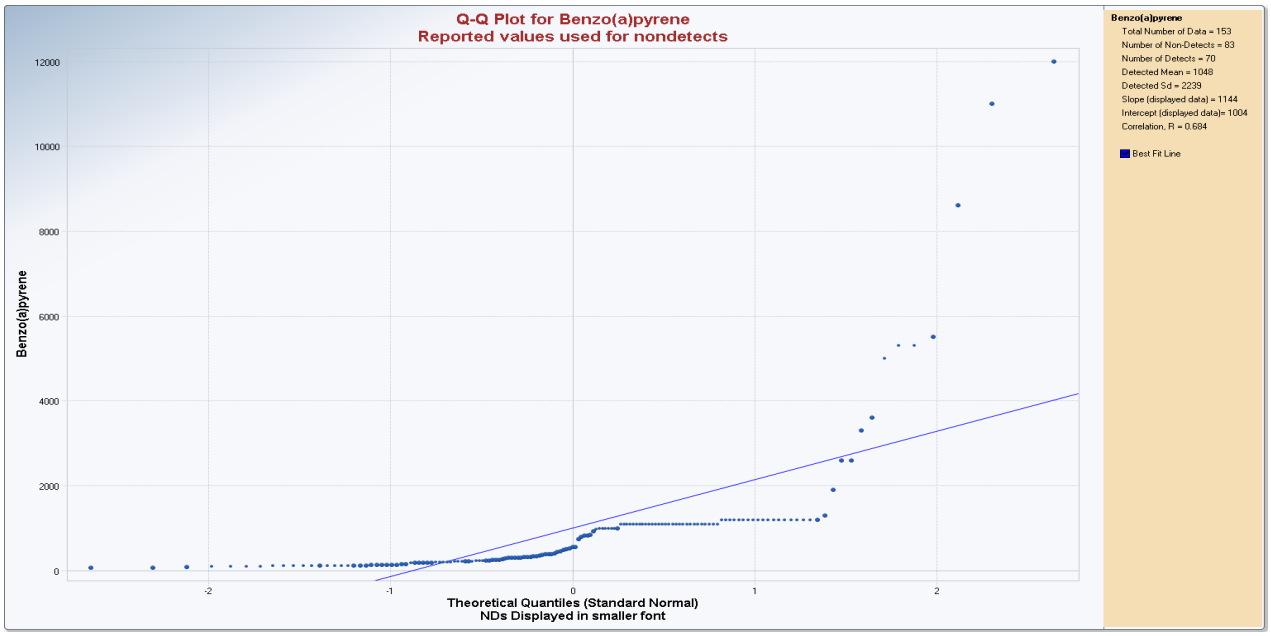
General Statistics for Raw Data Sets using Detected Data Only

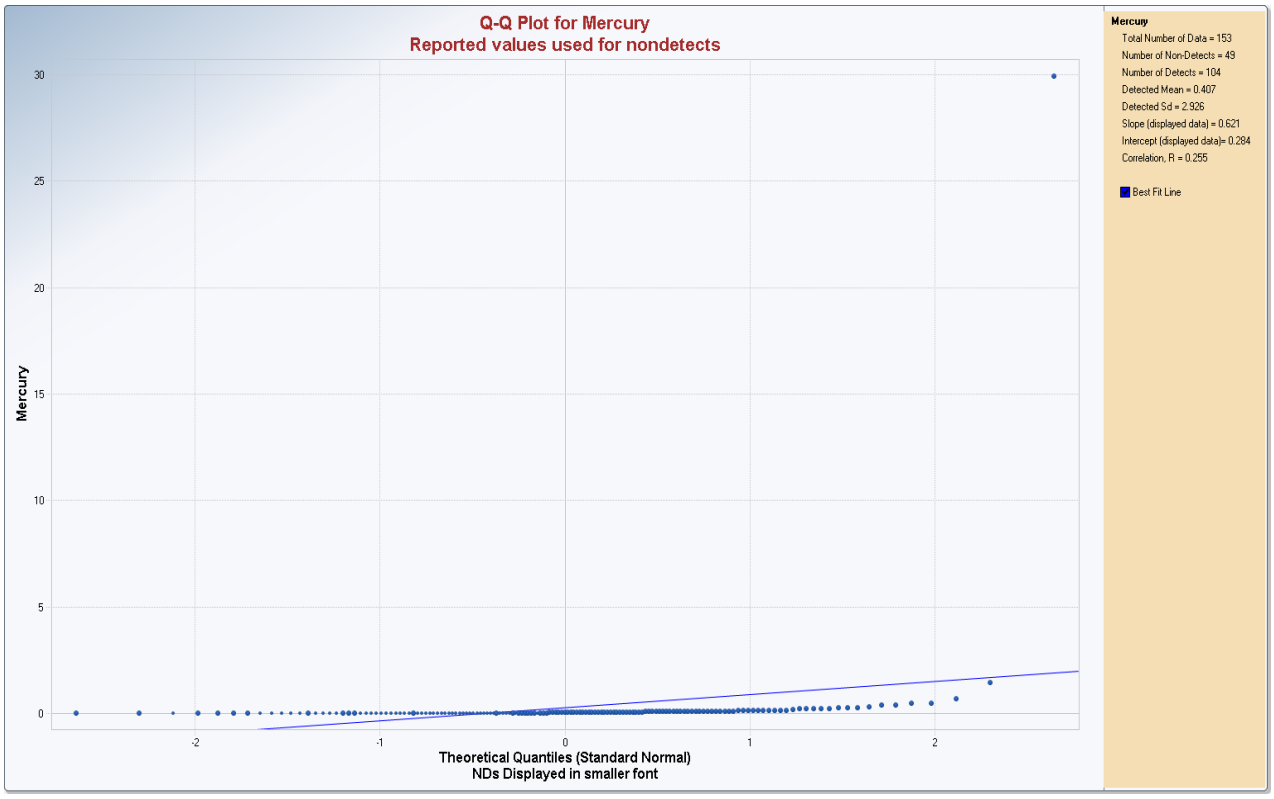
Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Benzo(a)pyrene	70	0	60	12000	1048	315	5015279	2239	259.5	3.755	2.136
Arsenic	218	0	0.49	51.3	13.92	10.89	105.9	10.29	8.769	1.254	0.739
Mercury	104	0	0.0061	29.91	0.407	0.078	8.562	2.926	0.0519	10.15	7.195
Lead	182	0	2.86	1090	47.55	26.65	9767	98.83	22.6	7.64	2.078

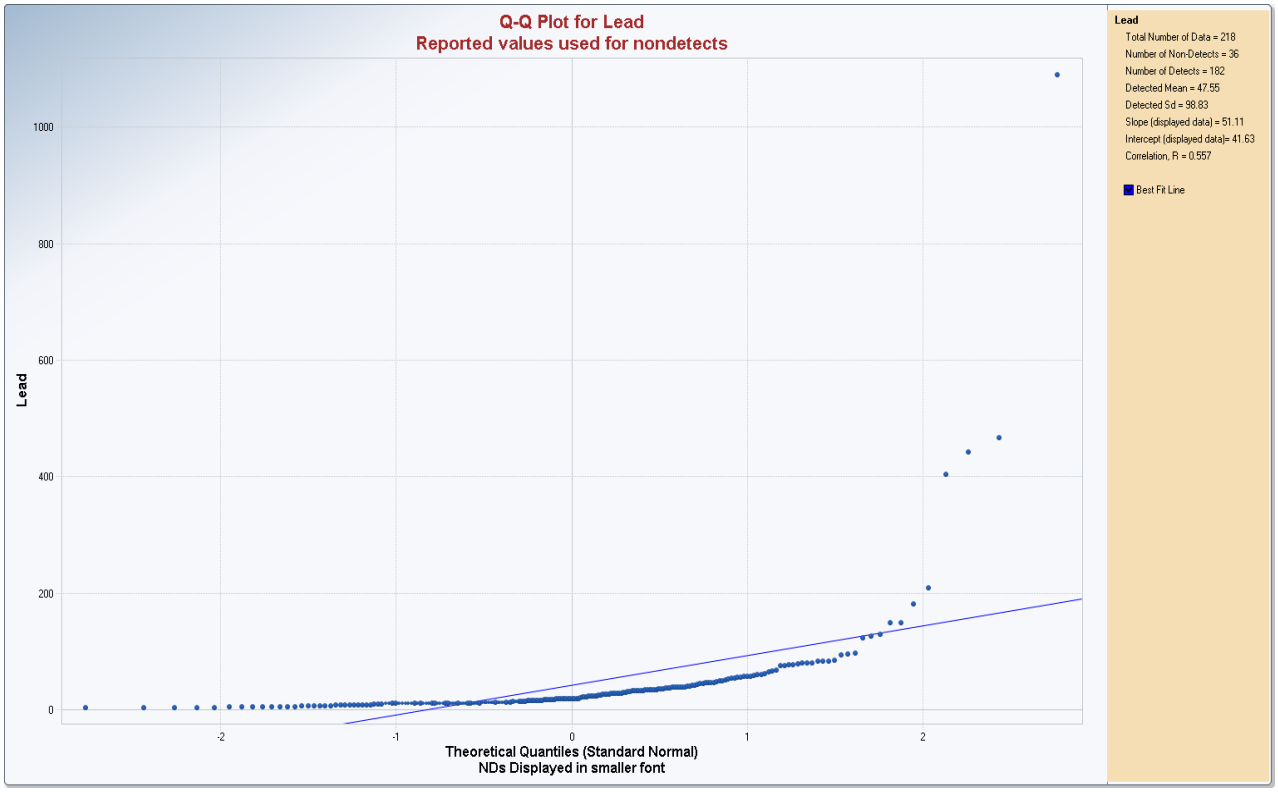
Percentiles using all Detects (Ds) and Non-Detects (NDs)

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Benzo(a)pyrene	153	0	120	190	200	550	1100	1200	1200	3420	9752
Arsenic	218	0	3.235	5.19	6.709	10.89	20.45	21.98	26.96	35.59	46.29
Mercury	153	0	0.021	0.023	0.024	0.047	0.094	0.111	0.201	0.29	1.056
Lead	218	0	7.465	11.1	11.5	18.72	40.48	48.82	77.37	100.4	435.6




Q-Q Plot for Benzo(a)pyrene
Reported values used for nondetects
Benzo(a)pyrene
Total Number of Data = 153
Number of Non-Detects = 83
Number of Detects = 70
Detected Mean = 1048
Detected Sd = 2239
Slope (displayed data) = 1144
Intercept (displayed data)= 1004
Correlation, R = 0.684
Best Fit Line
Benzo(a)pyrene
12000
10000
8000
6000
4000
2000
0
-2
-1
0
1
2
Theoretical Quantiles (Standard Normal)
NDs Displayed in smaller font


Q-Q Plot for Mercury
Reported values used for nondetects
Mercury
Total Number of Data = 153
Number of Non-Detects = 49
Number of Detects = 104
Detected Mean = 0.407
Detected Sd = 2.926
Slope (displayed data) = 0.621
Intercept (displayed data)= 0.284
Correlation, R = 0.255
Best Fit Line
Mercury
30
25
20
15
10
5
0
-2
-1
0
1
2
Theoretical Quantiles (Standard Normal)
NDs Displayed in smaller font



Outlier Tests for Selected Variables excluding nondetects

User Selected Options

Date/Time of Computation 5/22/2014 10:21:11 AM
From File FTMM-12 SOIL UCL.xls
Full Precision OFF

Rosner's Outlier Test for 1 Outliers in Mercury

Total N	**153**
Number NDs	**49**
Number Detects	**104**
Mean of Detects	**0.407**
SD of Detects	**2.926**
Number of data	**104**
Number of suspected outliers	**1**
NDs not included in the following:	

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	0.407	2.912	29.91	104	10.13	3.391	3.761

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 29.91 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Rosner's Outlier Test for 1 Outliers in Arsenic

Total N	**218**
Number NDs	**0**
Number Detects	**218**
Mean of Detects	**13.92**
SD of Detects	**10.29**
Number of data	**218**
Number of suspected outliers	**1**
NDs not included in the following:	

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	13.92	10.27	51.3	218	3.641	3.63	4.002

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 51.3 is a Potential Statistical Outlier

For 1% Significance Level, there is no Potential Outlier

Rosner's Outlier Test for 1 Outliers in Benzo(a)pyrene

Total N	**153**
Number NDs	**83**
Number Detects	**70**
Mean of Detects	**1048**
SD of Detects	**2239**
Number of data	**70**
Number of suspected outliers	**1**
NDs not included in the following:	

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	1048	2223	12000	70	4.926	3.26	3.62

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 12000 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Rosner's Outlier Test for 1 Outliers in Lead

Total N	**218**
Number NDs	**36**
Number Detects	**182**
Mean of Detects	**47.55**
SD of Detects	**98.83**
Number of data	**182**
Number of suspected outliers	**1**
NDs not included in the following:	

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	47.55	98.55	1090	182	10.58	3.578	3.948

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 1090 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/22/2014 10:19:04 AM
From File	FTMM-12 SOIL UCL.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene

General Statistics

Total Number of Observations	153	Number of Distinct Observations	54
Number of Detects	70	Number of Non-Detects	83
Number of Distinct Detects	47	Number of Distinct Non-Detects	14
Minimum Detect	60	Minimum Non-Detect	100
Maximum Detect	12000	Maximum Non-Detect	5300
Variance Detects	5015279	Percent Non-Detects	54.25%
Mean Detects	1048	SD Detects	2239
Median Detects	315	CV Detects	2.136
Skewness Detects	3.755	Kurtosis Detects	14.43
Mean of Logged Detects	6.011	SD of Logged Detects	1.172

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.449	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.351	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.106	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	593.7	Standard Error of Mean	128.7
SD	1569	95% KM (BCA) UCL	837
95% KM (t) UCL	806.7	95% KM (Percentile Bootstrap) UCL	826
95% KM (z) UCL	805.4	95% KM Bootstrap t UCL	903
90% KM Chebyshev UCL	979.7	95% KM Chebyshev UCL	1155
97.5% KM Chebyshev UCL	1397	99% KM Chebyshev UCL	1874

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	6.505	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.803	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.252	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.111	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.647	k star (bias corrected MLE)	0.629
Theta hat (MLE)	1620	Theta star (bias corrected MLE)	1667
nu hat (MLE)	90.6	nu star (bias corrected)	88.05
MLE Mean (bias corrected)	1048	MLE Sd (bias corrected)	1322

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.143	nu hat (KM)	43.8
Approximate Chi Square Value (43.80, α)	29.62	Adjusted Chi Square Value (43.80, β)	29.51
95% Gamma Approximate KM-UCL (use when n>=50)	877.8	95% Gamma Adjusted KM-UCL (use when n<50)	881.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	599.8
Maximum	12000	Median	140
SD	1609	CV	2.683
k hat (MLE)	0.163	k star (bias corrected MLE)	0.165
Theta hat (MLE)	3669	Theta star (bias corrected MLE)	3643
nu hat (MLE)	50.03	nu star (bias corrected)	50.38
MLE Mean (bias corrected)	599.8	MLE Sd (bias corrected)	1478
		Adjusted Level of Significance (β)	0.0484
Approximate Chi Square Value (50.38, α)	35.08	Adjusted Chi Square Value (50.38, β)	34.96
95% Gamma Approximate UCL (use when n>=50)	861.4	95% Gamma Adjusted UCL (use when n<50)	864.3

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.149	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.106	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	593.1	Mean in Log Scale	5.364
SD in Original Scale	1576	SD in Log Scale	1.247
95% t UCL (assumes normality of ROS data)	803.9	95% Percentile Bootstrap UCL	801.3
95% BCA Bootstrap UCL	898.8	95% Bootstrap t UCL	954
95% H-UCL (Log ROS)	594.8		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	741.9	Mean in Log Scale	5.873
SD in Original Scale	1573	SD in Log Scale	1.1
95% t UCL (Assumes normality)	952.4	95% H-Stat UCL	799

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	837

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Mercury

General Statistics

Total Number of Observations	153	Number of Distinct Observations	87
Number of Detects	104	Number of Non-Detects	49
Number of Distinct Detects	81	Number of Distinct Non-Detects	14
Minimum Detect	0.0061	Minimum Non-Detect	0.013
Maximum Detect	29.91	Maximum Non-Detect	0.034
Variance Detects	8.562	Percent Non-Detects	32.03%
Mean Detects	0.407	SD Detects	2.926
Median Detects	0.078	CV Detects	7.195
Skewness Detects	10.15	Kurtosis Detects	103.3
Mean of Logged Detects	-2.525	SD of Logged Detects	1.086

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.123	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.458	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0869	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.281	Standard Error of Mean	0.196
SD	2.408	95% KM (BCA) UCL	0.678
95% KM (t) UCL	0.605	95% KM (Percentile Bootstrap) UCL	0.672
95% KM (z) UCL	0.603	95% KM Bootstrap t UCL	5.551
90% KM Chebyshev UCL	0.868	95% KM Chebyshev UCL	1.133
97.5% KM Chebyshev UCL	1.502	99% KM Chebyshev UCL	2.227

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	18.06	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.842	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.327	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0947	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.404	k star (bias corrected MLE)	0.399
Theta hat (MLE)	1.006	Theta star (bias corrected MLE)	1.019
nu hat (MLE)	84.08	nu star (bias corrected)	82.99
MLE Mean (bias corrected)	0.407	MLE Sd (bias corrected)	0.644

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0136	nu hat (KM)	4.163
Approximate Chi Square Value (4.16, α)	0.787	Adjusted Chi Square Value (4.16, β)	0.774
95% Gamma Approximate KM-UCL (use when n>=50)	1.485	95% Gamma Adjusted KM-UCL (use when n<50)	1.51

Gamma (KM) may not be used when k hat (KM) is < 0.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0061	Mean	0.28
Maximum	29.91	Median	0.047
SD	2.416	CV	8.64
k hat (MLE)	0.351	k star (bias corrected MLE)	0.348
Theta hat (MLE)	0.797	Theta star (bias corrected MLE)	0.803
nu hat (MLE)	107.3	nu star (bias corrected)	106.5
MLE Mean (bias corrected)	0.28	MLE Sd (bias corrected)	0.474
		Adjusted Level of Significance (β)	0.0484
Approximate Chi Square Value (106.54, α)	83.72	Adjusted Chi Square Value (106.54, β)	83.53
95% Gamma Approximate UCL (use when n>=50)	0.356	95% Gamma Adjusted UCL (use when n<50)	0.357

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.104	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0869	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.28	Mean in Log Scale	-3.158
SD in Original Scale	2.416	SD in Log Scale	1.32
95% t UCL (assumes normality of ROS data)	0.604	95% Percentile Bootstrap UCL	0.669
95% BCA Bootstrap UCL	1.058	95% Bootstrap t UCL	5.466
95% H-UCL (Log ROS)	0.133		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.28	Mean in Log Scale	-3.143
SD in Original Scale	2.416	SD in Log Scale	1.273
95% t UCL (Assumes normality)	0.603	95% H-Stat UCL	0.125

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.133

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Arsenic

General Statistics

Total Number of Observations	218	Number of Distinct Observations	207
		Number of Missing Observations	0
Minimum	0.49	Mean	13.92
Maximum	51.3	Median	10.89
SD	10.29	Std. Error of Mean	0.697
Coefficient of Variation	0.739	Skewness	1.254

Normal GOF Test

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.06	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15.07	95% Adjusted-CLT UCL (Chen-1995)	15.13
		95% Modified-t UCL (Johnson-1978)	15.08

Gamma GOF Test

A-D Test Statistic	0.445	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.768	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0453	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.0625	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.851	k star (bias corrected MLE)	1.829
Theta hat (MLE)	7.52	Theta star (bias corrected MLE)	7.612
nu hat (MLE)	807.2	nu star (bias corrected)	797.4
MLE Mean (bias corrected)	13.92	MLE Sd (bias corrected)	10.29
		Approximate Chi Square Value (0.05)	732.9
Adjusted Level of Significance	0.0489	Adjusted Chi Square Value	732.5

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	15.15	95% Adjusted Gamma UCL (use when n<50)	15.16

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.968	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.00481	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0545	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.06	Data appear Lognormal at 5% Significance Level	

Data appear Approximate Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.713	Mean of logged Data	2.34
Maximum of Logged Data	3.938	SD of logged Data	0.827

Assuming Lognormal Distribution

95% H-UCL	16.36	90% Chebyshev (MVUE) UCL	17.4
95% Chebyshev (MVUE) UCL	18.68	97.5% Chebyshev (MVUE) UCL	20.45
99% Chebyshev (MVUE) UCL	23.93		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	15.07	95% Jackknife UCL	15.07
95% Standard Bootstrap UCL	15.07	95% Bootstrap-t UCL	15.15
95% Hall's Bootstrap UCL	15.21	95% Percentile Bootstrap UCL	15.08
95% BCA Bootstrap UCL	15.09		
90% Chebyshev(Mean, Sd) UCL	16.01	95% Chebyshev(Mean, Sd) UCL	16.96
97.5% Chebyshev(Mean, Sd) UCL	18.27	99% Chebyshev(Mean, Sd) UCL	20.86

Suggested UCL to Use

95% Approximate Gamma UCL	15.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Lead

General Statistics

Total Number of Observations	218	Number of Distinct Observations	189
Number of Detects	182	Number of Non-Detects	36
Number of Distinct Detects	173	Number of Distinct Non-Detects	22
Minimum Detect	2.86	Minimum Non-Detect	10.3
Maximum Detect	1090	Maximum Non-Detect	13.7
Variance Detects	9767	Percent Non-Detects	16.51%
Mean Detects	47.55	SD Detects	98.83
Median Detects	26.65	CV Detects	2.078
Skewness Detects	7.64	Kurtosis Detects	72.02
Mean of Logged Detects	3.242	SD of Logged Detects	1.014

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.382	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.326	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0657	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	40.84	Standard Error of Mean	6.202
SD	91.31	95% KM (BCA) UCL	51.97
95% KM (t) UCL	51.09	95% KM (Percentile Bootstrap) UCL	52.25
95% KM (z) UCL	51.04	95% KM Bootstrap t UCL	59.31
90% KM Chebyshev UCL	59.45	95% KM Chebyshev UCL	67.88
97.5% KM Chebyshev UCL	79.57	99% KM Chebyshev UCL	102.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.496	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.787	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.128	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0705	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.939	k star (bias corrected MLE)	0.927
Theta hat (MLE)	50.64	Theta star (bias corrected MLE)	51.29
nu hat (MLE)	341.8	nu star (bias corrected)	337.5
MLE Mean (bias corrected)	47.55	MLE Sd (bias corrected)	49.38

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.2	nu hat (KM)	87.23
Approximate Chi Square Value (87.23, α)	66.7	Adjusted Chi Square Value (87.23, β)	66.58
95% Gamma Approximate KM-UCL (use when n>=50)	53.41	95% Gamma Adjusted KM-UCL (use when n<50)	53.51

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	39.7
Maximum	1090	Median	18.72
SD	91.97	CV	2.317
k hat (MLE)	0.382	k star (bias corrected MLE)	0.38
Theta hat (MLE)	103.9	Theta star (bias corrected MLE)	104.5
nu hat (MLE)	166.6	nu star (bias corrected)	165.6
MLE Mean (bias corrected)	39.7	MLE Sd (bias corrected)	64.4
		Adjusted Level of Significance (β)	0.0489
Approximate Chi Square Value (165.64, α)	136.9	Adjusted Chi Square Value (165.64, β)	136.7
95% Gamma Approximate UCL (use when n>=50)	48.04	95% Gamma Adjusted UCL (use when n<50)	48.1

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0428	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0657	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	40.86	Mean in Log Scale	3.025
SD in Original Scale	91.51	SD in Log Scale	1.052
95% t UCL (assumes normality of ROS data)	51.1	95% Percentile Bootstrap UCL	51.9
95% BCA Bootstrap UCL	55.75	95% Bootstrap t UCL	58.94
95% H-UCL (Log ROS)	41.89		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.015	95% H-UCL (KM -Log)	42.28
KM SD (logged)	1.067	95% Critical H Value (KM-Log)	2.205
KM Standard Error of Mean (logged)	0.0739		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	40.66	Mean in Log Scale	2.998
SD in Original Scale	91.58	SD in Log Scale	1.077
95% t UCL (Assumes normality)	50.91	95% H-Stat UCL	42.12

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	67.88

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.100	0.100
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	50	50
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**4,905**	**2,705**

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	50	50
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**9,810**	**5,410**

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.330	0.330
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	30	30
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**2,477**	**1,366**

APPENDIX C
COST ESTIMATE

APPENDIX C
LANDFILL COVER AND LAND USE CONTROLS COST ESTIMATE
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Table of Contents

C.1A Cost Estimate Summary
C.1B Response Actions Cost Summary
C.2 LUCs: Cost Breakdown
C.3 LUCs: Present Value
C.4 Attachments for LUC Implementation
C.5 Landfill Cover
C.6 Attachments for Landfill Cover

TABLE C.1A
COST ESTIMATE SUMMARY
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

	Description	Capital Cost	Annual Operations and Maintenance Cost [a/]	Periodic Cost [b/]	Non-Discounted Constant Dollar Cost [c/]	TPV at 1.90% Discount Rate [d/]
	Landfill Cover and Land Use Controls (LUCs)	**$1,537,657**	**$4,000**	**$0**	**$1,654,657**	**$1,620,000**

NOTES

[a/] Highest annual operations and maintenance (O&M) costs for remedial alternatives shown. Some costs decrease after a period of operation.

[b/] Highest annual periodic costs for remedial alternatives shown. Periodic costs may be less during a specific year.

[c/] Non-discounted constant dollar cost provided to show impact of discount rate on total present value (TPV).

[d/] TPV cost estimates are considered accurate to within -30% to +50% of actual costs. Discount rate is shown below.

Other Notes/Assumptions

1. Design and construction contingencies have been added to capital and O&M costs based on USEPA (2000) and professional judgment.
   USEPA. 2000. *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study.* USEPA 540-R-00-002. July.

		Source
Discount Rate:	1.90%	30-Year, Real Discount Rate from White House Office of Management and Budget, Circular A-94 Appendix C, Revised December 2013

TABLE C.1B
RESPONSE ACTIONS COST SUMMARY
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

	Description	Capital Cost	Annual Operations and Maintenance Cost [a/]	Periodic Cost [b/]	Non-Discounted Constant Dollar Cost [c/]	TPV at 1.90% Discount Rate [d/]
	Land Use Controls	$63,000	$4,000	$0	**$180,000**	$150,000
	Landfill Cover	$1,474,657	$0	$0	**$1,474,657**	$1,470,000

NOTES

[a/] Highest annual operations and maintenance (O&M) costs for remedial alternatives shown. Some costs decrease after a period of operation.

[b/] Highest annual periodic costs for remedial alternatives shown. Periodic costs may be less during a specific year.

[c/] Non-discounted constant dollar cost provided to show impact of discount rate on total present value (TPV).

[d/] TPV cost estimates are considered accurate to within -30% to +50% of actual costs. Discount rate is shown below.

Other Notes/Assumptions

1. Design and construction contingencies have been added to capital and O&M costs based on USEPA (2000) and professional judgment.

		Source
Discount Rate:	1.90%	30-Year, Real Discount Rate from White House Office of Management and Budget, Circular A-94 Appendix C, Revised December 2013

TABLE C.2
LAND USE CONTROLS
COST BREAKDOWN
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Item		Units	Unit Cost	Extended
Capital				
Implementation of Land Use Controls (See Table C.5, Attachment 1)	1	Lump Sum	$ 50,000	$ 50,000
			Sub-Total	$ 50,000
Contingency (design + construction)	25%			$ 12,500
			Capital Total	**$ 62,500**
Annual Operation and Maintenance				
Land Use Controls Inspection and Reporting (30 Years)	1	each	$ 3,200	$ 3,200
Contingency	25%			$ 800
			Annual Total	**$ 4,000**

Asssumptions:
1) LUCs have a 30-year duration.

TABLE C.3
LAND USE CONTROLS
PRESENT VALUE
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Year	Capital Cost ($)	Annual O&M ($) (LUCs)	Periodic Costs ($)	Total Cost	Discount Factor at 1.90%	Present Value at 1.90%
Annual Cost for Remedial Alternatives with Source Control - Cost shown for 30 years						
0	$ 62,500	$ -	$ -	$ 62,500	1.000	$ 62,500
1	$ -	$ 4,000	$ -	$ 4,000	0.981	$ 3,926
2	$ -	$ 4,000	$ -	$ 4,000	0.963	$ 3,853
3	$ -	$ 4,000	$ -	$ 4,000	0.945	$ 3,781
4	$ -	$ 4,000	$ -	$ 4,000	0.927	$ 3,710
5	$ -	$ 4,000	$ -	$ 4,000	0.910	$ 3,641
6	$ -	$ 4,000	$ -	$ 4,000	0.893	$ 3,573
7	$ -	$ 4,000	$ -	$ 4,000	0.877	$ 3,507
8	$ -	$ 4,000	$ -	$ 4,000	0.860	$ 3,441
9	$ -	$ 4,000	$ -	$ 4,000	0.844	$ 3,377
10	$ -	$ 4,000	$ -	$ 4,000	0.828	$ 3,314
11	$ -	$ 4,000	$ -	$ 4,000	0.813	$ 3,252
12	$ -	$ 4,000	$ -	$ 4,000	0.798	$ 3,192
13	$ -	$ 4,000	$ -	$ 4,000	0.783	$ 3,132
14	$ -	$ 4,000	$ -	$ 4,000	0.768	$ 3,074
15	$ -	$ 4,000	$ -	$ 4,000	0.754	$ 3,017
16	$ -	$ 4,000	$ -	$ 4,000	0.740	$ 2,960
17	$ -	$ 4,000	$ -	$ 4,000	0.726	$ 2,905
18	$ -	$ 4,000	$ -	$ 4,000	0.713	$ 2,851
19	$ -	$ 4,000	$ -	$ 4,000	0.699	$ 2,798
20	$ -	$ 4,000	$ -	$ 4,000	0.686	$ 2,746
21	$ -	$ 4,000	$ -	$ 4,000	0.674	$ 2,695
22	$ -	$ 4,000	$ -	$ 4,000	0.661	$ 2,644
23	$ -	$ 4,000	$ -	$ 4,000	0.649	$ 2,595
24	$ -	$ 4,000	$ -	$ 4,000	0.637	$ 2,547
25	$ -	$ 4,000	$ -	$ 4,000	0.625	$ 2,499
26	$ -	$ 4,000	$ -	$ 4,000	0.613	$ 2,453
27	$ -	$ 4,000	$ -	$ 4,000	0.602	$ 2,407
28	$ -	$ 4,000	$ -	$ 4,000	0.590	$ 2,362
29	$ -	$ 4,000	$ -	$ 4,000	0.579	$ 2,318
30	$ -	$ 4,000	$ -	$ 4,000	0.569	$ 2,275
TOTALS	**$ 62,500**	**$ 120,000**	**$ -**	**$ 182,500**		**$ 153,400**

TABLE C.4
ATTACHMENTS FOR LUC IMPLEMENTATION
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Attachment 1 - Implementation of Land Use Controls					
Subtask Description, Labor	**Quantity**	**Unit**	**Unit Cost**	**Cost**	**Source**
LUC Implementation Plan	1	Lump Sum	$ 25,000	$ 25,000	professional judgment
Delineate Area onto Master Planning Maps/GIS	1	Lump Sum	$ 25,000	$ 25,000	professional judgment
			Total	**$ 50,000**	

TABLE C.5
LANDFILL COVER
COST BREAKDOWN
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Item	Units		Unit Cost	Extended
Capital				
Soil Cover Installation (see Table C.6 Attachment 1)	1	Lump Sum	$ 1,174,000	$ 1,174,000
Geotechnical borings (see Table C.6 Attachment 2)	1	Lump Sum	$ 5,756	$ 5,756
			Sub-Total	$ 1,179,756
Contingency (design + construction)	25%			$ 294,900
			Capital Total	**$ 1,474,657**

TABLE C.6
ATTACHMENTS FOR LANDFILL COVER
SITE FTMM-12
FORT MONMOUTH, NEW JERSEY

Attachment 1 - Landfill Cover							
Item	**Quantity**	**Units**		**Unit Cost**		**Extended**	**Comments**
Capital							
Landfill Soil Cap Installation							
Mobilization and site preparation	1	Lump Sum	$	1,500.00	$	1,500	contractor bid
Clearing and grubbing	7.1	acre	$	2,900.00	$	20,590	contractor bid
Subgrade preparation and compaction	7.1	acre	$	4,250.00	$	30,175	contractor bid
Soil Cover material	7.1	acre	$	54,511	$	387,028	contractor bid
Placement of soil cover material	7.1	acre	$	10,865	$	77,142	contractor bid
Placement of vegetative layer material	7.1	acre	$	3,802	$	26,994	contractor bid
Seeding of soil caps	7.1	acre	$	4,845	$	34,400	contractor bid
Temporary erosion and sediment controls	842.0	LF	$	7	$	5,860	contractor bid
Permanent stormwater features	842	LF	$	31	$	26,336	contractor bid
Demobilization	1	Lump Sum	$	1,500	$	1,500	contractor bid
Subgrade material	14343	tons	$	14	$	204,394	contractor bid
Placement of Subgrade material	14343	tons	$	6	$	86,061	contractor bid
				Sub-Total	**$**	**901,979**	
Design & Construction Oversite							
Labor							
Design & Construction Oversite Labor	3020	Hour	$	90	$	271,800	professional judgment
					$	**271,800**	
	Sub-Total: Landfill Soil Cap Installation				**$**	**1,174,000**	

Attachment 2 - Geotechnical Borings							
Item	**Quantity**	**Unit**		**Unit Cost**		**Extended Cost**	**Notes**
Capital							
Geotechnical Borings -							
Mobilization	1	LS	$	611.11	$	611	contractor bid
hand clearing	2	/boring	$	50.00	$	100	contractor bid
HAS Drilling	1	/rig/day	$	1,850.00	$	1,850	contractor bid
Geoprobe Drilling (Soil Boring)	1	/rig/day	$	1,850.00	$	1,850	contractor bid
Boring Abandonment	100	per foot	$	3.00	$	300	contractor bid
Drums	13	/drum	$	65.00	$	845	contractor bid
shelby tube	2	each		100	$	200	contractor bid
	Sub-Total - Geotechnical borings:					**$5,756**	

Assumptions:

1) Areal extent of impacted material is 7.1 acres
2) Area to reseed is 7.1 acres
3) Two geotechnical borings will be advanced at the site
4) Soil cover is 2' in thickness (18" soil with 6" vegetative layer)