



DEPARTMENT OF THE ARMY

OFFICE OF ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
U.S. ARMY FORT MONMOUTH
P.O. 148
OCEANPORT, NEW JERSEY 07757

20 September 2017

Mr. Ashish Joshi
New Jersey Department of Environmental Protection
Division of Remediation Management & Response
Northern Bureau of Field Operations
7 Ridgedale Avenue (2nd Floor)
Cedar Knolls, NJ 07927-1112

**SUBJECT: Letter Work Plan for FTMM-57 Building 108 UST Gasoline Release
Fort Monmouth, New Jersey
PI G000000032**

Dear Mr. Joshi:

The Fort Monmouth (FTMM) Team is providing this work plan to summarize background information for FTMM-57 and to propose additional soil sampling to fulfill data needs.

FTMM-57 Background

FTMM-57 is located on the eastern edge of the Main Post near existing Buildings 484 and 488. FTMM-57 has also been designated as Site 108 based on proximity to the former Building T-108 Motor Pool Office, which was demolished between 1994 and 2004. Real property records indicate that four gasoline tanks and one kerosene tank with associated pump islands were installed at this location in 1952, and refer to this same area as the Building 109 motor pool gasoline and kerosene service station. Gasoline tanks and pump islands were present at this location as early as 1941 based on historical drawings.

As described in Reference 1, there were five underground storage tanks (USTs; Registration ID Nos. 90010-60 through 90010-64) located north of Building 488 and former Building 108. UST Nos. 60, 61 and 62 were steel single-wall 5,000-gallon unleaded gasoline tanks. UST No. 63 was a steel single-wall 5,000-gallon diesel fuel tank. UST No. 64 was a steel single-wall 5,000-gallon kerosene tank. In February and November 1990, tightness testing was performed on UST No. 63, and results confirmed the UST was "tight." There was no documentation of tightness testing for the other USTs.

In March and April 1993, the five USTs, dispensers, and appurtenant piping were drained, removed, and recycled offsite. Approximately 221 cubic yards of potentially contaminated soil was also removed and disposed offsite. UST Nos. 60, 61, and 62 were observed to be in good condition, while the condition of UST No. 63 was not documented (Reference 1). Several corrosion holes of approximately 1/16-inch diameter were observed on the UST No. 64 kerosene tank. In addition, a sheen was observed on the groundwater surface in the UST No. 64 excavation. Based on these observations of UST No. 64, a discharge was reported to the NJDEP on 12 April 1993 and case number 93-04-12-29 was assigned. Closure soil samples were collected (Figure 1) and analyzed; the original analytical results are presented in the excerpt of Reference 1 provided in Attachment B.1. Multiple analytes exceeded the

NJDEP Residential Direct Contact Soil Remediation Standards (RDCSRS) in one or more of the closure soil samples, as summarized in Table 1. Benzene exceeded the RDCSRS of 2.0 mg/kg in two soil samples: S-7 at 4.0 mg/kg, and S-17 at 2.5 mg/kg. Multiple polynuclear aromatic hydrocarbons (PAHs) also exceeded their respective RDCSRSs in closure soil samples; however, these PAHs are not typically associated with gasoline or kerosene releases, and so these PAHs do not appear to be associated with the fuel tanks.

Four monitoring wells were also installed between September 1993 and August 1995 as part of the UST closures. Quarterly groundwater monitoring for a full suite of analytes including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and metals was performed from 1997 through 2004. Exceedances of the Ground Water Quality Criteria (GWQC) for arsenic were noted. On 12 November 2004 (Attachment A) NJDEP approved reducing the groundwater monitoring analytes to metals only to monitor for arsenic in groundwater. Quarterly monitoring ceased in 2011 following FTMM closure. Annual monitoring was resumed from 2013 through 2015 (Reference 3) and, on 14 November 2016 (Appendix A), NJDEP approved elimination of groundwater monitoring at FTMM-57.

A Remedial Investigation (RI) for FTMM-57 was completed by Versar (2004; Reference 2). The lithology of FTMM-57 consisted of fill (brown sand, silt, cobbles and a trace of cinders), underlain by native material (glaucinitic greenish gray to black clay with sand) at 3 to 6 feet below ground surface. As reported in the RI (see excerpts in Attachment B.2), a Geoprobe investigation of arsenic and lead in soil was conducted in 2001 (see Figure 1) to evaluate potential sources of the elevated arsenic concentrations encountered in FTMM-57 groundwater. Soil arsenic concentrations exceeded the RDCSRS of 19 mg/kg in 14 of the 27 soil samples collected from 8 of the 9 borings, and ranged from 15 mg/kg to 297 mg/kg. Lead detections were below the RDCSRS of 400 mg/kg in all 27 soil samples.

NJDEP provided review comments on the RI report on 24 June 2008 (Attachment A) which included a requirement for additional evaluation of benzene in groundwater. In response to these NJDEP comments, the Army conducted additional soil and groundwater sampling in 2010 using 12 Geoprobe borings (BL-1 through BL-12; see Figure 1 and Attachment B.3). Temporary wells were installed at sample locations BL-5, BL-7, and BL-12 (Figure 1) and groundwater was sampled for VOCs analyses; no VOCs were detected (Attachment B.3). However multiple PAHs were detected in soil at concentrations in excess of the RDCSRS in the 2010 borings (Attachment B.3).

In summary, soil at FTMM-57 exceeds the RDCSRS for multiple PAHs and arsenic; however, these analytes are not attributable to the former FTMM-57 gasoline and kerosene service station. Groundwater monitoring results indicate that benzene is not a constituent of concern in groundwater, and therefore the benzene exceedances detected in the 1993 soil results at two locations may have naturally attenuated over time. However, these locations (1993 samples S-7 and S-17) have not been re-sampled for benzene in soil, resulting in a data gap. Although not directly attributed to the former fueling area, vertical and horizontal delineation of arsenic and PAHs in soil at concentrations above the RDCSRSs also remain data gaps.

In 1994, a steel, 1,000-gallon UST that contained No. 2 fuel oil (Registration ID No. 90010-7, designated as UST 108A) located adjacent to former Building 108 was also removed. NJDEP approved a No Further Action (NFA) designation for UST 108A on 13 October 2015 (Attachment A). There are no data gaps or additional environmental investigation activities required for UST 108A.

Proposed Sampling at FTMM-57

A summary of the proposed soil sampling and analysis is presented in Table 1. Two soil borings are proposed for FTMM-57 to determine the current concentrations of benzene in soil. These borings (FTMM-57-SB-01 and -02; see Figure 2) will be drilled at the sample S-7 and S-17 locations where benzene was found during the 1993 sampling. Proposed borings FTMM-57-SB-01 and FTMM 57-SB-02 will be advanced to approximately 10 feet below ground surface (ft bgs), which is approximately 7 ft below the water table. Three soil samples will be collected from each boring:

- One sample from the most contaminated interval encountered based on field evidence (visual, olfactory, and photoionization detector [PID] screening); and
- One sample from above and another sample from below the most contaminated interval.
- If there is no field indication of contamination, then soil samples will be collected from 2.5 to 3.0 ft bgs, 6.0 to 6.5 ft bgs, and 9.5 to 10.0 ft bgs.

Soil samples will be analyzed in accordance with the requirements for kerosene in Table 2-1 of the New Jersey Administrative Code (NJAC) 7:26E *Technical Requirements for Site Remediation*. Each soil sample will be analyzed for Volatile Organic Compounds (VOCs) plus tentatively identified compounds (TICs) and for two semivolatile organic compounds (SVOCs): naphthalene and 2-methylnaphthalene.

Soil samples from borings FTMM-57-SB-01 and FTMM 57-SB-02 will also be analyzed for PAHs to supplement the vertical delineation of soil PAHs within this area. For horizontal delineation, soil sampling results for PAHs will be collected from the surrounding Parcel 83 area as proposed under a separate work plan (Reference 4). PAH analyses will also be performed for soil samples from nearby boring 482-SB-02 (Figure 2) in addition to the analyses proposed under a separate work plan (Reference 5). Method 8270D PAH analytes will include the following 16 PAHs:

- Acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

Soil samples from borings FTMM-57-SB-01 and FTMM 57-SB-02 will also be analyzed for arsenic to supplement the vertical delineation of soil arsenic within this area. For horizontal delineation, arsenic analyses will also be performed for soil samples from nearby borings 482-SB-02, PAR-83-SB-33, PAR-83-SB-34, PAR-83-SB-35, PAR-83-SB-49 and PAR-83-SB-50 (Figure 2) within the surrounding Parcel 83 area in addition to the analyses proposed under separate work plans (References 4 and 5).

Thank you for reviewing this work plan. We look forward to your comments and approval prior to implementing this plan (currently scheduled to begin on 2 October 2017). Our technical Point of Contact is Kent Friesen who you may contact directly at (732) 383-7201; kent.friesen@parsons.com. I can be reached at (732) 380-7064; william.r.colvin18.civ@mail.mil.

Sincerely,



William R. Colvin, PMP, CHMM, PG
BRAC Environmental Coordinator

Attachments:

- Figure 1 - FTMM-57 Layout and Proposed Sample Locations
- Table 1 – Post-Excavation Soil Sample Exceedances for UST No. 64.
- Table 2 - Sampling Summary for FTMM-57
- Attachment A - Correspondence
- Attachment B – Excerpts of Previous Reports
 - 1. Weston, 1994 *UST Closure and Site Investigation Report*
 - 2. Versar, 2004 *Remedial Investigation Report*
 - 3. Unpublished 2010 Statement of Work and Analytical Data

cc: Ashish Joshi (e-mail and 2 hard copies)
William Colvin, BEC (e-mail and 1 hard copy)
Joseph Pearson, Calibre (e-mail)
James Moore, USACE (e-mail)
Jim Kelly, USACE (e-mail)
Cris Grill, Parsons (e-mail)

References:

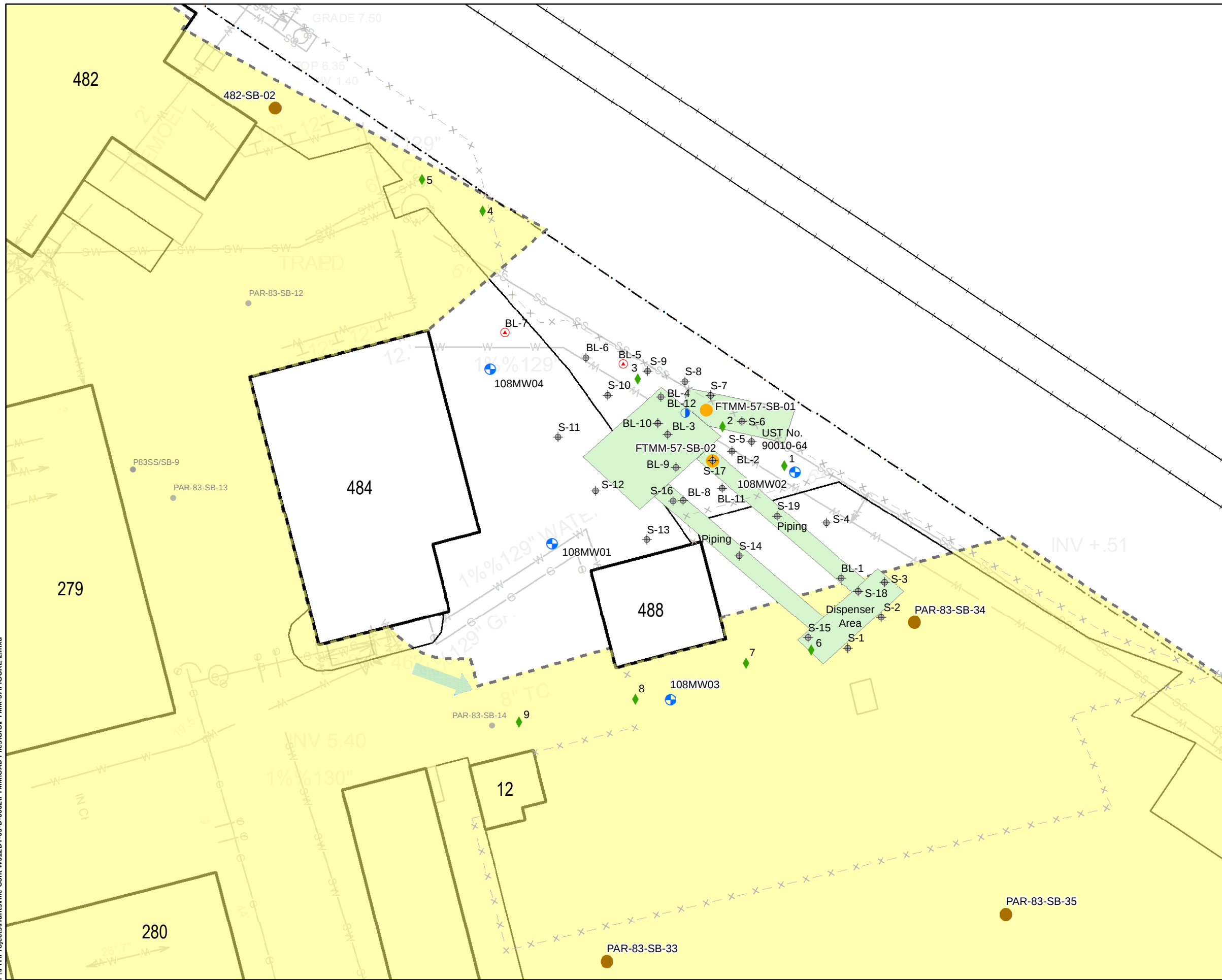
1. Roy F. Weston, Inc. 1994. *Underground Storage Tank Closure and Site Investigation Report, Building 108, NJDEPE Facility UST No. 0090010, TMS No. 60, 61, 62, 63 and 64.* May 31.
2. Versar Inc. 2004. *Final Remedial Investigation Report, Site 108, U.S. Army Garrison Fort Monmouth, Fort Monmouth, New Jersey.* August 13.
3. Parsons. 2015. *Final Annual (Fourth Quarter) 2015 Groundwater Sampling Report, Fort Monmouth, Oceanport, Monmouth County, New Jersey.* September.
4. Department of the Army. 2017. *Letter Work Plan Addendum for Parcels 83, 103, 104, and 108, Fort Monmouth, New Jersey.* August 25.
5. Department of the Army. 2017. *Letter Work Plan Addendum for UST 482 Area, Fort Monmouth, New Jersey.* August 4.

FIGURES

Figure 1 – FTMM-57 Layout and Proposed Sampling Locations

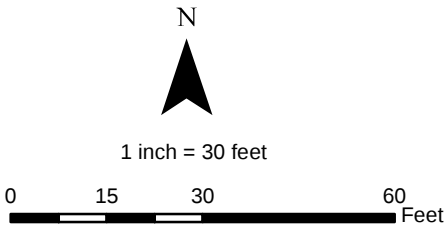
Figure 2 – FTMM-57 Proposed Sampling Locations

P:\PTT\Projects\Huntsville Cont W912.DY-09.D-0062\FTMM\CAD Files\GIS\FTMM-57\FIGURE 2.mxd



- LEGEND:**
- Proposed Sampling Location (Kerosene, PAHs, Arsenic)
 - Proposed Sampling Location (PAHs, Arsenic)
 - Soil Sample (1993 and 2010)
 - Soil and Groundwater Sample (2010)
 - Groundwater Sample (2010)
 - Geoprobe Location (2001)
 - Site Investigation Sample (2007, 2016)
 - Shallow Monitoring Well
 - Fenceline
 - Railroad Tracks
 - Surface Water Feature
 - W Water Line
 - S Sanitary Sewer Line
 - SW Storm Sewer Line
 - G Gas Line
 - Installation Boundary
 - Parcel 83 Boundary
 - Former UST Piping and Dispenser
 - Generalized Groundwater Flow Direction

NOTE:
See Parcel 83 Work Plan (Reference 4) for PAR-83-SB-49 and PAR-83-SB-50 sample locations.



Source: FTMM Supplied CAD; Shaw Environmental 2008.	
PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey
FTMM-57 PROPOSED SAMPLING LOCATIONS	
CREATED BY: RR	REVIEWED BY: KF
DATE: SEP. 2017	FIGURE NUMBER: FIGURE 2
PROJECT NUMBER: 748810-06018	FILE: FIGURE 2.mxd

TABLES

Table 1 – Post-Excavation Soil Sample Exceedances for UST No. 64

Table 2 – Sampling Summary for the FTMM-57 Work Plan

Table 1
Post-Excavation Soil Sample Exceedances for UST No. 64

Compound	RDCSRS (mg/kg)	S-3	S-4	S-5	S-6	S-7	S-8	S-11	S-14	S-16	S-17	S-19
Benzo(a)anthracene	0.6	2.3	0.35	0.78	1.2	ND	0.5J	0.44	1.0	0.42J	0.19J	2.3
Benzo(b)fluoranthene	0.6	1.8	0.22J	0.10J	0.3	ND	0.63J	0.65	ND	ND	0.19J	2.3
Dibenzo(a,h)anthracene	0.2	0.35J	0.074J	0.10J	0.3	ND	ND	0.13J	0.25J	ND	ND	ND
Benzo(a)pyrene	0.2	1.8	0.34J	0.57	1.1	ND	ND	0.4	0.87	0.27J	1.3	2.1
Indeno(1,2,3-cd)pyrene	0.6	1.1	0.19J	0.28J	0.68	ND	ND	0.26J	0.49	ND	0.21J	ND
Benzene	2	ND	ND	1.0	ND	4.0	ND	ND	ND	0.76J	2.5	ND

RDCSRS = 7 May 2012 Residential Direct Contact Soil Remediation Standards; exceedances of the RDCSRS shown in **Bold**.

J = Estimated Concentration

mg/kg = milligrams per kilogram

**TABLE 2
SAMPLING SUMMARY FOR FTMM-57
FORT MONMOUTH, NEW JERSEY**

Site	Location	Sample Interval	Field Meter Readings ^{a/}	VOCs + TICs by Method 8260 C ^{b/}	Naphthalene + 2-methylnaphthalene by Method 8270D ^{c/}	PAHs by Method 8270D ^{d/}	Arsenic by Method 6010C	Rationale
Soil								
FTMM-57-SB-01	See Figure 2: soil boring near former location of sample S-7	Three sample depth intervals from above, within, and below contamination based on field observations or PID; or from 2.5 to 3, 6 to 6.5 and 9.5 to 10 ft bgs if no contamination observed.	1 boring	3	3	3	3	Purpose: test soils from previous (1993) S-7 sample location for presence of benzene; analyze for kerosene constituents (VOCs, naphthalene, and 2-methylnaphthalene). Also, provide vertical delineation of PAHs and arsenic in soils.
FTMM-57-SB-02	See Figure 2: soil boring at former location of sample S-17	Three sample depth intervals from above, within, and below contamination based on field observations or PID; or from 2.5 to 3, 6 to 6.5 and 9.5 to 10 ft bgs if no contamination observed.	1 boring	3	3	3	3	Purpose: test soils from previous (1993) S-17 sample location for presence of benzene; analyze for kerosene constituents (VOCs, naphthalene, and 2-methylnaphthalene). Also, provide vertical delineation of PAHs and arsenic in soils.
Additional analyses for soil borings from other Work Plans to delineate PAHs and arsenic in FTMM-57 soil:								
482-SB-02	See Figure 2: UST 482 area soil boring from 4 August 2017 Work Plan	Three sample depth intervals; see 4 August 2017 Work Plan	1 boring	0	0	3	3	Analyze all three soil depth intervals for PAHs to delineate sample BL-7 exceedance at 3 to 3.5 ft bgs, and for arsenic to delineate Boring 5 exceedances from 0 to 2.5 ft bgs.
PAR-83-SB-33	See Figure 2: Parcel 83 soil boring from 25 August 2017 Work Plan	Three sample depth intervals; see 25 August 2017 Work Plan	1 boring	0	0	0	3	Analyze all three soil depth intervals for arsenic to delineate Boring 8 exceedances from 0 to 2.5 ft bgs. PAH analyses including contingency samples was already specified in the Parcel 83 Work Plan.
PAR-83-SB-34	See Figure 2: Parcel 83 soil boring from 25 August 2017 Work Plan	Three sample depth intervals; see 25 August 2017 Work Plan	1 boring	0	0	2	3	Primary PAH analysis for the 0 to 0.5 ft bgs interval was already specified in the Parcel 83 Work Plan. Analyze 2 lower soil depth intervals for PAHs to delineate sample BL-1 exceedance at 3.5 to 4 ft bgs, and all 3 intervals for arsenic to delineate Boring 6 exceedances from 2 to 2.5 ft bgs.
PAR-83-SB-35	See Figure 2: Parcel 83 soil boring from 25 August 2017 Work Plan	Three sample depth intervals; see 25 August 2017 Work Plan	1 boring	0	0	0	3	CONTINGENCY ANALYSIS: Soil will be collected from all three soil depth intervals for arsenic analysis, but held by the laboratory pending the analysis of boring PAR-83-SB-34 arsenic results.
PAR-83-SB-49	See Figure 2: Parcel 103 soil boring from 25 August 2017 Work Plan	Three sample depth intervals; see 25 August 2017 Work Plan	1 boring	0	0	0	3	CONTINGENCY ANALYSIS: Soil will be collected from all three soil depth intervals for arsenic analysis, but held by the laboratory pending the analysis of boring PAR-83-SB-33 arsenic results.
PAR-83-SB-50	See Figure 2: Parcel 83 soil boring from 25 August 2017 Work Plan	Three sample depth intervals; see 25 August 2017 Work Plan	1 boring	0	0	0	3	CONTINGENCY ANALYSIS: Soil will be collected from all three soil depth intervals for arsenic analysis, but held by the laboratory pending the analysis of boring PAR-83-SB-35 arsenic results.
QA/QC samples (see SAP for additional details) ^{e/}								
Field Duplicates (5% Sampling Frequency per media)			NA	1	0	1	2	
Matrix Spike (5% Sampling Frequency per media)			NA	1	0	1	2	
Matrix Spike Duplicate (5% Sampling Frequency per media)			NA	1	0	1	2	
Trip Blank (1 per cooler of VOCs per media)			NA	1	0	0	0	
QA Split (5% per media)			NA	1	0	1	2	
Equipment Blank (5% Sampling Frequency per media)			NA	1	0	1	2	
TOTAL			NA	12	6	16	34	

Notes:

NA = not applicable.

^{a/} Field meter readings include in soil samples: photoionization detector (PID) readings along entire soil column.

^{b/} VOCs = volatile organic compounds; TICs = tentatively identified compounds.

^{c/} Naphthalene is also included in Method 8270D PAHs, so laboratory can provide Method 8270D PAHs plus 2-methylnaphthalene for soil borings FTMM-57-SB-01 and FTMM-57-SB-02 to obtain these analytes.

^{d/} PAHs = polynuclear aromatic hydrocarbons.

Attachment A
Correspondence



State of New Jersey

CHRIS CHRISTIE
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
401 East State Street
P.O. Box 420/Mail Code 401-05F
Trenton, NJ 08625-0028
Phone #: 609-633-1455
Fax #: 609-633-1439

BOB MARTIN
Commissioner

KIM GUADAGNO
Lt. Governor

November 14, 2016

William R. Colvin
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Re: *Annual (Fourth Quarter) 2015 Groundwater Sampling Report dated September 2016*
Fort Monmouth
Oceanport, Monmouth County
PI G000000032

Dear Mr. Colvin:

The New Jersey Department of Environmental Protection (NJDEP) has completed review of the referenced report, received September 29, 2016, prepared by Parsons to support the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth. An annual ground water sampling event was conducted at twelve (12) FTMM sites between September 30, 2015 and December 15, 2015. Sampling methodologies used included low-flow purging and sampling (LFPS) and passive diffusion bag samplers (PDBS). Comments on each FTMM site are as follows:

FTMM-02 Landfill

Historic sampling results at FTMM-02 have exhibited exceedances of the Ground Water Quality Standard (GWQS) for VOCs. Results from the 2015 annual sampling event exceeded the GWQS for MTBE and TBA in M2MW22. The report recommends biennial sampling of M2MW03, M2MW10 and M2MW22 as part of the biennial sampling requirements for the existing CEA for this site. The exiting CEA will also be revised to include TBA and MTBE. The recommendation is acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, confirmatory sampling using low-flow methodology is required.

FTMM-05 Landfill

Historic sampling results at FTMM-05 have exhibited exceedances of the GWQS for PCE, TCE and vinyl chloride. Results from the 2015 annual sampling event exceeded GWQS for PCE in wells M5MW11, M5MW16, M5MW20 and M5MW23. The report recommends the

establishment of a CEA, with biennial ground water sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23 for VOCs as the “preferred remedy”. Although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-08 Landfill

Historic sampling results at FTMM-08 exhibited exceedances of the GWQS for pesticides, benzene, PCE and lead. Results from the 2015 annual sampling event exceeded the GWQS for PCE, lead and pesticides. The 2016 RIR for FTMM-08, however, indicated manganese is also a contaminant of concern which requires monitoring. The submittal recommends the establishment of a CEA, with biennial ground water sampling for the contaminants of concern from selected wells. As above, although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-18 Landfill

Historic sampling results at FTMM-18 exhibited exceedances of the GWQS for benzene and 1,2-DCA. Results from the annual 2015 sampling event exceed the GWQS for benzene in well 296MW06. In the October 2015 RIR for FTMM-18, it was indicated that manganese is also a contaminant of concern, which requires monitoring. The report recommends the establishment of a CEA as the preferred remedy, with biennial ground water sampling for the contaminants of concern from selected wells. As above, although an essential component of certain ground water remedies, a CEA is an institutional control rather than a remedy. A remedial action proposal, e.g. Monitored Natural Attenuation (MNA), in accordance with the applicable requirements of N.J.A.C. 7:26E-5.1 and guidance documents, must be submitted to address the ground water contaminants. At such time as the formal proposal for a CEA is to be submitted, the proposal must be accompanied by a CEA/WRA Fact Sheet Form; the form and form instructions may be obtained from the Site Remediation website at www.nj.gov/dep/srp/srra/forms/. Submittal of a draft CEA/WRA Fact Sheet Form is recommended to allow for DEP confirmation of the CEA components and boundaries.

FTMM-22 - Former Wastewater Treatment Lime Pit

Historic sampling results at FTMM-22 exhibited exceedances of the GWQS for TCE and vinyl chloride. Results from the annual 2015 sampling event also exceeded the GWQS for TCE and vinyl chloride. Long-term ground water monitoring has been suspended while the remedial investigation/feasibility study (RI/FS) is being conducted. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

FTMM-53 - Former Gas Station at Building 699

Historic sampling results at FTMM-53 exhibited exceedances of the GWQS for benzene, PCE, TCE, TBA, VOC TICs and lead. Results from the 2015 annual sampling event exceeded the GWQS for benzene, PCE, 1,2,4-trimethylbenzene, and VOC TICs. Long-term ground water monitoring has been suspended while the RI/FS is being conducted. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

FTMM-56 – Building 80 Petroleum Release

Historic sampling results at FTMM-56 exhibited exceedances of the GWQS for pesticides and metals. Recently, one additional round of sampling from two wells was required; results from the 2015 annual sampling event found a single exceedance of the GWQS, of arsenic, however, the arsenic concentration is determined to be representative of background conditions, and no further action for ground water is necessary.

FTMM-57 - Building 108 UST Gasoline Release

Historic sampling results at FTMM-57 exhibited an exceedance of the GWQS for lead. Results from the 2015 annual sampling event were below the GWQS for lead; no further action for ground water is acceptable.

FTMM-58 - Building 2567 UST Gasoline

Historic sampling results at FTMM-58 exhibited exceedances of the GWQS for TBA. Results from the 2015 annual sampling event continue to exceed the GWQS for TBA. The submittal recommends continued sampling of well 2567MW01 and the addition of downgradient well 2567MW05 for TBA. One additional round of sampling is recommended for monitoring of 2567MW03 for TBA to confirm compliance for same. The recommendations are acceptable.

Evaluations regarding potential benzene exceedances relative to FTMM-58 continue under separate investigative efforts.

FTMM-64 - Building 812 UST Gasoline

Historic sampling results at FTMM-64 exhibited exceedances of the GWQS for benzene, vinyl chloride and metals. Although results from the 2015 annual sampling event were below the GWQS for contaminants of concern, due to previous analytical results, the submittal recommends continued annual sampling of well 812MWS04 for VOCs. The recommendation is acceptable. If a decision is made to terminate ground water sampling at FTMM-64, confirmatory sampling using the low-flow methodology will be required.

FTMM-66 - Building 886 Former AST

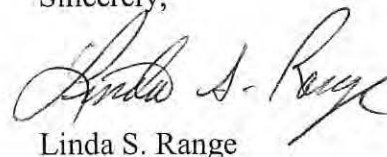
Historic sampling results from wells at FTMM-66 exhibited exceedances of the GWQS for SVOC TICs; results from the 2015 annual sampling event did not exceed the GWQS for SVOC TICs. The submittal recommends the ground water sampling at FTMM-66 be discontinued. The recommendation is acceptable; no further action for ground water is necessary.

FTMM-68 - Building 700 Former Dry Cleaners

Historic sampling results have shown exceedances of the GWQS for PCE, TCE, cis-1,2-DCE and vinyl chloride in ground water. Results from the 2015 annual sampling event confirmed these chlorinated VOCs continue to exceed GSQS in ground water. Long-term ground water monitoring has been suspended until such time as the RI/FS is completed. Upon completion of the RI/FS, a revised monitoring program will be proposed. The recommendation is acceptable.

Please contact this office if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Linda S. Range".

Linda S. Range

C: James Moore, USACE
Cris Grill, Parsons
Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Daryl Clark, BGWPA



State of New Jersey

CHRIS CHRISTIE
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
401 East State Street
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BOB MARTIN
Commissioner

KIM GUADAGNO
Lt. Governor

October 13, 2015

John Occhipinti
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Re: *No Further Action Request*
Site Investigation Report Addendum for the ECP Parcel 83 Underground Storage Tanks
Fort Monmouth
Oceanport, Monmouth County
PI G000000032

Dear Mr. Occhipinti:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, received August 4, 2015, prepared by Department of the Army Office of Assistant Chief of Staff for Installation Management to provide documentation of the location and status of all USTs identified within the parcel. The NJDEP comments regarding various constituents unrelated to the USTs previously noted in parcel soils are not addressed in this submittal.

Page 2 of 4 of the submittal indicates certain USTs specifically mentioned in previous NJDEP comments are not included in this submittal as there are no USTs associated with the particular buildings, specifically Buildings 66, 281 or 479. In reviewing this submittal, the UST referenced as near Building 281 appears to have been addressed via remedial activities at UST 108-7; see below for comment regarding same. USTs at (former) Buildings 66 and 479 (and 478) are shown in the 1956 Fuel Storage map, Appendix O, of the '07 ECP, as well as indicated as "high potential UHOTS" in Figure 2 of the *July 2014 UHOT Investigation Report*. Unless all tanks, former and/or current, have been evaluated in accordance with the applicable regulations and guidance documents, the NJDEP cannot comment as to the potential absence or presence of a petroleum discharge associated with those tanks.

As indicated in the submittal, numerous underground storage tanks (USTs) have previously received a designation of No Further Action (NFA) required. Based upon a review of the referenced submittal, it is also agreed NFA is necessary for the following USTs:

- UST 49-76 & UST-49-77; #01-05-24-1004-1; each 5000 g gasoline (Attachment E)
- UST 63B aka UST 63-2; 1000 g #2 fuel (Attachment F)
- UST 108A aka 108-7; 1000 g #2 fuel (Attachment I)
- UST 116B aka UST 116-9; #97-04-10-1409-35; 1000 g #2 fuel; NFAed 10/23/00; ECP Parcel 85; additional sampling performed in May 2010 indicates NFA remains appropriate (Attachment J)
- UST 117C aka UST 117-72; #84-04-28-1944-21; 1000 g #2 fuel; ECP Parcel 86 (Attachment K)
- USTs 161 – Parcel 87 (Attachment L)
 - UST 161-68; 550 g waste oil
 - UST 161-14; 1000 g #2 fuel; #93-03-12-2158-30
- UST 167-18; 1000 g #2 diesel (Attachment M)
- USTs 273 aka 009001-65,66 & 67 (Attachment N)
 - UST 273-65; 6000 g diesel
 - UST 273-66; 10,000 gasoline
 - UST 273-67; 10,000 g gasoline
 - Note – the NFA is applicable to the USTs only, not the dispenser/s, which were reported as used with the AST fuel storage system which replaced USTs 273 until subsequent AST closure in 2011
- UST 483-55; #97-03-19-1359-16; previously NFAed 10/23/00; additional sampling performed in May 2010 indicates NFA remains appropriate (Attachment P)

UST 80 aka 80-6 aka FTMM-56 - Parcel 84 (Attachment G)

UST 80-6 was a #2 fuel tank which was granted an NFA by the Department on August 29, 2000. Ground water contamination at FTMM-56 unrelated to #2 fuel was monitored on a quarterly basis for many years. Submittal of analytical results from the additional round of ground water sampling as per the DEP's July 3, 2014 comment letter are pending.

USTs 108-60 through 64 aka FTMM-57 – Parcel 90

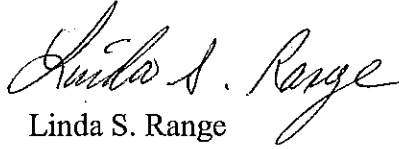
Attachment H references five USTs which were removed in April of 1993, and lists just over a page with descriptive bullets of documents reported to include remedial activities relative to these USTs, concluding that reported results support site characterization work is complete. The submittal, however, includes no results; comments regarding adequacy of characterization and recommendations as to additional action are therefore not possible at this time.

UST 482-54 – Parcel 93

As regarding UST 482-54 (#94-08-11-1345-43), which was NFAed in January of 2003, Attachment O appears to indicate TPH contaminated soils remain at levels of 14,100 ppm and 29,400 ppm. As indicated in the email of October 9, 2015, clarification is requested, as a designation of NFA is not appropriate for contamination at this level.

Please contact this office if you have any questions.

Sincerely,

A handwritten signature in cursive script, reading "Linda S. Range".

Linda S. Range

C: Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
James Moore, USACE
Frank Barricelli, RAB



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. Box 413
TRENTON, NJ 08625-0413

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

June 24, 2008

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Remedial Investigation Report and CEA Information
Site 108 – Main Post
Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) has completed its review of the report titled "Remedial Investigation Report, Site 108", dated August 13, 2004, by Versar Inc. We have also reviewed the Classification Exception Area (CEA) Information for Site 108 that is included in the report titled "Classification Exception Area Information for Various Sites", dated July 12, 2004 by Versar. Our comments are attached.

You or your staff may contact me at 609-633-0766 with any questions on the enclosed comments, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quint, P.E., CHMM, Site Manager
Bureau of Investigation, Design and Construction

Attachment

NJDEP COMMENTS ON
RI REPORT and CEA INFORMATION for SITE 108
FORT MONMOUTH, NJ

RI Report

1. Arsenic in Soil. The Executive Summary and Section 5.3 state that arsenic was detected in 8 of 9 soil boring locations at concentrations greater than the RDCSCC and that the arsenic is likely attributable to the native soil characteristics or a non-point source distributed throughout the subsurface soils at Site 108. Historic fill should be cited as a likely reason for the arsenic found in soil samples. However, the arsenic levels do constitute a direct contact threat, so at a minimum the Army must propose institutional or engineering controls, and a deed notice. Paving would constitute an acceptable engineering control, but a deed notice would still be required.
2. Figures – General. All detailed site figures must show the former locations of the USTs, piping, and dispenser area. At least one Figure must show those items and the location of all soil borings, post-excavation soil samples, and monitoring wells.
3. Ground Water - General.
 - a) The existing monitoring wells cannot adequately monitor potential ground water impacts at Site 108, and thus the remedial investigation of ground water isn't complete. Ground water samples must be collected from beneath the former UST #64, at the locations of borings S-5 and S-7 (where the IGWSCC for benzene was exceeded), and within 10 feet hydraulically downgradient of the former UST piping and dispenser area. NJDEP recommends the use of temporary well points initially. Ground water samples should be analyzed for VO+10 and BN+15.
 - b) Based on comment a) above, NJDEP cannot concur with the conclusion that arsenic is the only ground water contaminant of concern at Site 108.
4. Section 3.2 (Sample Collection Activities): The report states that sampling and decontamination procedures were conducted in accordance with the December 1997 Fort Monmouth Standard Sampling Operating Procedure. All future sampling procedures and equipment decontamination must be conducted pursuant to the most recent version of the NJDEP Field Sampling Procedures Manual per the requirements of N.J.A.C. 7:26E-4.4(d).

NJDEP COMMENTS ON
RI REPORT and CEA INFORMATION for SITE 108
FORT MONMOUTH, NJ (continued)

5. Section 7.0. This section recommends no further action (NFA) for arsenic in ground water. The Department acknowledges the results of the fate and transport modeling for arsenic. However, an NFA determination is not acceptable. The Army needs to request approval for a natural ground water remediation remedy, together with the proposed Classification Exception Area (CEA), as detailed in 7:26E-6.3(d) and (e).
6. Ground Water Contour Maps: For future reference, the Contour Map Reporting Form found in Appendix G of the Technical Requirements must be completed and submitted for each ground water contour map included in reports.

CEA Information Report

1. Since the NJDEP has determined that a RI of ground water hasn't been completed, the CEA proposal can't be evaluated now. A revised CEA proposal should be submitted after additional RI work is completed and submitted to NJDEP.
2. The current and projected use of ground water in the proposed CEA must be addressed in the revised CEA proposal.

Guenther, Douglas C MONMOUTH USAG

From: Greg Zalaskus [Greg.Zalaskus@dep.state.nj.us]
Sent: Friday, November 12, 2004 2:03 PM
To: Douglas.Guenther@mail1.monmouth.army.mil
Cc: John Prendergast; Ken Petrone; Joseph.Fallon@mail1.monmouth.army.mil
Subject: Re: GROUNDWATER ANALYSES REDUCTION

Doug: The Department has completed a review of your November 10, 04 letter request to reduce the groundwater sampling analysis for the seven site listed in the November 10, 04 letter. The Department hereby approves your request as submitted. Additionally, the updated "Restoration Program Site Report Status Table" you e-mailed is most appreciated. If you have any questions please contact me.

Sincerely, greg

Gregory Zalaskus, Case Manager
NJDEP/DRMR/BCM
Greg.Zalaskus@dep.state.nj.us
609-984-2065 (direct)
609-633-1439 (fax)
609-633-1455 (main)

>>> "Guenther, Douglas C MONMOUTH USAG"
<Douglas.Guenther@mail1.monmouth.army.mil> 11/10/04 01:28PM >>> Greg,

As discussed, attached is the letter identifying analyses reduction at restoration sites and a summary of submitted site reports pending NJDEP review. A hard copy is on the way. Any questions let me know.

Sincerely,

Douglas C. Guenther
Environmental Protection Specialist
U.S. Army, Directorate of Public Works
Attn: SELFM-PW-EV, Bldg. 173
Fort Monmouth, NJ 07703
Phone: 732-532-0986; Fax: 732-532-6263; DSN: 992-0986
E-mail: Douglas.Guenther@Mail1.Monmouth.Army.mil



DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5101



REPLY TO
ATTENTION OF

Directorate of Public Works

November 10, 2004

ATTN: Mr. Greg Zalaskus
State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street, 5th Fl., West Wing
PO Box 028
Trenton, New Jersey 08625-0028

RE: **REDUCTION OF GROUNDWATER SAMPLING ANALYSES-**
MAIN POST&CHARLES WOODS
Restoration Sites throughout Fort Monmouth, New Jersey

Dear Mr. Zalaskus:

As discussed during our telephone conversation on November 9, 2004, this letter summarizes groundwater sampling revisions at seven active restoration sites on Fort Monmouth property. The Directorate of Public Works (DPW) and TECOM-Vinnell Services (TVS) personnel currently conduct quarterly groundwater monitoring at each of these sites.

The DPW has submitted Remedial Investigation Reports (RIRs), prepared by VERSAR, Inc., requesting no further action (NFA) at four sites including Landfill M-12 (FTMM-12), Landfill M-18/290/296 (FTMM-18/55/54), Landfill M-3 (FTMM-03), and Site 108 (FTMM-57). Two RIRs requesting NFA are pending submittal including Site 80/166 (FTMM-56) and Landfill CW3A (FTMM-25), and one Remedial Action Report for Site 886 (FTMM-66) recommending natural attenuation is also pending submittal.

Initial groundwater sampling at each site consisted of a comprehensive analytical program including volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); pesticides/polychlorinated biphenyls (PCBs); and TAL metals. Analytical results were then examined to establish potential contaminants of concern (COCs). Each site report presents the identified potential COCs based on the comparison of groundwater analytical results to the higher of the Practical Quantitation Limits (PQLs) and the NJDEP Groundwater Quality Criteria (GWQC) for Class II-A aquifers (NJAC 7:9-6, Table 1). Further evaluation of the potential COCs was then performed to assess contaminant occurrence/magnitude, transport (modeling), and risk to receptors; the environment and human health to determine if remedial action was warranted.

Based on report conclusions, Fort Monmouth DPW proposes the following revisions to the current groundwater sampling program at these sites to maintain a compliant and cost effective program. As discussed, proposed changes will be implemented immediately unless otherwise directed by the NJDEP.

The following table summarizes the revised sampling program at these sites:

Submitted No Further Action Requests

Site	Was Analyzed:	Revised Analysis:	Potential Contaminants of Concern
Landfill M-12 (FTMM-12)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic and lead
Landfill M-18/290/296 (FTMM-18/55/54)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and TAL Metals.	Benzene, arsenic, cadmium, chromium and lead
Landfill M-3 (FTMM-03)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs.	Chlorobenzene
Site 108 (FTMM-57)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic

No Further Action Requests - Submittal Pending

Site 80/166 (FTMM-56)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for Pesticides and TAL Metals.	a-chlordane, g-chlordane, arsenic and lead
Landfill CW3A (FTMM-25)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Non-Native Metals

Natural Attenuation Request - Submittal Pending

Site 886 (FTMM-66)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and SVOCs	Benzene and 2-butanone
-----------------------	--	------------------------------	------------------------

Groundwater sampling and monitoring will continue at these sites as indicated above, in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq. and *Fort Monmouth Standard Sampling Operating Procedure* (1997), pending NJDEP review of these site documents. I have attached an updated summary table of site reports previously submitted to NJDEP which are pending review.

If you should have any questions or comments, please contact me at (732) 532-0986.

Sincerely,



Douglas C. Guenther
Environmental Protection Specialist
Directorate of Public Works

Attachment: Restoration Program Report Status Table
cc: File

Attachment B
Excerpts of Previous Reports

- B.1 Weston, 1994 *UST Closure and Site Investigation Report*
- B.2 Versar, 2004 *Remedial Investigation Report*
- B.3 Unpublished 2010 Statement of Work and Analytical Data



**UNDERGROUND STORAGE TANK
CLOSURE AND SITE
INVESTIGATION REPORT
BUILDING 108
NJDEPE FACILITY UST NO. 0090010
TMS NO. 60, 61, 62, 63 AND 64
TMS NO. C-91-2844
SPILL CASE NO. 93-1-12-1939-29**

31 May 1994

W.O. No.: 03886-088-001

Prepared For:

**UNITED STATES ARMY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NEW JERSEY 07703**

Prepared by:

**ROY F. WESTON, INC.
Raritan Plaza I - 4th Floor
Edison, New Jersey 08837**

Excerpts

TABLE 3-5

**SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Sample ID No.		S-1	S-2	S-3	S-4	S-5	S-6	NIDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.1	1191.2	1191.3	1191.4	1191.5	1191.6	
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units							
TPHC	mg/kg	3.82	1.93	10.8	27.5	2970	333	NC*
Base Neutral Compounds								
Acenaphthene	mg/kg	.062J	ND	1.1	.095J	.59	.089J	100
Pyrene	mg/kg	.22J	ND	2.4	.45	1.1	1.1	100
Bis(2-ethylhexyl)phthalate	mg/kg	1.1J	.37J	.28J	.16J	4.3	.11J	100
Dibenzofuran	mg/kg	.043J	ND	.81	.044J	.40	.082J	NC
Anthracene	mg/kg	.083J	ND	1.7	.22J	.88	.34J	100
Fluoranthene	mg/kg	0.36J	ND	4.9	.66	2.6	2.7	100
Fluorene	mg/kg	.069J	ND	1.1	.09J	.65	.12J	100
Phenanthrene	mg/kg	.3J	ND	4.4	.66J	3.2	.87	NC
Naphthalene	mg/kg	.24J	ND	.41	.041J	6.0	.082J	100
2-Methylnaphthalene	mg/kg	.13J	ND	.21J	.054J	4.7	.074J	NC
Chrysene	mg/kg	.16J	ND	2.2	.36	.77	1.2	500
Benzo(a)anthracene	mg/kg	.14J	ND	2.3	.35	.78	1.2	500

*Direct
Contact,*

ppm

3400

1700

49

NC

10000

2300

2300

NC

230

NC

9

0.9

TABLE 3-5 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY

Sample ID No.		S-1	S-2	S-3	S-4	S-5	S-6	NJDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.1	1191.2	1191.3	1191.4	1191.5	1191.6	
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units							
Base Neutral Compounds								
Benzo(b)fluoranthene	mg/kg	.2J	ND	1.8	.22J	.10J	.95	50
Dibenzo(a,h)anthracene	mg/kg	ND	ND	.35J	.074J	.10J	.3	100
Benzo(a)pyrene	mg/kg	.13J	.25J	1.8	.34J	.57	1.1	100
Indeno(1,2,3-cd)pyrene	mg/kg	.09J	ND	1.1	.19J	.28J	.68	500
Benzo(g,h,i)perylene	mg/kg	.082J	ND	1.0	.21J	.30J	.67	NC

Abbreviations:

- NC* - No cleanup criterion has been proposed by NJDEPE, however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
 NC: - No groundwater cleanup criterion has been proposed for this analyte by NJDEPE.
 ND: - Not detected.
 TPHC: - Total Petroleum Hydrocarbons.
 PE: - Post Excavation.
 mg/kg: - Milligrams per Kilograms.

Data Qualifier:

- J: - Indicates an estimated value.

*Direct
Contact
P26
ppm*

*0.9
0.66
0.66
0.90
---*

TABLE 3-5 (CONTINUED)

**SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Sample ID No.		S-7	S-8	S-9	S-10	S-11	S-13	S-14	NIDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.7	1191.8	1191.9	1191.10	1191.11	1191.13	1191.14	
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units								
TPHC	mg/kg	230	26	128	35.9	50.8	158	380	NC*
Base Neutral Compounds									
Acenaphthene	mg/kg	ND	ND	ND	ND	ND	ND	.4	100
Pyrene	mg/kg	ND	.074J	.22J	.13J	.46	.14J	1.5	100
Bis(2-ethylhexyl)phthalate	mg/kg	.15J	4.6	.23J	.58	.67	.069J	.071J	100
Dibenzofuran	mg/kg	ND	ND	ND	ND	ND	ND	.32J	NC
Anthracene	mg/kg	ND	ND	.074J	.041J	.096J	ND	.78	100
Fluoranthene	mg/kg	ND	.14J	.44	.23J	.86	.023J	4.3	100
Fluorene	mg/kg	ND	ND	ND	ND	ND	ND	.49	100
Phenanthrene	mg/kg	ND	.085J	.39J	.11J	.38J	.1J	2.6	NC
Naphthalene	mg/kg	ND	ND	.042J	ND	ND	ND	.24J	100
2-Methylnaphthalene	mg/kg	.044J	ND	ND	ND	ND	ND	.37J	NC
Benzo(a)anthracene	mg/kg	ND	.05J	.17J	.12J	.44	.12J	1.0	500

NC

3400

1700

49

NC

10000

2300

2300

NC

230

NC

0.9

TABLE 3-5 (CONTINUED)

**SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Sample ID No.		S-7	S-8	S-9	S-10	S-11	S-13	S-14	NJDEPE Impact to Groundwater Soil Cleanup Criteria	
Lab ID No.		1191.7	1191.8	1191.9	1191.10	1191.11	1191.13	1191.14		
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Sample Type		PE	PE	PE	PE	PE	PE	PE		
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93		
Analytical Parameter	Units									
Base Neutral Compounds										
Chrysene	mg/kg	ND	.055J	.19J	.14J	.46	.14J	1.0	500	9
Benzo(b)fluoranthene	mg/kg	ND	.063J	ND	.11J	.65	.12J	ND	50	0.9
Dibenzo(a,h)anthracene	mg/kg	ND	ND	ND	ND	.13J	ND	.25J	100	0.66
Benzo(a)pyrene	mg/kg	ND	ND	.12J	.11J	.4	.12J	.87J	100	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	ND	ND	.092J	.089J	.26J	.079J	.49	500	0.9
Benzo(g,h,i)perylene	mg/kg	ND	ND	.11J	.093J	.28J	.087J	.53J	NC	NC

Abbreviations:

- NC* - No cleanup criterion has been proposed by NJDEPE, however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
 NC: - No groundwater cleanup criterion has been proposed for this analyte by NJDEPE.
 ND: - Not detected.
 TPHC: - Total Petroleum Hydrocarbons.
 PE: - Post Excavation.
 mg/kg: - Milligrams per Kilograms.

Data Qualifier:

- J: - Indicates an estimated value.

TABLE 3-5 (CONTINUED)

**SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Sample ID No.		S-15	S-16	S-17	S-18	S-19	NJDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.15	1191.16	1191.17	1191.18	1191.19	
Matrix		Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units						
TPHC	mg/kg	5.22	1100	340	ND	46.1	NC
Base Neutral Compounds							
Acenaphthene	mg/kg	ND	.5J	.16J	ND	.79	100
Pyrene	mg/kg	ND	.9J	.36J	.043J	3.4	100
Bis(2-ethylhexyl)phthalate	mg/kg	ND	24	1.3	ND	.079J	100
Dibenzofuran	mg/kg	ND	.26J	.078J	ND	.54	NC
Anthracene	mg/kg	ND	.69J	.23J	ND	1.7	100
Fluoranthene	mg/kg	ND	2.2	.97	.092J	12.0	100
Fluorene	mg/kg	ND	.58J	.16J	ND	1.0	100
Phenanthrene	mg/kg	ND	2.8	.89	ND	2.9	NC
Naphthalene	mg/kg	ND	4.8	.9	ND	.23J	100
2-Methylnaphthalene	mg/kg	ND	8.4	1.3	ND	.18J	NC
Benzo(a)anthracene	mg/kg	ND	.42J	.19J	ND	2.3	500

3400
~~4~~ 1700
 49
 NC
 10000
 2300
 2300
 NC
 230
 NC
 0.9

TABLE 3-5 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY

Sample ID No.		S-15	S-16	S-17	S-18	S-19	NJDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.15	1191.16	1191.17	1191.18	1191.19	
Matrix		Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units						
Base Neutral Compounds							
Chrysene	mg/kg	ND	.43J	.21	ND	2.4	500
Benzo(b)fluoranthene	mg/kg	ND	ND	.19J	ND	2.3	50
Dibenzo(a,h)anthracene	mg/kg	ND	ND	ND	ND	ND	100
Benzo(a)pyrene	mg/kg	ND	.27J	1.3	ND	2.1	100
Indeno(1,2,3-cd)pyrene	mg/kg	ND	ND	.21J	ND	ND	500
Benzo(g,h,i)perylene	mg/kg	ND	.14J	.079J	ND	ND	NC

*Direct
Contact*

9
0.9
0.66
0.66
0.9
NC

Abbreviations:

- NA: - Not analyzed.
- NC: - No cleanup criterion has been proposed by NJDEPE, however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
- NC: - No groundwater cleanup criterion has been proposed for this analyte by NJDEPE.
- ND: - Not detected.
- TPHC: - Total Petroleum Hydrocarbons.
- PE: - Post Excavation.
- mg/kg: - Milligrams per Kilograms.

Data Qualifier:

- J: - Indicates an estimated value.

TABLE 3-5 (CONTINUED)
SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY

Sample ID No.		S-1	S-2	S-3	S-4	S-5	NIDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.1	1191.2	1191.3	1191.4	1191.5	
Matrix		Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units						
Volatile Organic Compounds							
Acetone	mg/kg	0.004JB	0.005JB	0.005JB	ND	0.6	100
Methylene Chloride	mg/kg	0.071J	0.0061JB	0.0069B	0.0035JB	1.1B	1
Chloroform	mg/kg	ND	ND	ND	ND	ND	1
Benzene	mg/kg	ND	ND	ND	ND	1.0	1
O-Xylene	mg/kg	ND	ND	ND	ND	0.87	NC
Toluene	mg/kg	ND	ND	ND	ND	0.76	500
Ethylbenzene	mg/kg	ND	ND	ND	ND	7.6	100
M & P Xylenes	mg/kg	ND	ND	ND	ND	30.0	NC
Inorganics							
Lead	mg/kg	30.7	ND	9.05	ND	16.3	NC

*Direct
Contact
ppm*

1000

49

19

3

1000

1000

1000

100

100

100

100

100

100

100

100

100

100

TABLE 3-5 (CONTINUED)

**SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Sample ID No.		S-6	S-7	S-8	S-9	S-10	NJDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.6	1191.7	1191.8	1191.9	1191.10	
Matrix		Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units						
Volatile Organic Compounds							
Acetone	mg/kg	0.004JB	0.3JB	0.029JB	ND	ND	100
Chloroform	mg/kg	ND	ND	ND	0.013	ND	1
Methylene Chloride	mg/kg	0.0044J	0.98B	0.02JB	0.0042JB	0.0042JB	1
Benzene	mg/kg	ND	4.0	ND	ND	ND	1
O-Xylene	mg/kg	ND	0.45J	ND	ND	ND	NC
Toluene	mg/kg	ND	ND	ND	ND	ND	500
Ethylbenzene	mg/kg	ND	0.89J	ND	ND	ND	100
M & P Xylenes	mg/kg	ND	2.0	ND	ND	ND	NC
Inorganic Compound							
Lead	mg/kg	52.1	12.4	ND	58.2	55.8	NC

*Direct
Contact*

1000

19

49

3

1000

1000

100

100

100

100

100

100

100

100

100

100

100

*total
410*

TABLE 3-5 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY

Sample ID No.		S-11	S-13	S-14	S-15	NIDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.11	1191.13	1191.14	1191.15	
Matrix		Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units					
Volatile Organic Compounds						
Acetone	mg/kg	0.0046JB	ND	ND	0.039B	100
Methylene Chloride	mg/kg	0.0042JB	0.005JB	2.3JB	0.0056JB	1
Chloroform	mg/kg	ND	ND	ND	ND	1
Benzene	mg/kg	ND	ND	ND	0.0035J	1
O-Xylene	mg/kg	ND	ND	1.4J	ND	NC
Toluene	mg/kg	ND	ND	ND	0.0017J	500
Ethylbenzene	mg/kg	ND	ND	1.1J	0.0077J	100
M & P Xylenes	mg/kg	ND	ND	6.2		NC
Inorganic Compound						
Lead	mg/kg	155	14.8	28.8	11.0	NC

Direct
Contact

1000

49

19

3

1000

1000

100

Inter
410

TABLE 3-5 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS

BUILDING NO. 108

UST NOS. 60 TO 64

FORT MONMOUTH, NEW JERSEY

Sample ID No.		S-16	S-17	S-18	S-19	Trip Blank	Field Blank	NIDEPE Impact to Groundwater Soil Cleanup Criteria
Lab ID No.		1191.16	1191.17	1191.18	1191.19	TB	FB	
Matrix		Soil	Soil	Soil	Soil	Aqueous	Aqueous	
Sample Type		PE	PE	PE	PE	PE	PE	
Date of Collection		5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	5/3/93	
Analytical Parameter	Units							
Volatile Organic Compounds								
Acetone	mg/kg	ND	ND	ND	ND	ND	0.25B	100
Methylene Chloride	mg/kg	0.87	1.0	0.87	0.49	2.4J	0.0041J	1
Chloroform	mg/kg	ND	ND	ND	ND	ND	ND	1
Benzene	mg/kg	0.76J	2.5	ND	ND	ND	ND	1
O-Xylene	mg/kg	69	ND	1.2	ND	ND	ND	NC
Toluene	mg/kg	9.5	ND	0.92	ND	ND	ND	500
Ethylbenzene	mg/kg	21	0.34J	0.85	ND	ND	ND	100
M & P Xylenes	mg/kg	170	1.9	3.4	0.025J	ND	ND	NC
Inorganic Compound						ND	ND	
Lead	mg/kg	12.3	21.8	10.4	174	ND	ND	NC

Direct
Contact

1000
49
14
3
1000
410
1000
100



TABLE 3-5 (CONTINUED)

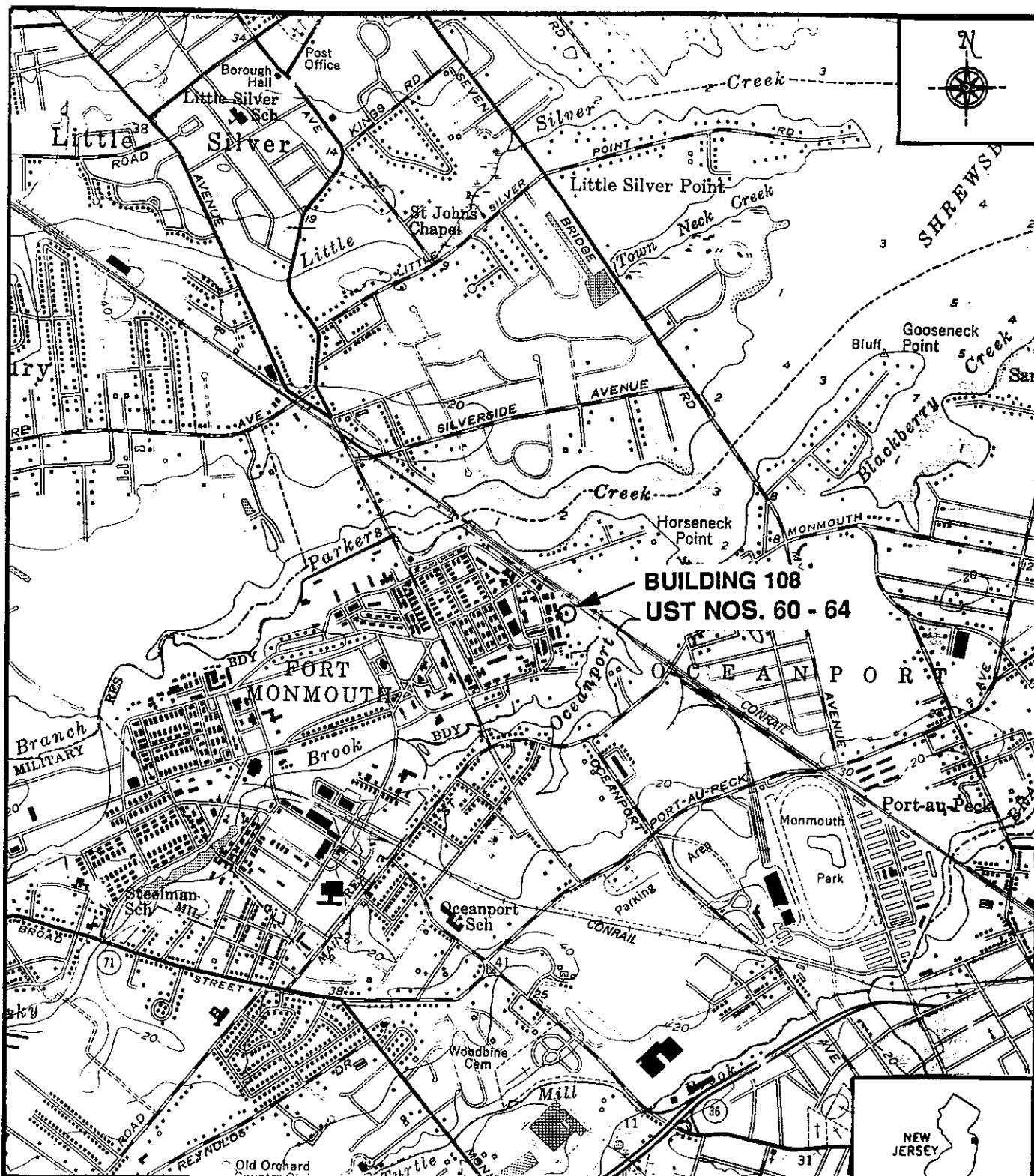
**ABBREVIATIONS, DATA QUALIFIERS AND NOTES
BUILDING NO. 108
UST NOS. 60 TO 64
FORT MONMOUTH, NEW JERSEY**

Abbreviations:

- PE:** - Post Excavation.
- NC:** - No groundwater cleanup criterion has been proposed for this analyte by NJDEPE.
- ND:** - Not detected.
- mg/kg:** - Milligrams per Kilogram.
- ug/kg:** - Micrograms per Kilogram.

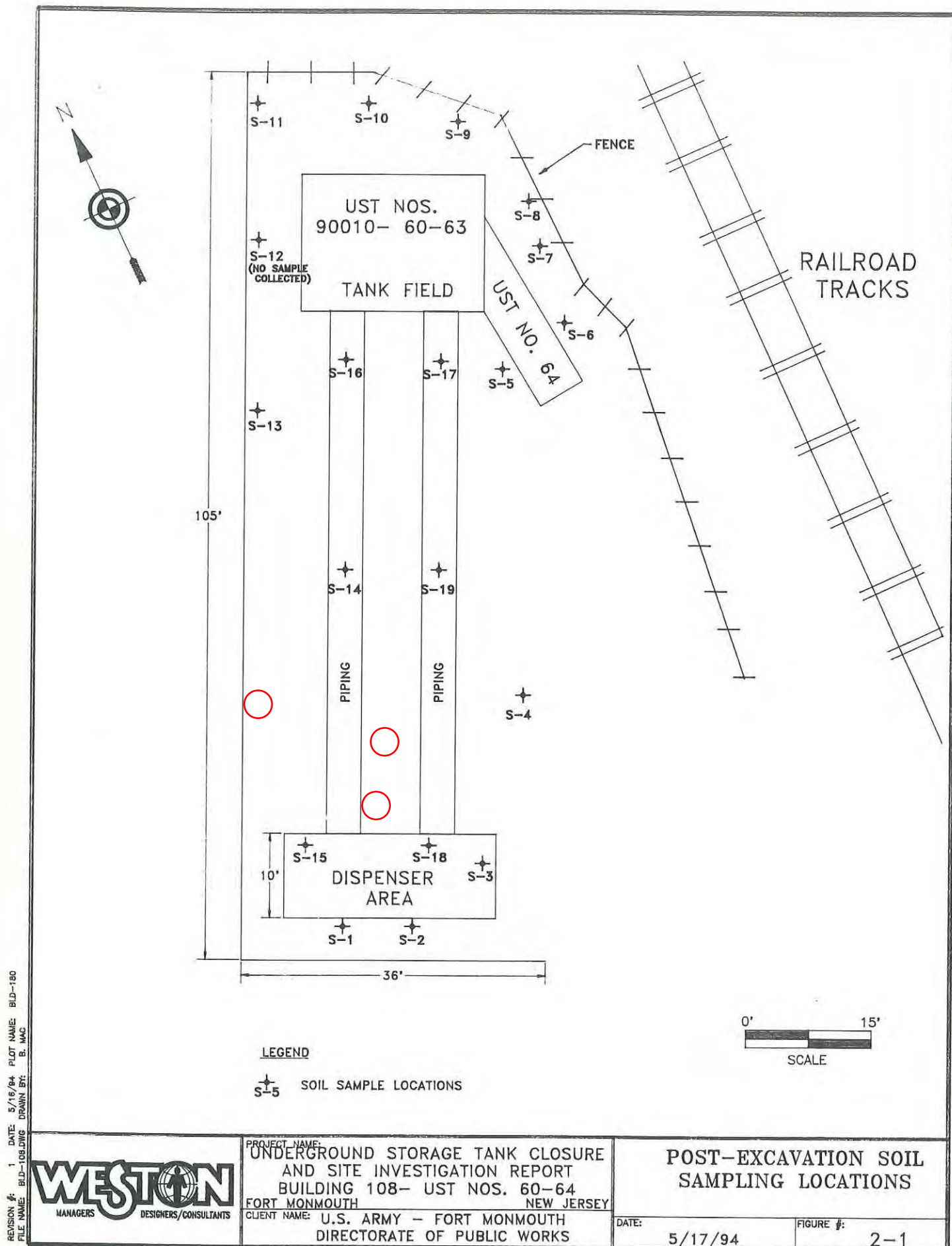
Data Qualifiers:

- J:** - Indicates an estimated value.
- B:** - Indicates also present in blank.



WESTON
 MANAGERS DESIGNERS/CONSULTANTS

FIGURE 1-1
FACILITY LOCATION MAP
U.S. ARMY - DIRECTORATE OF PUBLIC WORKS
FORT MONMOUTH, NEW JERSEY



FINAL

Excerpts

Remedial Investigation Report

Site 108

U. S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey



Directorate of Public Works



August 13, 2004

Versar INC.

201 Gibraltar Road, Suite 100
Horsham, Pennsylvania 19044

Contract No. DACA 51-00-D-004
Delivery Order No. 19

Table 5-4
Supplemental Soil Sample Results
Site 108 - Main Post
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP RDCSCC* (mg/Kg)	1326	1327	1328	1329	1330	1331	1332	1333	1334
Boring Location		1	1	1	2	2	2	3	3	3
Sample Depth		0-6"	12-18"	24-30"	0-6"	12-18"	24-30"	0-6"	12-18"	24-30"
Sample Date		03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01
Arsenic	20	108.46	30.96	9.3	ND	7.81	44.06	98.11	ND	ND
Lead	400	10.6	6.49	7.74	2.55	1.98	11.9	13.9	1.33	15.2

Lab Sample ID	NJDEP RDCSCC* (mg/Kg)	1335	1336	1337	1338	1339	1340	1341	1342	1343
Boring Location		4	4	4	5	5	5	6	6	6
Sample Depth		0-6"	12-18"	24-30"	0-6"	12-18"	24-30"	0-6"	12-18"	24-30"
Sample Date		03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01
Arsenic	20	4.95	195.74	ND	27.55	28.31	57.92	17.86	18.37	22.99
Lead	400	8.97	8.32	16.3	11.9	10	6.52	9.28	10.4	9.07

Lab Sample ID	NJDEP RDCSCC* (mg/Kg)	1344	1345	1346	1347	1348	1349	1350	1351	1352
Boring Location		7	7	7	8	8	8	9	9	9
Sample Depth		0-6"	12-18"	24-30"	0-6"	12-18"	24-30"	0-6"	12-18"	24-30"
Sample Date		03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01	03/08/01
Arsenic	20	30.62	32.9	7.5	24.37	68.51	297.03	16.98	ND	15.56
Lead	400	8.91	23	10.6	6.29	14.3	166	11.8	1.99	11.4

NOTES:

*New Jersey Department of Environmental Protection Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D.

All concentrations are reported in milligrams per kilogram (mg/Kg) or parts per million (ppm).

Exceedances of the NJDEP RDCSCC are highlighted and printed in **bold-faced** type.

ND: Analyte not detected in sample.

Scope of Work for Building 108

Prepared by: Robert Youhas

Date Prepared: 11/01/2010; Revised on 11/16/10, 11/22/10

Background

Site 108 is located in the eastern portion of the Main Post Area of Fort Monmouth, east of Riverside Avenue in the vicinity of buildings 63, 484 and 488. As part of the DPW's underground storage tank (UST) management program, two UST closure reports (May 1994 and February 1996) have been submitted to the New Jersey Department of Environmental Protection (NJDEP) regarding USTs in the vicinity of Site 108. Four monitoring wells (108-MW1, 108-MW2, 108-MW3 and 108-MW4) were installed in September 1993 and August 1995, as part of the UST closures.

According to the *UST Closure and Site Investigation Report (SIR)* for Site 108, NJDEP Facility No. 090010, TMS No. 60, 61, 62, 63 and 64, Fort Monmouth, New Jersey, prepared by Roy F. Weston, Inc. (Weston) for the Fort Monmouth Directorate of Public Works (DPW), dated May 1994, there were five USTs (UST Nos. 60 through 64) located north of building 488, which is north of former Building 108. UST Nos. 60, 61 and 62 were single-walled, steel, 5,000-gallon unleaded gasoline tanks. UST No. 63 was a single-walled, steel, 5,000-gallon diesel fuel tank. UST No. 64 was a single-walled, steel, 5,000-gallon kerosene tank.

In February and November 1990, tightness testing was performed on UST No. 63. Results confirmed that the UST was "tight". There is no documentation of tightness testing for the other four USTs.

In March and April 1993, the five USTs, dispensers, and appurtenant piping were drained, removed, and recycled offsite. In addition to the UST removals, approximately 221 cubic yards of potentially contaminated soil was removed and disposed offsite. UST Nos. 60, 61, and 62 were observed to be in good condition. The condition of UST No. 63 was not documented in the *UST Closure Report* (Weston, 1994). Several corrosion holes of approximately 1/16-inch diameter were observed on UST No. 64. In addition, a sheen was observed on the groundwater surface in the UST No. 64 excavation. On April 12, 1993, based on observations during the excavation of UST No. 64, a discharge was reported to the NJDEP, and case number 93-04-12-29 was assigned. All post-excavation soil sampling results were in compliance with the NJDEP's November 4, 2009 Residential Direct Contact Soil Remediation Standards (RDCSRS), with the exception of the following compounds:

Table 1 Post-Excavation Soil Sample Exceedances for UST No. 64

Compound	MSSRS (mg/kg)	S-3	S-4	S-5	S-6	S-7	S-8	S-11	S-14	S-16	S-17	S-19
Benzo(a)anthracene	0.6 ^B	2.3	0.35	0.78	1.2	ND	0.5J	0.44	1.0	0.42J	0.19J	2.3
Benzo(b)fluoranthene	0.6 ^B	1.8	0.22J	0.10J	0.3	ND	0.63J	0.65	ND	ND	0.19J	2.3
Dibenzo(a,h)anthracene	0.2 ^B	0.35J	0.074J	0.10J	0.3	ND	ND	0.13J	0.25J	ND	ND	ND
Benzo(a)pyrene	0.2 ^B	1.8	0.34J	0.57	1.1	ND	ND	0.4	0.87	0.27J	1.3	2.1
Indeno(1,2,3-cd)pyrene	0.6 ^B	1.1	0.19J	0.28J	0.68	ND	ND	0.26J	0.49	ND	0.21J	ND
Benzene	2.0 ^B	ND	ND	1.0	ND	4.0	ND	ND	ND	0.76J	2.5	ND

MSSRS = Most Stringent Soil Remediation Standard

^BExceeds November 4, 2009 Residential Direct Contact Soil Remediation Standards (RDCSRS)

J = Estimated Concentration

B = Indicates Compound Also Found in Blank
mg/kg = milligrams per kilogram

↑
This is the same as the 1993 data in the other data package

According to the *UST Closure and Site Investigation Report for Former Building 108*, UST No. 090010-7, prepared by Smith Technologies Corporation, dated February 1996, there was one UST (No. 7) located adjacent to former Building 108. UST No. 7 was a steel, 1,000-gallon UST that contained No. 2 fuel oil. On July 14, 1994, UST No. 7 was drained, removed, and disposed offsite. One small hole was observed during the inspection by the subsurface evaluator. In soils surrounding the UST, no evidence of contamination was observed. On July 14, 1994, to evaluate soil conditions following removal of UST No. 7 and associated piping, post-excavation soil samples were collected from eight locations and analyzed for total petroleum hydrocarbons (TPHC). TPHC was detected in five of the eight soil samples at concentrations ranging from 26.2 mg/kg to 192.0 mg/kg, in compliance with the NJDEP soil cleanup criteria of 5,100 mg/kg. Based on visual inspection of UST No. 7 and appurtenant piping, field screening of subsurface soils, and analytical results of collected soil samples, the DPW concluded that no reportable discharge had occurred.

On March 8, 2001, as part of the remedial investigation of Site 108, a Geoprobe investigation was conducted. Soil sampling was conducted based on detections of elevated arsenic concentrations in groundwater monitoring well samples collected at Site 108. A total of twenty-seven soil samples and three duplicate samples were collected from nine distinct Geoprobe borings. The soil samples were collected from each Geoprobe boring at depth intervals of 0 to 6 inches, 12 to 18 inches and 24 to 30 inches below ground surface (bgs). The soil samples were analyzed by the Fort Monmouth Environmental Testing Laboratory (FMETL) for arsenic and lead. Arsenic was detected at concentrations exceeding the RDCSCC of 19 mg/kg in fourteen soil samples collected from eight separate Geoprobe® boring locations. Concentrations ranged from 15.56 mg/kg (24-30 inches) at boring location #9 to 297.03 mg/kg (24-30 inches) at boring location #8. Lead was detected at concentrations below the RDCSCC of 400 mg/kg in twenty-seven soil samples collected from nine separate Geoprobe® boring locations. Concentrations ranged from 1.33 mg/kg (12-18 inches) at boring location #3 to 166 mg/kg (24-30 inches) at boring location #8.

Purpose

To respond to the following comment made by the NJDEP in their June 24, 2008 correspondence letter:

Ground Water - General

- a) The existing monitoring wells cannot adequately monitor potential ground water impacts at Site 108, and thus the remedial investigation of ground water isn't complete. Ground water samples must be collected from beneath former UST #64, the locations of borings S-5 and S-7 [where the Impact to Ground Water Soil Cleanup Criteria (IGWSCC) for benzene was exceeded], and within 10 feet hydraulically downgradient of the former UST piping and dispenser area. NJDEP recommends the use of temporary well points initially. Ground water samples should be analyzed for VO (volatile organic) +10 and base neutrals (BN) +15.*
- b) Based on comment "a" above, NJDEP cannot concur with the conclusion that arsenic is the only ground water contaminant of concern at Site 108.*

Revisit select soil borings that exceeded NJDEP soil remediation standards by collecting additional groundwater and soil samples for volatile organic compound (VOC) and base neutral (BN) analysis. Analysis for arsenic and lead will not be performed as part of this Scope of Work, as soil samples were

collected from Site 108 on October 27, 2010 and analyzed for Target Analyte List (TAL) metals in support of the *Base-Wide Glauconitic Soil Study*.

Scope of Work

Soil

Advance eleven soil borings (108BL-1 through 108BL-11) to the groundwater table. Scan the soil column collected in each acetate sleeve with a photoionization detector (PID). Collect a single soil sample within six inches of the groundwater table (soil-water interface) from each soil boring. Table #2 assigns a proposed soil boring (BL-1 through BL-11) to a historical soil sample. Submit the following soil samples to Fort Monmouth laboratory for VO+10 analysis only: BL-5. Submit the following soil samples to Fort Monmouth laboratory for BN+15 analysis only: BL-1, BL-2, BL-3, BL-4, BL-6, BL-7, BL-8, BL-9, and BL-11. Submit the following soil sample to Fort Monmouth laboratory for both VO+10 and BN+15 analyses: BL-10. Proposed soil boring 108BL-12 will be a temporary groundwater point only, located hydraulically downgradient of the UST No. 64 excavation.

Table 2 Post-Excavation Soil Sample Exceedances for UST No. 64 with Proposed Soil Borings

Proposed Soil Boring		BL-1	BL-2	BL-3	BL-4	BL-5	BL-6	BL-7	BL-8	BL-9	BL-10	BL-11
Proposed Analysis		BN+1 S	BN+1 S	BN+1 S	BN+1 S	VO+1 0	BN+1 5	BN+1 5	BN+1 S	BN+1 S	VO+10 BN+15	BN+1 S
Compound	MSSRS (mg/kg)	S-3	S-4	S-5	S-6	S-7	S-8	S-11	S-14	S-16	S-17	S-19
Benzo(a)anthracene	0.6 ^B	2.3	0.35	0.78	1.2	ND	0.5J	0.44	1.0	0.42J	0.19J	2.3
Benzo(b)fluoranthene	0.6 ^B	1.8	0.22J	0.10J	0.3	ND	0.63J	0.65	ND	ND	0.19J	2.3
Dibenzo(a,h)anthracene	0.2 ^B	0.35J	0.074J	0.10J	0.3	ND	ND	0.13J	0.25J	ND	ND	ND
Benzo(a)pyrene	0.2 ^B	1.8	0.34J	0.57	1.1	ND	ND	0.4	0.87	0.27J	1.3	2.1
Indeno(1,2,3-cd)pyrene	0.6 ^B	1.1	0.19J	0.28J	0.68	ND	ND	0.26J	0.49	ND	0.21J	ND
Benzene	2.0 ^B	ND	ND	1.0	ND	4.0	ND	ND	ND	0.76J	2.5	ND

MSSRS = Most Stringent Soil Remediation Standard

^BExceeds November 4, 2009 Residential Direct Contact Soil Remediation Standards (RDCSRS)

J = Estimated Concentration

B = Indicates Compound Also Found in Blank

mg/kg = milligrams per kilogram

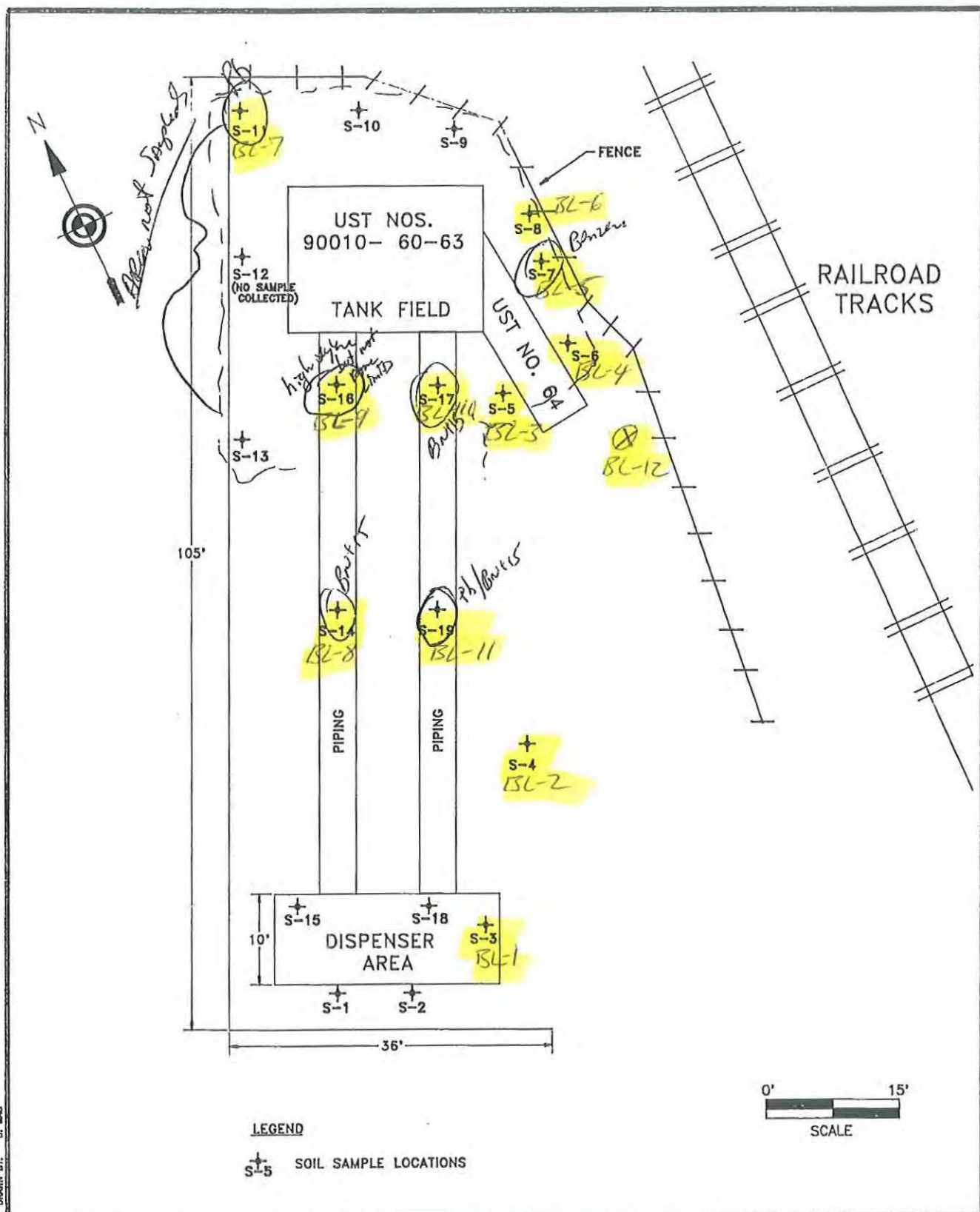
Groundwater

Install poly vinyl chloride (PVC) temporary monitoring points in the boreholes of soil borings 108BL-5, 108BL-7, and 108BL-12. Soil boring 108BL-12 is a temporary well point only – no soil samples are to be collected. Ensure that each temporary well point is screened across the groundwater table. Purge each temporary well point with a peristaltic pump until the purge water is free of suspended sediments. Following purging, collect a groundwater sample using a dedicated bailer. Submit the groundwater samples to the DPW Environmental Laboratory for VO+10 and BN+15 analyses. After the groundwater samples are collected, remove each temporary monitoring point from their respective boreholes and backfill each to grade.

SOPs

Please refer to the following Fort Monmouth Standard Operating Procedures (SOPs): SAM-0204, SAM-0206, and SAM-0207.

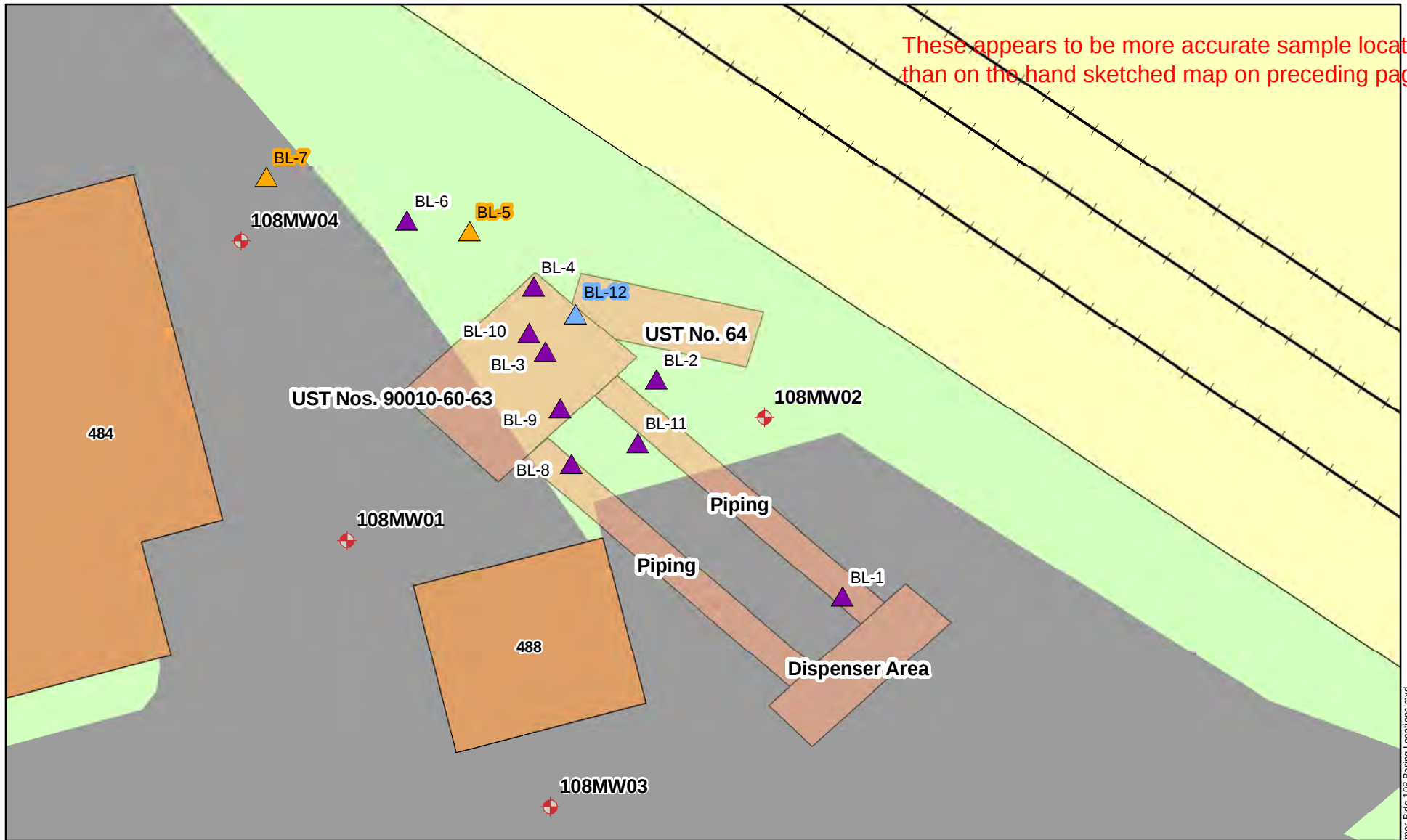
Results /Recommendations



REVISION # 1 DATE 5/17/94 PLOT NAME: BLD-180
 FILE NAME: BLD-108.DWG DRAWN BY: B. MAC

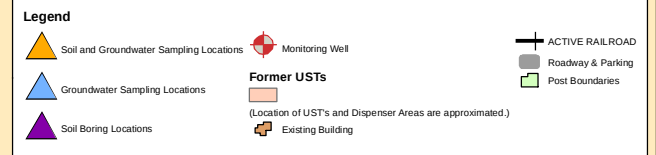
	PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 108- UST NOS. 60-64 FORT MONMOUTH NEW JERSEY	POST-EXCAVATION SOIL SAMPLING LOCATIONS	
	CLIENT NAME: U.S. ARMY - FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS	DATE: 5/17/94	FIGURE #: 2-1

These appears to be more accurate sample locations than on the hand sketched map on preceding page.



Soil Boring Locations Former Bldg 108; Main Post Fort Monmouth, New Jersey **FOUO**

0 10 20 40 Feet



Map Created by:
Fort Monmouth Installation GIO, Environmental Division
Fort Monmouth, New Jersey
Date: February 9, 2011
All drawings must be field verified.
New Jersey State Plane Feet, NAD83



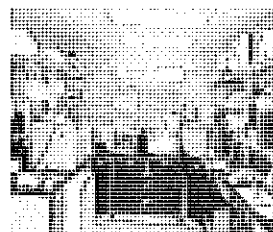
FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461

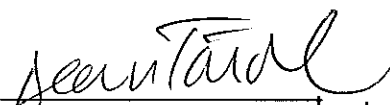


ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: 11-33178

Building 488

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
BL-7 (3.0-3.5')	1055301	Soil	15-Dec-10 09:15	12/15/10
BL-6 (5.5-6.0')	1055302	Soil	15-Dec-10 09:50	12/15/10
BL-4 (3.5-4.0')	1055303	Soil	15-Dec-10 11:00	12/15/10
BL-9 (2.5-3.0')	1055304	Soil	15-Dec-10 11:45	12/15/10
BL-8 (3.0-3.5')	1055305	Soil	15-Dec-10 13:35	12/15/10
BL-11 (2.0-2.5')	1055306	Soil	15-Dec-10 14:00	12/15/10
BL-3 (2.0-2.5')	1055307	Soil	15-Dec-10 14:30	12/15/10
BL-2 (2.5-3.0')	1055308	Soil	15-Dec-10 14:55	12/15/10

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
BN+15


Dean Tardiff/Date: 1/10/11
Laboratory Manager

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E569.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055301**

Misc Info **BL-7 3.0-3.5**
 Dilution factor **1**
 Sample Multiplier **0.112**

Sample Weight **10.55 g**
 Percent Solids **84.6 %**

Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])

Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.111	0.56 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.188	0.56 mg/kg	
62-53-3	Aniline			not detected	NLE	0.299	0.56 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.216	0.56 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.187	0.56 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.195	0.56 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.289	0.56 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.217	0.56 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.251	0.56 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.283	0.56 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.212	0.56 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.253	0.56 mg/kg	
78-59-1	Isophorone			not detected	510	0.269	0.56 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.222	0.56 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.245	0.56 mg/kg	
91-20-3	Naphthalene			not detected	6	0.271	0.56 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.415	0.56 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.242	0.56 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.291	0.56 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.164	0.56 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.281	0.56 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.344	0.56 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.296	0.56 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.305	0.56 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.292	0.56 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.248	1.12 mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.304	0.56 mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.357	0.56 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.292	0.56 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.280	0.56 mg/kg	
86-73-7	Fluorene			not detected	2300	0.317	0.56 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.311	0.56 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.306	0.56 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.304	0.56 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.322	0.56 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.323	0.56 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.336	0.56 mg/kg	
85-01-8	Phenanthrene	15.40	730984	0.56 mg/kg	NLE	0.333	0.56 mg/kg	
120-12-7	Anthracene			not detected	17000	0.335	0.56 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.320	0.56 mg/kg	
206-44-0	Fluoranthene	17.15	1868345	1.42 mg/kg	2300	0.333	0.56 mg/kg	

Semi-Volatile Analysis Report

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Data File Name **E569.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055301**

Misc Info **BL-7 3.0-3.5**
 Dilution factor **1**
 Sample Multiplier **0.112**
*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),
 Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benizidine			not detected	0.7	0.301	1.12 mg/kg
129-00-0	Pyrene	17.49	1581460	1.05 mg/kg	1700	0.355	0.56 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.295	0.56 mg/kg
56-55-3	Benzo[a]anthracene	19.22	866836	0.66 mg/kg	0.6	0.334	0.56 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.305	0.56 mg/kg
218-01-9	Chrysene	19.28	841656	0.67 mg/kg	62	0.315	0.56 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.354	0.56 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.297	0.56 mg/kg
205-99-2	Benzo[b]fluoranthene	20.96	1010248	0.81 mg/kg	0.6	0.240	0.56 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.288	0.56 mg/kg
50-32-8	Benzo[a]pyrene	21.61	664766	0.58 mg/kg	0.2	0.258	0.56 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene	24.10	373497	0.35 mg/kg	0.6	0.218	0.56 mg/kg J
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.204	0.56 mg/kg
191-24-2	Benzo[g,h,i]perylene	24.76	343947	0.38 mg/kg	380000	0.207	0.56 mg/kg J

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-7 3.0-3.5

Lab Name: FMETL Lab Code 13461
Project: _____ Case No.: _____ Location: 488 SDG No.: 10553
Matrix: (soil/water) SOIL Lab Sample ID: 1055301
Sample wt/vol: 10.55 (g/ml) G Lab File ID: E569.D
Level: (low/med) LOW Date Received: 12/15/2010
% Moisture: 15.4 decanted: (Y/N) N Date Extracted: 12/20/2010
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	5.92	11000	J
2.	extraction by-product	6.68	98000	J
3.	extraction by-product	13.78	450	J
4.	extraction by-product	15.59	700	J
5.	unknown PAH	21.51	600	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E572.D**
Operator **ROBERTS**
Date Acquired **5-Jan-11**
Sample Name **1055302**

Misc Info **BL-6 5.5-6.0**
Dilution factor **1**
Sample Multiplier **0.119**

Sample Weight **10.07 g**
Percent Solids **83.4 %**

Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100])
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.118	0.60 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.200	0.60 mg/kg	
62-53-3	Aniline			not detected	NLE	0.318	0.60 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.230	0.60 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.199	0.60 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.207	0.60 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.307	0.60 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.231	0.60 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.267	0.60 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.301	0.60 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.225	0.60 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.269	0.60 mg/kg	
78-59-1	Isophorone			not detected	510	0.286	0.60 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.236	0.60 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.261	0.60 mg/kg	
91-20-3	Naphthalene			not detected	6	0.288	0.60 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.441	0.60 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.257	0.60 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.310	0.60 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.174	0.60 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.299	0.60 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.366	0.60 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.314	0.60 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.324	0.60 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.311	0.60 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.263	1.19 mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.323	0.60 mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.380	0.60 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.311	0.60 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.298	0.60 mg/kg	
86-73-7	Fluorene			not detected	2300	0.337	0.60 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.331	0.60 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.325	0.60 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.323	0.60 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.342	0.60 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.343	0.60 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.357	0.60 mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.354	0.60 mg/kg	
120-12-7	Anthracene			not detected	17000	0.356	0.60 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.341	0.60 mg/kg	
206-44-0	Fluoranthene	17.15	832651	0.69 mg/kg	2300	0.354	0.60 mg/kg	

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Semi-Volatile Analysis Report

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Data File Name **E572.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055302**

Misc Info **BL-6 5.5-6.0**
 Dilution factor **1**
 Sample Multiplier **0.119**
 Sample multiplier = $(0.001 * \text{Dilution factor}) / ([\text{sample weight}(\text{kg})] * [\text{percent solids}/100])$,
 Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.320	1.19 mg/kg
129-00-0	Pyrene	17.48	861192	0.62 mg/kg	1700	0.377	0.60 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.313	0.60 mg/kg
56-55-3	Benzo[a]anthracene	19.23	622889	0.52 mg/kg	0.6	0.355	0.60 mg/kg J
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.324	0.60 mg/kg
218-01-9	Chrysene	19.29	583117	0.50 mg/kg	62	0.335	0.60 mg/kg J
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.376	0.60 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.316	0.60 mg/kg
205-99-2	Benzo[b]fluoranthene	20.98	771963	0.67 mg/kg	0.6	0.255	0.60 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.306	0.60 mg/kg
50-32-8	Benzo[a]pyrene	21.63	458396	0.43 mg/kg	0.2	0.274	0.60 mg/kg J
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.232	0.60 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.217	0.60 mg/kg
191-24-2	Benzo[g,h,i]perylene	24.78	260272	0.31 mg/kg	380000	0.220	0.60 mg/kg J

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-6 5.5-6.0

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10553

Matrix: (soil/water) SOIL Lab Sample ID: 1055302

Sample wt/vol: 10.07 (g/ml) G Lab File ID: E572.D

Level: (low/med) LOW Date Received: 12/15/2010

% Moisture: 16.6 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.68	100000	J
2.	Alkane: Straight-Chain	18.99	1300	J
3.	unknown hydrocarbon	19.62	1100	J
4.	unknown hydrocarbon	19.70	1100	J
5.	unknown PAH	19.83	1500	J
6.	unknown hydrocarbon	19.94	1500	J
7.	unknown hydrocarbon	20.22	930	J
8.	unknown hydrocarbon	20.35	1100	J
9.	unknown hydrocarbon	20.52	910	J
10.	unknown hydrocarbon	20.67	1600	J
11.	unknown hydrocarbon	20.74	1100	J
12.	unknown hydrocarbon	20.85	2100	J
13.	Alkane: Straight-Chain	21.08	1400	J
14.	unknown PAH	21.17	1000	J
15.	unknown hydrocarbon	21.25	1100	J
16.	unknown hydrocarbon	21.32	1500	J
17.	unknown hydrocarbon	21.43	930	J
18.	unknown PAH	21.52	1700	J
19.	unknown hydrocarbon	21.90	970	J
20.	unknown hydrocarbon	22.02	1100	J
21.	Alkane: Straight-Chain	22.58	1700	J
22.	unknown hydrocarbon	22.86	920	J
23.	unknown hydrocarbon	22.98	2000	J
24.	unknown hydrocarbon	23.17	990	J
25.	unknown hydrocarbon	23.64	960	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E573.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055303**

Misc Info **BL-4 3.5-4.0**
 Dilution factor **1**
 Sample Multiplier **0.110**

Sample Weight **10.44 g**
 Percent Solids **87.0 %**

Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100])
 Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.109	0.55	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.185	0.55	mg/kg
62-53-3	Aniline			not detected	NLE	0.294	0.55	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.212	0.55	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.184	0.55	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.192	0.55	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.284	0.55	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.214	0.55	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.247	0.55	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.279	0.55	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.208	0.55	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.249	0.55	mg/kg
78-59-1	Isophorone			not detected	510	0.264	0.55	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.218	0.55	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.241	0.55	mg/kg
91-20-3	Naphthalene			not detected	6	0.266	0.55	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.407	0.55	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.238	0.55	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.286	0.55	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.161	0.55	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.276	0.55	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.338	0.55	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.291	0.55	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.299	0.55	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.287	0.55	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.243	1.10	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.298	0.55	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.351	0.55	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.287	0.55	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.275	0.55	mg/kg
86-73-7	Fluorene			not detected	2300	0.312	0.55	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.306	0.55	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.301	0.55	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.298	0.55	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.316	0.55	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.317	0.55	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.330	0.55	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.327	0.55	mg/kg
120-12-7	Anthracene			not detected	17000	0.329	0.55	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.315	0.55	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.327	0.55	mg/kg

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Semi-Volatile Analysis Report

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Data File Name	E573.D	Misc Info	BL-4 3.5-4.0	Sample Weight	10.44 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	87.0 %
Date Acquired	5-Jan-11	Sample Multiplier	0.110		
Sample Name	1055303	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.296	1.10 mg/kg
129-00-0	Pyrene			not detected	1700	0.349	0.55 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.290	0.55 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.328	0.55 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.299	0.55 mg/kg
218-01-9	Chrysene			not detected	62	0.309	0.55 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.348	0.55 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.292	0.55 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.236	0.55 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.283	0.55 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.253	0.55 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.215	0.55 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.200	0.55 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.204	0.55 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-4 3.5-4.0

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10553

Matrix: (soil/water) SOIL Lab Sample ID: 1055303

Sample wt/vol: 10.44 (g/ml) G Lab File ID: E573.D

Level: (low/med) LOW Date Received: 12/15/2010

% Moisture: 13 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 24 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.67	83000	J
2.	unknown hydrocarbon	18.71	1000	J
3.	Alkane: Straight-Chain	18.99	1500	J
4.	unknown hydrocarbon	19.52	960	J
5.	unknown hydrocarbon	19.70	1200	J
6.	unknown hydrocarbon	19.83	1400	J
7.	unknown hydrocarbon	19.94	1000	J
8.	unknown hydrocarbon	20.04	1800	J
9.	unknown hydrocarbon	20.15	990	J
10.	unknown hydrocarbon	20.40	920	J
11.	unknown hydrocarbon	20.54	2000	J
12.	unknown hydrocarbon	20.75	1000	J
13.	unknown hydrocarbon	20.85	1500	J
14.	unknown PAH	20.98	1500	J
15.	unknown hydrocarbon	21.08	2000	J
16.	unknown hydrocarbon	21.31	930	J
17.	unknown hydrocarbon	21.41	1000	J
18.	unknown PAH	21.51	1500	J
19.	unknown hydrocarbon	22.03	1400	J
20.	unknown hydrocarbon	22.37	920	J
21.	Alkane: Straight-Chain	22.58	1200	J
22.	unknown hydrocarbon	22.69	900	J
23.	unknown hydrocarbon	22.98	1600	J
24.	unknown hydrocarbon	23.17	920	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E574.D**
Operator **ROBERTS**
Date Acquired **5-Jan-11**
Sample Name **1055304**

Misc Info **BL-9 2.5-3.0**
Dilution factor **1**
Sample Multiplier **0.115**

Sample Weight **10.31 g**
Percent Solids **84.3 %**

Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100])
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.114	0.58	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.193	0.58	mg/kg
62-53-3	Aniline			not detected	NLE	0.307	0.58	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.222	0.58	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.192	0.58	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.200	0.58	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.297	0.58	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.223	0.58	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.258	0.58	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.291	0.58	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.217	0.58	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.260	0.58	mg/kg
78-59-1	Isophorone			not detected	510	0.276	0.58	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.228	0.58	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.252	0.58	mg/kg
91-20-3	Naphthalene			not detected	6	0.278	0.58	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.426	0.58	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.249	0.58	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.299	0.58	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.168	0.58	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.289	0.58	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.353	0.58	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.304	0.58	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.313	0.58	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.300	0.58	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.254	1.15	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.312	0.58	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.367	0.58	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.300	0.58	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.288	0.58	mg/kg
86-73-7	Fluorene			not detected	2300	0.326	0.58	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.320	0.58	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.314	0.58	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.312	0.58	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.330	0.58	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.331	0.58	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.345	0.58	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.342	0.58	mg/kg
120-12-7	Anthracene			not detected	17000	0.344	0.58	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.329	0.58	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.342	0.58	mg/kg

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Semi-Volatile Analysis Report

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Data File Name **E574.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055304**

Misc Info **BL-9 2.5-3.0**
 Dilution factor **1**
 Sample Multiplier **0.115**
*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),
 Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.310	1.15 mg/kg
129-00-0	Pyrene			not detected	1700	0.365	0.58 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.303	0.58 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.343	0.58 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.313	0.58 mg/kg
218-01-9	Chrysene			not detected	62	0.323	0.58 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.364	0.58 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.305	0.58 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.246	0.58 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.296	0.58 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.265	0.58 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.224	0.58 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.209	0.58 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.213	0.58 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-9 2.5-3.0

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10553

Matrix: (soil/water) SOIL Lab Sample ID: 1055304

Sample wt/vol: 10.31 (g/ml) G Lab File ID: E574.D

Level: (low/med) LOW Date Received: 12/15/2010

% Moisture: 15.7 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.67	86000	J
2.	unknown hydrocarbon	19.62	1200	J
3.	Alkane: Branched	19.93	1100	J
4.	unknown hydrocarbon	20.03	900	J
5.	unknown hydrocarbon	20.38	900	J
6.	Alkane: Straight-Chain	20.46	910	J
7.	unknown hydrocarbon	20.61	1200	J
8.	unknown hydrocarbon	20.80	2500	J
9.	unknown PAH	20.97	1000	J
10.	Alkane: Straight-Chain	21.07	1200	J
11.	unknown PAH	21.51	900	J
12.	unknown hydrocarbon	22.18	1100	J
13.	unknown hydrocarbon	22.39	1000	J
14.	Alkane: Straight-Chain	22.58	2200	J
15.	unknown hydrocarbon	22.76	940	J
16.	unknown hydrocarbon	22.86	900	J
17.	unknown hydrocarbon	23.18	1000	J
18.	unknown hydrocarbon	23.56	1100	J
19.	unknown hydrocarbon	23.70	940	J
20.	unknown hydrocarbon	23.92	930	J
21.	Alkane: Straight-Chain	24.22	1300	J
22.	unknown hydrocarbon	24.49	980	J
23.	unknown hydrocarbon	24.65	1200	J
24.	unknown hydrocarbon	25.07	1400	J
25.	unknown hydrocarbon	25.26	1600	J

Semi-Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File Name **E575.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055305**

Misc Info **BL-8 3.0-3.5**
 Dilution factor **1**
 Sample Multiplier **0.112**

Sample Weight **10.07 g**
 Percent Solids **88.8 %**

*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])*
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.111	0.56 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.188	0.56 mg/kg	
62-53-3	Aniline			not detected	NLE	0.299	0.56 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.216	0.56 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.187	0.56 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.195	0.56 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.289	0.56 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.217	0.56 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.250	0.56 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.283	0.56 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.211	0.56 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.253	0.56 mg/kg	
78-59-1	Isophorone			not detected	510	0.268	0.56 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.221	0.56 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.245	0.56 mg/kg	
91-20-3	Naphthalene			not detected	6	0.271	0.56 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.414	0.56 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.242	0.56 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.291	0.56 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.163	0.56 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.281	0.56 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.343	0.56 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.295	0.56 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.304	0.56 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.292	0.56 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.247	1.12 mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.303	0.56 mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.357	0.56 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.292	0.56 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.280	0.56 mg/kg	
86-73-7	Fluorene			not detected	2300	0.316	0.56 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.311	0.56 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.305	0.56 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.303	0.56 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.321	0.56 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.322	0.56 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.335	0.56 mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.332	0.56 mg/kg	
120-12-7	Anthracene			not detected	17000	0.334	0.56 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.320	0.56 mg/kg	
206-44-0	Fluoranthene			not detected	2300	0.332	0.56 mg/kg	

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Semi-Volatile Analysis Report

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Data File Name E575.D	Misc Info BL-8 3.0-3.5	Sample Weight 10.07 g	
Operator ROBERTS	Dilution factor 1	Percent Solids 88.8 %	
Date Acquired 5-Jan-11	Sample Multiplier 0.112		
Sample Name 1055305	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.</i>		

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.301	1.12 mg/kg
129-00-0	Pyrene			not detected	1700	0.355	0.56 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.294	0.56 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.333	0.56 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.304	0.56 mg/kg
218-01-9	Chrysene			not detected	62	0.314	0.56 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.353	0.56 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.296	0.56 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.239	0.56 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.287	0.56 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.257	0.56 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.218	0.56 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.204	0.56 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.207	0.56 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range	MDL= Method Detection Limit
D= Value from dilution	NLE= No Limit Established
B= Compound in Related Blank	R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.	
J= Estimated concentration, value lies between RL and MDL	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-8 3.0-3.5

Lab Name: FMETL Lab Code 13461
Project: _____ Case No.: _____ Location: 488 SDG No.: 10553
Matrix: (soil/water) SOIL Lab Sample ID: 1055305
Sample wt/vol: 10.07 (g/ml) G Lab File ID: E575.D
Level: (low/med) LOW Date Received: 12/15/2010
% Moisture: 11.2 decanted: (Y/N) N Date Extracted: 12/20/2010
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 4 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	5.91	8900	J
2.	extraction by-product	6.68	110000	J
3.	extraction by-product	13.78	780	J
4.	extraction by-product	15.59	1800	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E576.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055306**

Misc Info **BL-11 2.0-2.5**
 Dilution factor **1**
 Sample Multiplier **0.108**

Sample Weight **10.15 g**
 Percent Solids **91.0 %**

Sample multiplier = (0.001 * Dilution factor) / ((sample weight(kg)) * [percent solids/100])

Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.107	0.54 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.182	0.54 mg/kg	
62-53-3	Aniline			not detected	NLE	0.289	0.54 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.209	0.54 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.181	0.54 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.188	0.54 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.279	0.54 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.210	0.54 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.243	0.54 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.274	0.54 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.205	0.54 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.245	0.54 mg/kg	
78-59-1	Isophorone			not detected	510	0.260	0.54 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.214	0.54 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.237	0.54 mg/kg	
91-20-3	Naphthalene			not detected	6	0.262	0.54 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.401	0.54 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.234	0.54 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.281	0.54 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.158	0.54 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.272	0.54 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.332	0.54 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.286	0.54 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.294	0.54 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.283	0.54 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.239	1.08 mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.293	0.54 mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.345	0.54 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.283	0.54 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.271	0.54 mg/kg	
86-73-7	Fluorene			not detected	2300	0.306	0.54 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.301	0.54 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.296	0.54 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.293	0.54 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.311	0.54 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.312	0.54 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.325	0.54 mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.322	0.54 mg/kg	
120-12-7	Anthracene			not detected	17000	0.324	0.54 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.310	0.54 mg/kg	
206-44-0	Fluoranthene			not detected	2300	0.322	0.54 mg/kg	

Semi-Volatile Analysis Report

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Data File Name **E576.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055306**

Misc Info **BL-11 2.0-2.5**
 Dilution factor **1**
 Sample Multiplier **0.108**
*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),
 Multiplied by 0.001 to convert ug/kg to mg/kg.*

Sample Weight **10.15 g**
 Percent Solids **91.0 %**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.291	1.08 mg/kg
129-00-0	Pyrene			not detected	1700	0.343	0.54 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.285	0.54 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.323	0.54 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.294	0.54 mg/kg
218-01-9	Chrysene			not detected	62	0.304	0.54 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.342	0.54 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.287	0.54 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.232	0.54 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.278	0.54 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.249	0.54 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.211	0.54 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.197	0.54 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.200	0.54 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-11 2.0-2.5

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10553

Matrix: (soil/water) SOIL Lab Sample ID: 1055306

Sample wt/vol: 10.15 (g/ml) G Lab File ID: E576.D

Level: (low/med) LOW Date Received: 12/15/2010

% Moisture: 9 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	5.91	7100	J
2.	extraction by-product	6.66	76000	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E578.D**
Operator **ROBERTS**
Date Acquired **5-Jan-11**
Sample Name **1055307 2x**

Misc Info **BL-3 2.0-2.5**
Dilution factor **2**
Sample Multiplier **0.223**

Sample Weight **10.20 g**
Percent Solids **87.9 %**

Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100])
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.221	1.12	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.375	1.12	mg/kg
62-53-3	Aniline			not detected	NLE	0.596	1.12	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.431	1.12	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.373	1.12	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.388	1.12	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.576	1.12	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.433	1.12	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.500	1.12	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.564	1.12	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.422	1.12	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.504	1.12	mg/kg
78-59-1	Isophorone			not detected	510	0.535	1.12	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.442	1.12	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.489	1.12	mg/kg
91-20-3	Naphthalene			not detected	6	0.540	1.12	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.825	1.12	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.482	1.12	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.580	1.12	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.326	1.12	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.560	1.12	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.685	1.12	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.589	1.12	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.607	1.12	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.582	1.12	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.493	2.23	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.605	1.12	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.712	1.12	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.582	1.12	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.558	1.12	mg/kg
86-73-7	Fluorene			not detected	2300	0.631	1.12	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.620	1.12	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.609	1.12	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.605	1.12	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.640	1.12	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.642	1.12	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.669	1.12	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.663	1.12	mg/kg
120-12-7	Anthracene			not detected	17000	0.667	1.12	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.638	1.12	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.663	1.12	mg/kg

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Semi-Volatile Analysis Report

Page 2

Data File Name	E578.D	Misc Info	BL-3 2.0-2.5	Sample Weight	10.20 g
Operator	ROBERTS	Dilution factor	2	Percent Solids	87.9 %
Date Acquired	5-Jan-11	Sample Multiplier	0.223		
Sample Name	1055307 2x	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.600	2.23 mg/kg
129-00-0	Pyrene			not detected	1700	0.707	1.12 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.587	1.12 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.665	1.12 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.607	1.12 mg/kg
218-01-9	Chrysene			not detected	62	0.627	1.12 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.705	1.12 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.591	1.12 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.477	1.12 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.573	1.12 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.513	1.12 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.435	1.12 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.406	1.12 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.413	1.12 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-3 2.0-2.5

Lab Name: FMETL Lab Code 13461
Project: _____ Case No.: _____ Location: 488 SDG No.: 10553
Matrix: (soil/water) SOIL Lab Sample ID: 1053307 2x
Sample wt/vol: 10.2 (g/ml) G Lab File ID: E578.D
Level: (low/med) LOW Date Received: 12/15/2010
% Moisture: 12.1 decanted: (Y/N) N Date Extracted: 12/20/2010
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011
Injection Volume: 1.0 (uL) Dilution Factor: 2.0
GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.63	89000	JD
2.	unknown hydrocarbon	18.99	2100	JD
3.	extraction by-product	19.19	1500	JD

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E577.D**
Operator **ROBERTS**
Date Acquired **5-Jan-11**
Sample Name **1055308**

Misc Info **BL-2 2.5-3.0**
Dilution factor **1**
Sample Multiplier **0.111**

Sample Weight **10.24 g**
Percent Solids **88.3 %**

*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])*
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.109	0.55	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.186	0.55	mg/kg
62-53-3	Aniline			not detected	NLE	0.295	0.55	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.213	0.55	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.185	0.55	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.192	0.55	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.285	0.55	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.215	0.55	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.248	0.55	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.280	0.55	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.209	0.55	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.250	0.55	mg/kg
78-59-1	Isophorone			not detected	510	0.265	0.55	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.219	0.55	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.242	0.55	mg/kg
91-20-3	Naphthalene			not detected	6	0.268	0.55	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.409	0.55	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.239	0.55	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.288	0.55	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.161	0.55	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.278	0.55	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.340	0.55	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.292	0.55	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.301	0.55	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.289	0.55	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.244	1.11	mg/kg
83-32-9	Accnaphthene			not detected	3400	0.300	0.55	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.353	0.55	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.289	0.55	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.276	0.55	mg/kg
86-73-7	Fluorene			not detected	2300	0.313	0.55	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.307	0.55	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.302	0.55	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.300	0.55	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.317	0.55	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.319	0.55	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.332	0.55	mg/kg
85-01-8	Phenanthrene	15.41	1952453	1.53 mg/kg	NLE	0.328	0.55	mg/kg
120-12-7	Anthracene	15.48	466298	0.36 mg/kg	17000	0.331	0.55	mg/kg J
84-74-2	Di-n-butylphthalate			not detected	6100	0.316	0.55	mg/kg
206-44-0	Fluoranthene	17.16	3851972	2.99 mg/kg	2300	0.328	0.55	mg/kg

Semi-Volatile Analysis Report

Page 2

Data File Name **E577.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055308**

Misc Info **BL-2 2.5-3.0**
 Dilution factor **1**
 Sample Multiplier **0.111**
*Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),
 Multiplied by 0.001 to convert ug/kg to mg/kg.*

Sample Weight **10.24 g**
 Percent Solids **88.3 %**

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.298	1.11 mg/kg
129-00-0	Pyrene	17.50	3564592	2.50 mg/kg	1700	0.351	0.55 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.291	0.55 mg/kg
56-55-3	Benzo[a]anthracene	19.24	1689954	1.36 mg/kg	0.6	0.330	0.55 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.301	0.55 mg/kg
218-01-9	Chrysene	19.30	1589980	1.34 mg/kg	62	0.311	0.55 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.349	0.55 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.293	0.55 mg/kg
205-99-2	Benzo[b]fluoranthene	21.00	1752831	1.46 mg/kg	0.6	0.237	0.55 mg/kg
207-08-9	Benzo[k]fluoranthene	21.03	682338	0.59 mg/kg	6	0.284	0.55 mg/kg
50-32-8	Benzo[a]pyrene	21.65	1215432	1.10 mg/kg	0.2	0.254	0.55 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene	24.14	663893	0.64 mg/kg	0.6	0.216	0.55 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.201	0.55 mg/kg
191-24-2	Benzo[g,h,i]perylene	24.81	612869	0.71 mg/kg	380000	0.205	0.55 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-2 2.5-3.0

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10553

Matrix: (soil/water) SOIL Lab Sample ID: 1055308

Sample wt/vol: 10.24 (g/ml) G Lab File ID: E577.D

Level: (low/med) LOW Date Received: 12/15/2010

% Moisture: 11.7 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.67	86000	J
2.	unknown PAH	16.15	1800	J
3.	unknown PAH	16.27	2900	J
4.	Alkane: Straight-Chain	16.38	2600	J
5.	unknown	16.48	2000	J
6.	unknown	16.57	2100	J
7.	unknown	16.67	2300	J
8.	unknown	16.76	1700	J
9.	unknown	16.80	2100	J
10.	unknown	16.92	2100	J
11.	unknown PAH	17.97	1700	J
12.	unknown hydrocarbon	18.71	1900	J
13.	unknown hydrocarbon	18.97	3400	J
14.	unknown hydrocarbon	19.59	1900	J
15.	Alkane: Branched	19.71	2000	J
16.	unknown hydrocarbon	20.22	1700	J
17.	unknown hydrocarbon	20.56	2300	J
18.	unknown hydrocarbon	20.70	2000	J
19.	unknown hydrocarbon	20.83	2600	J
20.	Alkane: Branched	21.09	1800	J
21.	unknown PAH	21.54	2400	J
22.	unknown hydrocarbon	22.04	1800	J
23.	Alkane: Straight-Chain	22.60	2500	J
24.	unknown hydrocarbon	22.99	2500	J
25.	unknown hydrocarbon	23.66	1800	J

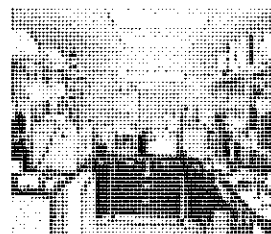
FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461



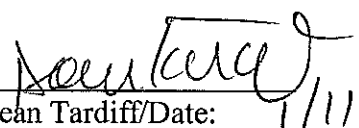
ANALYTICAL DATA REPORT Fort Monmouth Environmental Laboratory ENVIRONMENTAL DIVISION Fort Monmouth, New Jersey PROJECT: 11-33178

Building 488

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1055701	Aqueous	16-Dec-10 08:15	12/16/10
Trip Blank	1055702	Methanol	16-Dec-10 08:15	12/16/10
BL1 (3.5-4.0)	1055703	Soil	16-Dec-10 09:00	12/16/10
BL10 (2.0-2.5)	1055704	Soil	16-Dec-10 09:30	12/16/10
BL5 (4')	1055705	Soil	16-Dec-10 09:55	12/16/10
Field Blank	1055706	Aqueous	16-Dec-10 10:18	12/16/10
BL5	1055707	Aqueous	16-Dec-10 10:34	12/16/10
BL12	1055708	Aqueous	16-Dec-10 11:11	12/16/10
BL7	1055709	Aqueous	16-Dec-10 15:00	12/16/10

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB.
VOA+15, BN+15, %SOLIDS

ACCUTEST LABORATORIES
BN+15


Dean Tardiff/Date: 1/11/11
Laboratory Manager

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VA8329.D**
 Operator **ROBERTS**
 Date Acquired **21 Dec 2010 8:43 am**

Sample Name **1055707**
 Field ID **488 BL5**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ng/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L	
75-25-2	Bromoforn			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L	

*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

**The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

BL 5

Lab Name: FMETL NJDEP# 13461
Project: _____ Case No: _____ Location: 488 SDG No.: 10557
Matrix: (soil/water) WATER Lab Sample ID: 1055707
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8329.D
Level: (low/med) LOW Date Received: 12/16/2010
% Moisture: not dec. _____ Date Analyzed: 12/21/2010
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VA8330.D**
 Operator **ROBERTS**
 Date Acquired **21 Dec 2010 9:14 am**

Sample Name **1055708**
 Field ID **488 BL12**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L	

*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

**The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

BL 12

Lab Name: FMETL NJDEP# 13461
Project: _____ Case No: _____ Location: 488 SDG No.: 10557
Matrix: (soil/water) WATER Lab Sample ID: 1055708
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8330.D
Level: (low/med) LOW Date Received: 12/16/2010
% Moisture: not dec. _____ Date Analyzed: 12/21/2010
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VA8331.D**
 Operator **ROBERTS**
 Date Acquired **21 Dec 2010 9:44 am**

Sample Name **1055709**
 Field ID **488 BL7**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L	
75630	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L	

*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

**The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

BL 7

Lab Name: FMETL NJDEP# 13461

Project: _____ Case No: _____ Location: 488 SDG No.: 10557

Matrix: (soil/water) WATER Lab Sample ID: 1055709

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8331.D

Level: (low/med) LOW Date Received: 12/16/2010

% Moisture: not dec. _____ Date Analyzed: 12/21/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/LNumber TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: 10557.07 488 BL 5
 Lab Sample ID: JA64433-2
 Matrix: AQ - Ground Water
 Method: SW846 8270C SW846 3510C
 Project: Building 488 Event

Date Sampled: 12/16/10
 Date Received: 12/17/10
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F94239.D	1	01/03/11	NAP	12/20/10	OP47364	EF4402
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-86-2	Acetophenone	ND	2.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	ND	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	20	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	10557.07 488 BL 5	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-2	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 488 Event		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	87%		25-112%
321-60-8	2-Fluorobiphenyl	83%		31-106%
1718-51-0	Terphenyl-d14	64%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Internal standard added for SIM test	4.09	4.8	ug/l	J
	Internal standard added for SIM test	7.82	4.2	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	10557.07 488 BL 5	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-2	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 488 Event		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M23079.D	1	12/23/10	KLS	12/20/10	OP47364A	E3M1001
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	ND	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	ND	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.0081	ug/l	
86-73-7	Fluorene	ND	0.10	0.0090	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	ND	0.10	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.0094	ug/l	
129-00-0	Pyrene	ND	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	93%		18-119%
321-60-8	2-Fluorobiphenyl	78%		18-104%
1718-51-0	Terphenyl-d14	60%		13-109%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID:	10557.08 488 BL 12	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-3	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 488 Event		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F94240.D	1	01/03/11	NAP	12/20/10	OP47364	EF4402
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-86-2	Acetophenone	ND	2.0	0.40	ng/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	ND	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	2.0	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ng/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	10557.08 488 BL 12	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-3	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 488 Event		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	82%		25-112%
321-60-8	2-Fluorobiphenyl	82%		31-106%
1718-51-0	Terphenyl-d14	55%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Internal standard added for SIM test	4.09	4.2	ug/l	J
	Internal standard added for SIM test	7.82	4	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	10557.08 488 BL 12	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-3	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 488 Event		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M23054.D	1	12/21/10	KLS	12/20/10	OP47364A	E3M1000
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	ND	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	ND	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.0081	ug/l	
86-73-7	Fluorene	ND	0.10	0.0090	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	ND	0.10	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.0094	ug/l	
129-00-0	Pyrene	ND	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	88%		18-119%
321-60-8	2-Fluorobiphenyl	80%		18-104%
1718-51-0	Terphenyl-d14	49%		13-109%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 2

Client Sample ID: 10557.09 488 BL 7
 Lab Sample ID: JA64433-4
 Matrix: AQ - Ground Water
 Method: SW846 8270C SW846 3510C
 Project: Building 488 Event

Date Sampled: 12/16/10
 Date Received: 12/17/10
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F94241.D	1	01/03/11	NAP	12/20/10	OP47364	EF4402
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-86-2	Acetophenone	ND	2.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	ND	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	20	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID: 10557.09 488 BL 7
 Lab Sample ID: JA64433-4
 Matrix: AQ - Ground Water
 Method: SW846 8270C SW846 3510C
 Project: Building 488 Event

Date Sampled: 12/16/10
 Date Received: 12/17/10
 Percent Solids: n/a

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%		25-112%
321-60-8	2-Fluorobiphenyl	84%		31-106%
1718-51-0	Terphenyl-d14	63%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Internal standard added for SIM test	4.09	4	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	10557.09 488 BL 7	Date Sampled:	12/16/10
Lab Sample ID:	JA64433-4	Date Received:	12/17/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 488 Event		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M23055.D	1	12/21/10	KLS	12/20/10	OP47364A	E3M1000
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	ND	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	ND	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.0081	ug/l	
86-73-7	Fluorene	ND	0.10	0.0090	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	ND	0.10	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.0094	ug/l	
129-00-0	Pyrene	ND	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	91%		18-119%
321-60-8	2-Fluorobiphenyl	82%		18-104%
1718-51-0	Terphenyl-d14	60%		13-109%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

**SEMI-VOLATILE
ORGANICS
(SOIL)**

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **E580.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055703**

Misc Info **BL 1 3,5-4.0**
 Dilution factor **1**
 Sample Multiplier **0.116**

Sample Weight **10.47 g**
 Percent Solids **82.4 %**

Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])

Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.115	0.58 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.195	0.58 mg/kg	
62-53-3	Aniline			not detected	NLE	0.309	0.58 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.224	0.58 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.194	0.58 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.202	0.58 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.299	0.58 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.225	0.58 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.260	0.58 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.293	0.58 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.219	0.58 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.262	0.58 mg/kg	
78-59-1	Isophorone			not detected	510	0.278	0.58 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.230	0.58 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.254	0.58 mg/kg	
91-20-3	Naphthalene			not detected	6	0.281	0.58 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.429	0.58 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.250	0.58 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.301	0.58 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.169	0.58 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.291	0.58 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.356	0.58 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.306	0.58 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.315	0.58 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.303	0.58 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.256	1.16 mg/kg	
83-32-9	Acenaphthene	13.25	406149	0.41 mg/kg	3400	0.314	0.58 mg/kg	J
132-64-9	Dibenzofuran			not detected	NLE	0.370	0.58 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.303	0.58 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.290	0.58 mg/kg	
86-73-7	Fluorene			not detected	2300	0.328	0.58 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.322	0.58 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.316	0.58 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.314	0.58 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.333	0.58 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.334	0.58 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.348	0.58 mg/kg	
85-01-8	Phenanthrene	15.40	600457	0.46 mg/kg	NLE	0.344	0.58 mg/kg	J
120-12-7	Anthracene			not detected	17000	0.347	0.58 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.332	0.58 mg/kg	
206-44-0	Fluoranthene	17.16	1196526	0.92 mg/kg	2300	0.344	0.58 mg/kg	

Semi-Volatile Analysis Report

Page 2

Data File Name E580.D
 Operator ROBERTS
 Date Acquired 5-Jan-11
 Sample Name 1055703

Misc Info BL 1 3.5-4.0
 Dilution factor 1
 Sample Multiplier 0.116
 Sample multiplier = $(0.001 * \text{Dilution factor}) / ([\text{sample weight}(\text{kg})] * [\text{percent solids}/100])$
 Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.312	1.16 mg/kg
129-00-0	Pyrene	17.49	1094933	0.79 mg/kg	1700	0.367	0.58 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.305	0.58 mg/kg
56-55-3	Benzo[a]anthracene	19.24	606297	0.50 mg/kg	0.6	0.345	0.58 mg/kg J
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.315	0.58 mg/kg
218-01-9	Chrysene	19.29	569595	0.49 mg/kg	62	0.326	0.58 mg/kg J
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.366	0.58 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.307	0.58 mg/kg
205-99-2	Benzo[b]fluoranthene	20.98	719582	0.64 mg/kg	0.6	0.248	0.58 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.298	0.58 mg/kg
50-32-8	Benzo[a]pyrene	21.65	453873	0.44 mg/kg	0.2	0.267	0.58 mg/kg J
193-39-5	Indeno[1,2,3-cd]pyrene	24.14	230549	0.24 mg/kg	0.6	0.226	0.58 mg/kg J
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.211	0.58 mg/kg
191-24-2	Benzo[g,h,i]perylene	24.81	224255	0.28 mg/kg	380000	0.214	0.58 mg/kg J

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-1 3.5-4.0

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10557

Matrix: (soil/water) SOIL Lab Sample ID: 1055703

Sample wt/vol: 10.47 (g/ml) G Lab File ID: E580.D

Level: (low/med) LOW Date Received: 12/16/2010

% Moisture: 17.6 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.66	66000	J
2.	unknown	16.11	1100	J
3.	unknown	16.17	910	J
4.	unknown	16.28	1600	J
5.	unknown	16.38	1100	J
6.	unknown	16.64	1200	J
7.	unknown	16.93	1500	J
8.	unknown	18.71	1100	J
9.	unknown PAH	18.88	980	J
10.	Alkane: Straight-Chain	18.99	1000	J
11.	Alkane: Straight-Chain	19.45	910	J
12.	Alkane: Straight-Chain	19.94	1500	J
13.	unknown	20.04	1100	J
14.	unknown	20.41	1100	J
15.	unknown	20.70	880	J
16.	unknown	20.85	1500	J
17.	Alkane: Straight-Chain	21.08	1400	J
18.	unknown	21.23	1100	J
19.	unknown	21.34	880	J
20.	unknown PAH	21.53	1300	J
21.	Alkane: Straight-Chain	22.59	1800	J
22.	unknown hydrocarbon	22.78	870	J
23.	unknown hydrocarbon	22.99	1700	J
24.	unknown hydrocarbon	23.36	1200	J
25.	unknown hydrocarbon	23.65	1400	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name E579.D
Operator ROBERTS
Date Acquired 5-Jan-11
Sample Name 1055704

Misc Info BL 10 2.0-2.5
Dilution factor 1
Sample Multiplier 0.111

Sample Weight 10.18 g
Percent Solids 88.2 %

Sample multiplier = (0.001 * Dilution factor) / ((sample weight(kg)) * [percent solids/100])
Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.110	0.56 mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.187	0.56 mg/kg	
62-53-3	Aniline			not detected	NLE	0.297	0.56 mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.215	0.56 mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.186	0.56 mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.194	0.56 mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.287	0.56 mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.216	0.56 mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.249	0.56 mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.282	0.56 mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.210	0.56 mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.252	0.56 mg/kg	
78-59-1	Isophorone			not detected	510	0.267	0.56 mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.221	0.56 mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.244	0.56 mg/kg	
91-20-3	Naphthalene			not detected	6	0.270	0.56 mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.412	0.56 mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.241	0.56 mg/kg	
91-57-6	2-methylnaphthalene			not detected	230	0.290	0.56 mg/kg	
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.163	0.56 mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.280	0.56 mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.342	0.56 mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.294	0.56 mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.303	0.56 mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.291	0.56 mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.246	1.11 mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.302	0.56 mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.355	0.56 mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.291	0.56 mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.278	0.56 mg/kg	
86-73-7	Fluorene			not detected	2300	0.315	0.56 mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.310	0.56 mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.304	0.56 mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.302	0.56 mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.320	0.56 mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.321	0.56 mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.334	0.56 mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.331	0.56 mg/kg	
120-12-7	Anthracene			not detected	17000	0.333	0.56 mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.319	0.56 mg/kg	
206-44-0	Fluoranthene			not detected	2300	0.331	0.56 mg/kg	

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Semi-Volatile Analysis Report

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Data File Name **E579.D**
 Operator **ROBERTS**
 Date Acquired **5-Jan-11**
 Sample Name **1055704**

Misc Info **BL 10 2.0-2.5**
 Dilution factor **1**
 Sample Multiplier **0.111**
 Sample weight = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),
 Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benizidine			not detected	0.7	0.300	1.11 mg/kg
129-00-0	Pyrene			not detected	1700	0.353	0.56 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.293	0.56 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.332	0.56 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.303	0.56 mg/kg
218-01-9	Chrysene			not detected	62	0.313	0.56 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.352	0.56 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.295	0.56 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.238	0.56 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.286	0.56 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.256	0.56 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.217	0.56 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.203	0.56 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.206	0.56 mg/kg

* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

BL-10 2.0-2.5

Lab Name: FMETL Lab Code 13461

Project: _____ Case No.: _____ Location: 488 SDG No.: 10557

Matrix: (soil/water) SOIL Lab Sample ID: 1055704

Sample wt/vol: 10.18 (g/ml) G Lab File ID: E579.D

Level: (low/med) LOW Date Received: 12/16/2010

% Moisture: 11.8 decanted: (Y/N) N Date Extracted: 12/20/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/5/2011

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 8 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.65	62000	J
2.	Alkane: Branched	18.99	750	J
3.	extraction by-product	19.19	980	J
4.	Alkane: Straight-Chain	19.93	860	J
5.	unknown PAH	20.98	780	J
6.	Alkane: Straight-Chain	21.07	840	J
7.	unknown PAH	21.52	770	J
8.	Alkane: Straight-Chain	22.58	1200	J