United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 417
Main Post-East Area

NJDEP UST Registration No. 90010-33
DICAR No. 96-11-14-0922-14

January 2000

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 417

MAIN POST-EAST AREA
NJDEP UST REGISTRATION NO. 90010-33
DICAR NO. 96-11-14-0922-14

JANUARY 2000

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
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UST Closure

On November 13, 1996, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) closure procedures at the Main Post-East area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0090010-33 (Fort Monmouth ID No. 417), was located northeast of Building 417. UST No. 0090010-33 was a 1,080 gallon #2 fuel oil UST.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.* The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation.* Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST. Stained soil was observed and appeared to be contaminated. The NJDEP hotline was notified and the case was assigned DICAR No. 96-11-14-0922-14. Approximately 11 cubic yards of potentially contaminated soil were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 250.90 mg/kg. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater.

All post excavation soil samples collected from the UST excavation at Building 417 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of sheen on groundwater, two (2) groundwater samples were collected at Building 417. On October 16, 1999, and December 4, 1999, Building 417 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 90010-33 at Building 417.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90010-33, was closed at Building 417 at the Main Post-East area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on November 13, 1996. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The UST was a steel 1,080-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 90010-33 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 90010-33 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The signed Site Assessment Summary form for UST No. 90010-33 is included in Appendix A.

After removal of the potentially contaminated soil, the site was assessed. Based on inspecting the UST, field screening of remaining subsurface soils, and reviewing analytical results of soil samples and groundwater samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

This UST Closure and Site Investigation Report has been prepared by Versar, to assist the U.S. Army DPW in complying with the NJDEP regulations. The applicable NJDEP regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling and groundwater investigation, are presented in the final section of this report.

1.2 SITE DESCRIPTION

Building 417 is located in the Main Post-East area of the Fort Monmouth Army Base. UST No. 0090010-33 was located northeast of Building 417 and appurtenant copper piping ran approximately three (3) feet west from the excavation to Building 417. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 417. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area. A geological map is provided on Figure 1A.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine

grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Main Post area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 417 is located approximately 300 feet south of Parkers Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 417 is anticipated to be to the north.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- The contractor performing the closure prior to excavation activities identified all underground obstructions (utilities, etc.).
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 75 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Co. Inc to the Lionetti Oil Recovery Co. Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were noted in the UST during the inspection by the Sub-Surface Evaluator. Stained soil was observed and appeared to be contaminated. Approximately 11 cubic yards of potentially contaminated soil were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area. Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 250.90 mg/kg. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported in compliance with all applicable regulations and laws to Mazza and Sons, Inc. Please refer to Appendix D for the UST Disposal Certificate and Appendix G for photographs of the tank.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Former contents
- Destination site
- Date

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, approximately 11 cubic yards of potentially contaminated soil were removed from the UST excavation. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. The Fort Monmouth DPW Environmental Office maintains all records of the Site Investigation activities.

The following Parties participated in Closure and Site Investigation Activities:

- Project Manager: Eugene Lesinski
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 14537

- Analytical Laboratory: U.S.Army Fort Monmouth Environmental laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (908) 532-4359
  NJDEP Company Certification No.: 13461

- Hazardous Waste Hauler: Lorco Petroleum Services
  Contact Person: Don Taguinot
  Phone Number: (908) 721-0900

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Approximately 11 cubic yards of potentially petroleum contaminated soil were removed from the excavated area and transported to the Fort Monmouth petroleum contaminated soil holding area. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was encountered at 4.0 feet below ground surface and sheen was observed on groundwater.

2.3 SOIL SAMPLING

On November 15, 1996, following the removal of the UST and associated piping, post-excavation soil samples A, B, C, D, E, F, G, H, I, and DUP A were collected from a total of nine (9) locations of the UST excavation. Sidewall samples A, B, C, D, E, F, and DUP A were collected at a depth of 3.5 feet bgs. Samples H and I were collected along the excavation floor at a depth of 6.0 feet bgs. Piping sample G was collected at a depth of 1.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

DPW personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

2.4 GROUNDWATER SAMPLING

On October 16,1999, and December 4, 1999, Building 417 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.* Refer to Appendix F for the field sampling documentation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected on November 15, 1996 from a total of nine (9) locations. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on November 15, 1996, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 250.90 mg/kg.

3.2 GROUNDWATER SAMPLING RESULTS

The sample collected from Building 417 on October 16, 1999, contained acenaphthene at 1.32 ug/l and phenanthrene at 1.81 ug/l. No other compounds were detected.

The sample collected from Building 417 on December 4, 1999, contained phenanthrene at 1.36 ug/l. No other compounds were detected.

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 3 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

Groundwater samples collected on October 16, 1999, and December 4,1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 417 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soil with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected at Building 417 on October 16, 1999, and December 4, 1999, groundwater quality at Building 417 was either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 90010-33 at Building 417.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 417, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	11/15/96	11/18/96	Soil	Post-excavation	TPHC	OQA-QAM-025
G	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
H	11/15/96	11/18/96	Soil	Post-Excavation	TPHC	OQA-QAM-025
I	11/15/96	11/18/96	Soil	Post-excavation	TPHC	OQA-QAM-025
DUPA	11/15/96	11/18/96	Soil	Post-excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 417, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4859.01	10/16/99	10/19/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4859.02	10/16/99	10/19/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4859.01	10/16/99	10/19/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4983.01	12/4/99	12/6/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:
*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds
*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds
**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 417, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/3.5'=	2214.1	11/15/96	11/18/96	Total Solid	--	--	85.3 %	--	--
				TPHC	200	yes	ND	10,000	No
B/3.5'=	2214.2	11/15/96	11/18/96	Total Solid	--	--	81.3 %	--	--
				TPHC	200	Yes	ND	10,000	No
C/3.5'=	2214.3	11/15/96	11/18/96	Total Solid	--	--	80.1 %	--	--
				TPHC	200	Yes	ND	10,000	No
D/3.5'=	2214.4	11/15/96	11/18/96	Total Solid	--	--	19.7 %	--	--
				TPHC	200	yes	ND	10,000	No
E/3.5'=	2214.5	11/15/96	11/18/96	Total Solid	--	--	83.2 %	--	--
				TPHC	200	yes	ND	10,000	No
F/3.5'=	2214.6	11/15/96	11/18/96	Total Solid	--	--	78.4 %	--	--
				TPHC	200	Yes	ND	10,000	No
G/1.0'=	2214.7	11/15/96	11/18/96	Total Solid	--	--	89.8 %	--	--
				TPHC	200	yes	ND	10,000	No
H/6.0'=	2214.8	11/15/96	11/18/96	Total Solid	--	--	81.6 %	--	--
				TPHC	200	yes	250.9	10,000	No
I/6.0'=	2214.9	11/15/96	11/18/96	Total Solid	--	--	79.9 %	--	--
				TPHC	200	yes	ND	10,000	No
DUPA/3.5'=	2214.10	11/15/96	11/18/96	Total Solid	--	--	84.7 %	--	--
				TPHC	200	yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

TPHC Total Petroleum Hydrocarbons

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 10/16/99 Location: 417 Lab Sample ID: 4862.01(417)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 10/16/99 Location: 417 Lab Sample ID: 4862.01(417)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 10/16/99 Location: 417 Lab Sample ID: 4862.01(417)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	2.03	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	1.01	Not Detected	--	20	no
62-53-3	Aniline	1.81	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.42	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.32	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.32	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.13	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.25	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.54	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.54	Not Detected	--	20	no
67-72-1	Hexachloroethane	1.67	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.08	Not Detected	--	10	no
78-59-1	Isophorone	1.12	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.34	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.35	Not Detected	--	9	no
91-20-3	Naphthalene	1.41	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.21	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.79	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.20	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.47	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.12	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.88	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.69	Not Detected	--	7000	no
208-96-8	Acenaphthylene	1.07	Not Detected	--	nle	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 10/16/99 Location: 417 Lab Sample ID: 4862.01(417)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.90	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.88	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.22	1.32 ug/L	--	400	no
132-64-9	Dibenzofuran	1.11	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.97	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.80	Not Detected	--	5000	no
86-73-7	Fluorene	1.10	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.22	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.17	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.12	Not Detected	--	20	no
103-33-3	Azobenzene	0.74	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.84	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	1.04	Not Detected	--	10	no
85-01-8	Phenanthrene	1.37	1.81 ug/L	--	nle	no
120-12-7	Anthracene	1.24	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.89	Not Detected	--	900	no
206-44-0	Fluoranthene	1.82	Not Detected	--	300	no
92-87-5	Benzidine	4.64	Not Detected	--	50	no
129-00-0	Pyrene	1.39	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.17	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.32	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.94	Not Detected	--	60	no
218-01-9	Chrysene	1.53	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.93	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.60	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.39	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.43	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.17	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.92	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.71	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.93	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 12/4/99 Location: 417 Lab Sample ID: 4983.01(417-1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 12/4/99 Location: 417 Lab Sample ID: 4983.01(417-1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 12/4/99 Location: 417 Lab Sample ID: 4983.01(417-1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1.83	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.91	Not Detected	--	20	no
62-53-3	Aniline	1.63	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.28	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.19	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.02	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.02	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.13	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.39	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.50	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.97	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.01	Not Detected	--	10	no
78-59-1	Isophorone	1.21	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.75	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.22	Not Detected	--	9	no
91-20-3	Naphthalene	1.27	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.09	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.71	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.08	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.32	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.01	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.79	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.52	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.96	Not Detected	--	nle	no

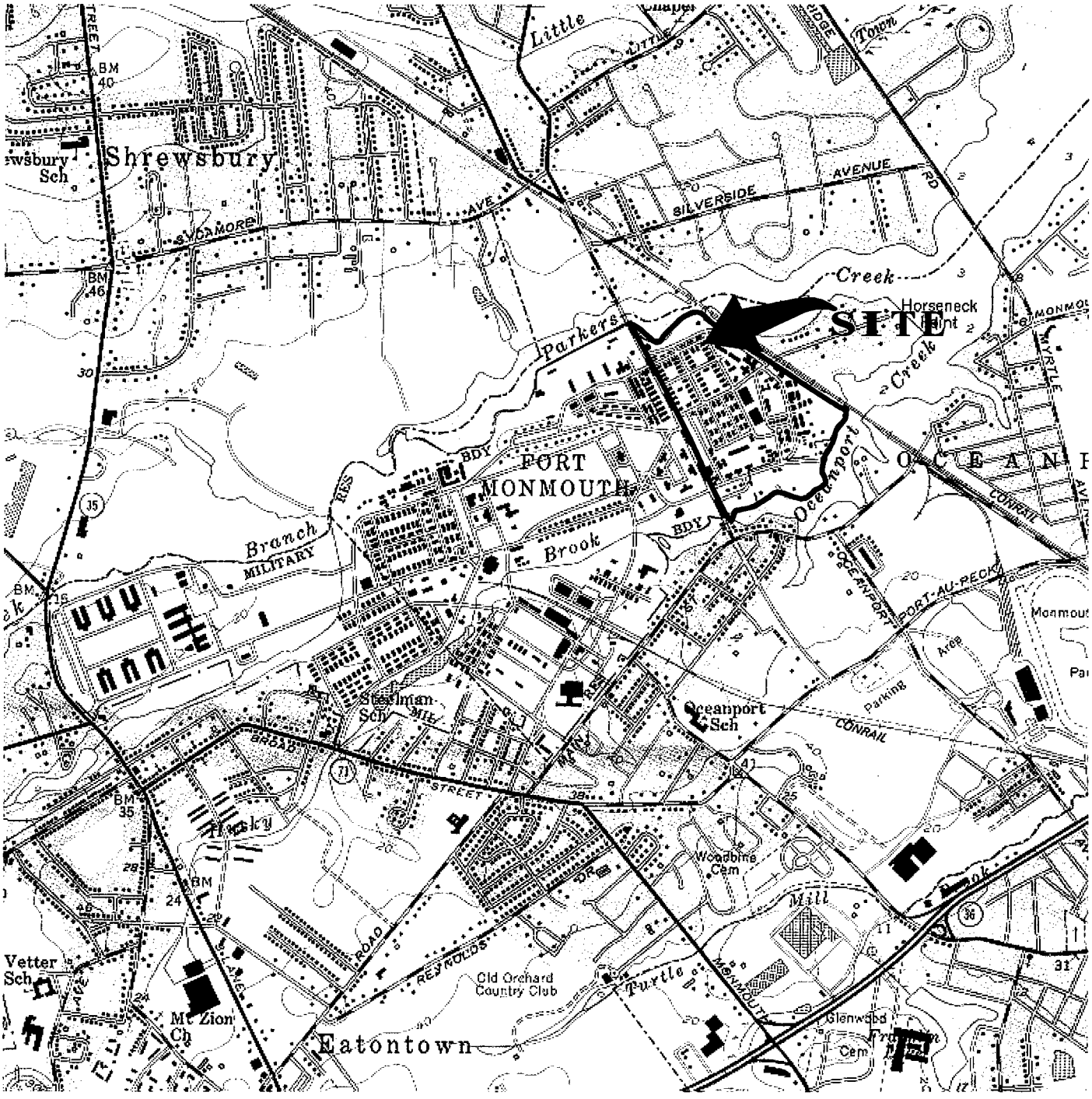
Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

Date Sampled: 12/4/99 Location: 417 Lab Sample ID: 4983.01(417-1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	--	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	--	10	no
85-01-8	Phenanthrene	1.23	1.36 ug/L	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	--	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

LOCATION MAP
Building 417
Main-Post East
Fort Monmouth Army Base
Monmouth County, NJ

VERSAR
Engineers, Managers, Scientists, & Planners
Bristol, PA

Scale: 1" = 2000'

Date: NOV 1996

Geologic Map of New Jersey

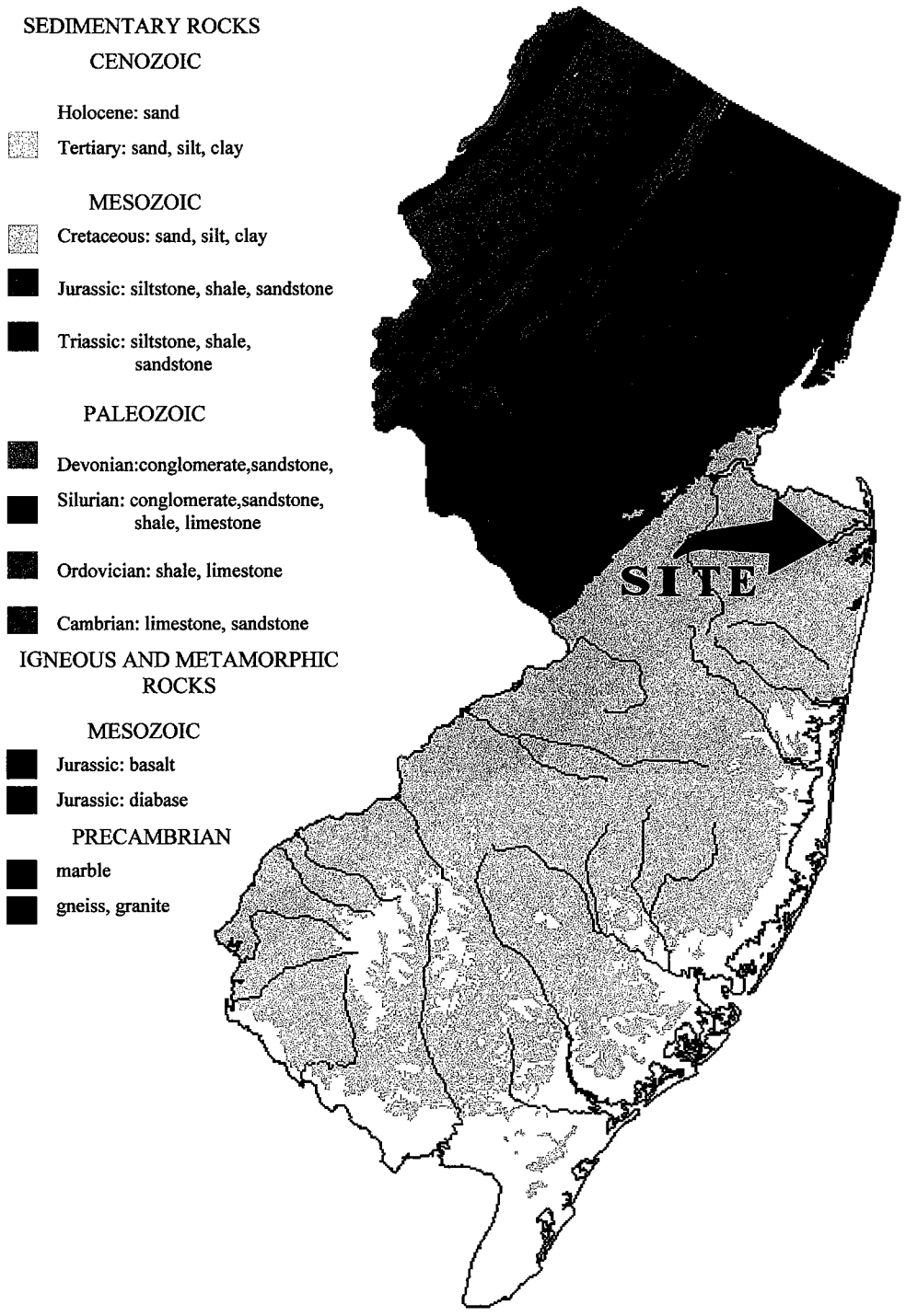


FIGURE 1A
GEOLOGICAL MAP
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

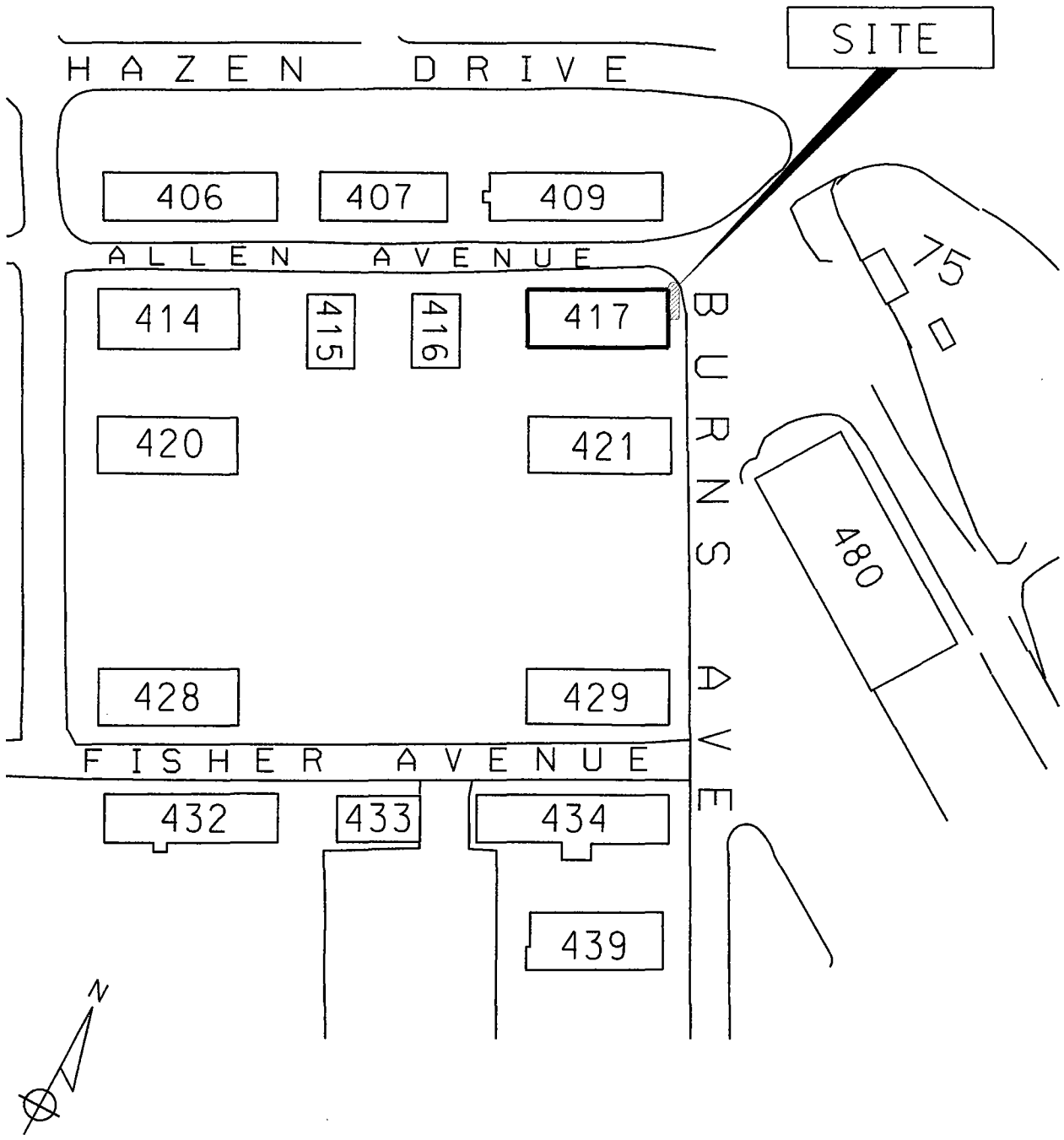


FIGURE 2
SITE MAP
BUILDING 417
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=100'

DATE: NOV 1996

417 FIG2

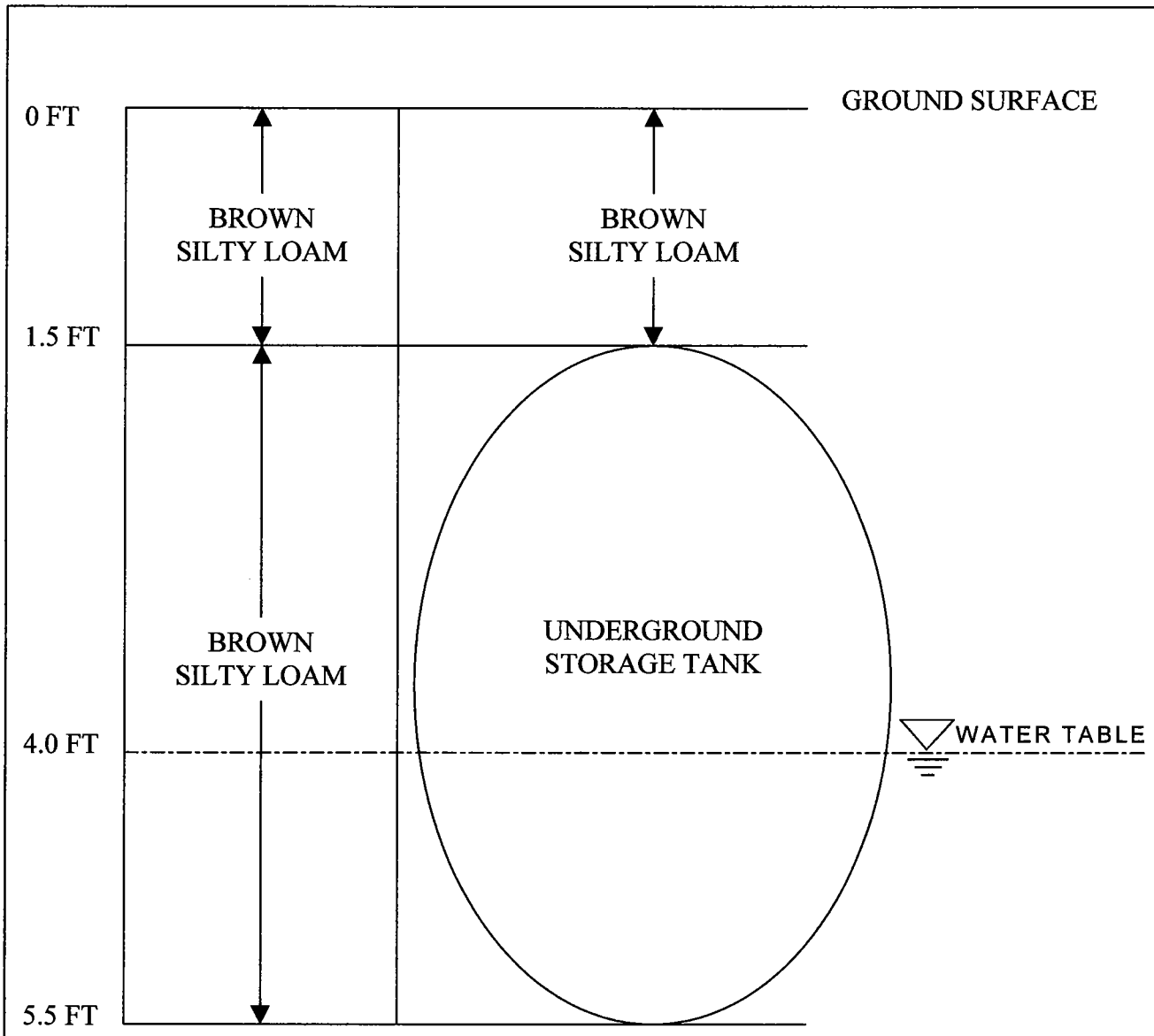
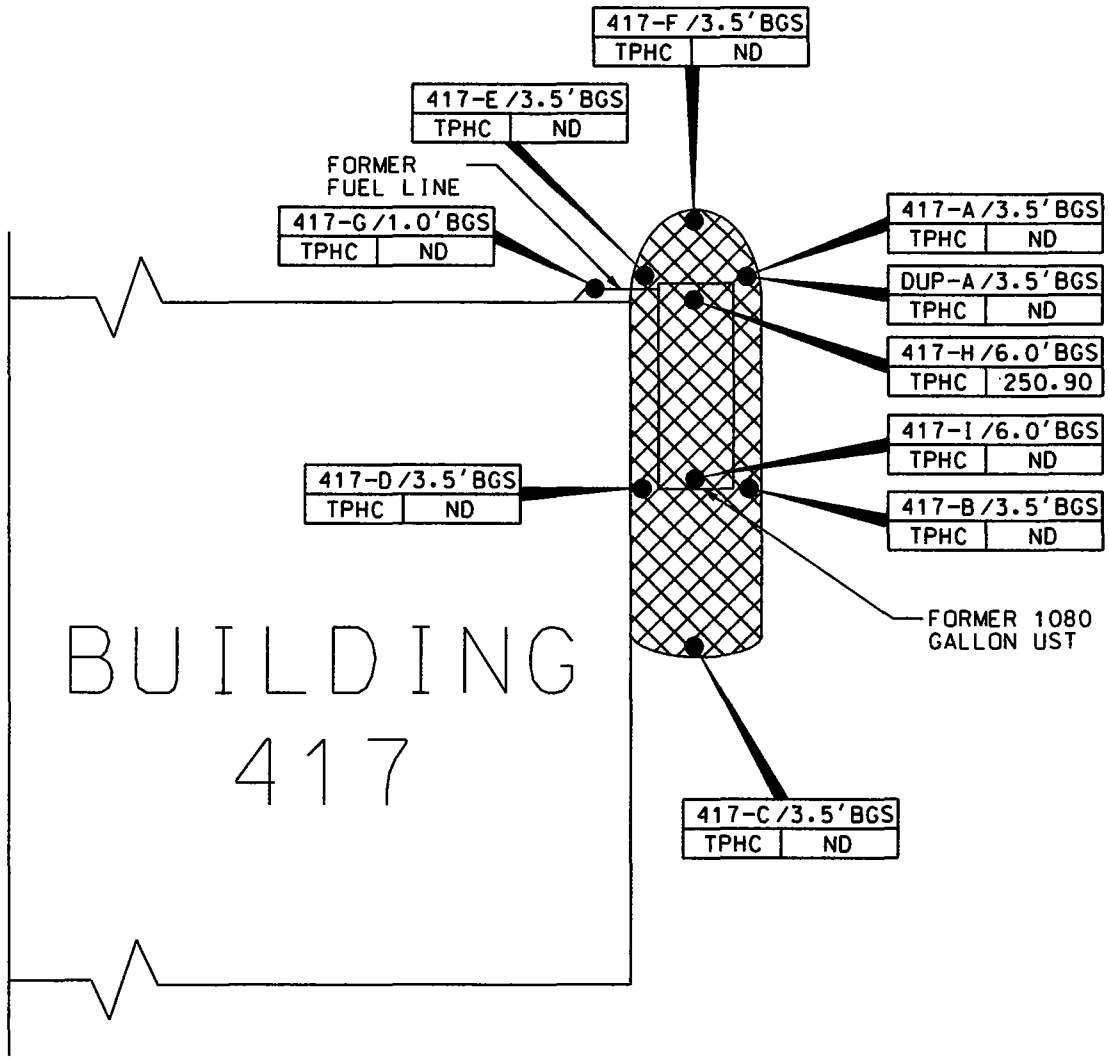


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 417
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

SCALE: NTS	DATE: NOV 1996



LEGEND

- SOIL SAMPLE LOCATION (NOVEMBER 15, 1996)
- LIMIT OF EXCAVATION (NOVEMBER 15, 1996)

NOTES:

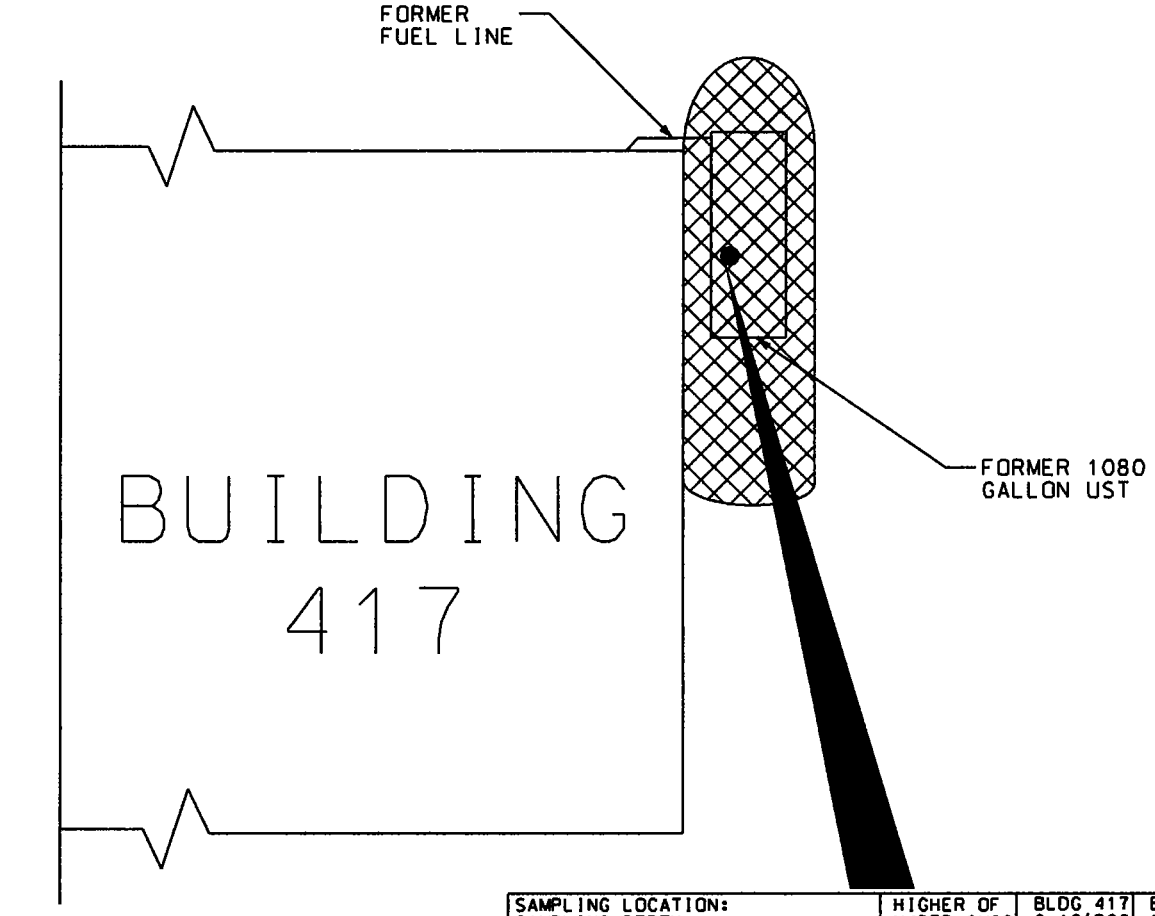
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 417
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10' | DATE: NOV 1996

417 FIG4



SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWQS AND POL	BLDG 417 6-10'BGS 10/16/99	BLDG 417 6-11'BGS 12/4/99
VOLATILE ORGANIC COMPOUNDS:		ND	ND
SEMIVOLATILE ORGANIC COMPOUNDS:			
ACENAPHTHENE:	400 UG/L	1.33 UG/L	ND
PHENANTHRENE:	NLE	1.81 UG/L	1.36 UG/L

LEGEND

● GROUNDWATER SAMPLE LOCATION (OCTOBER 16, 1999 AND DECEMBER 4, 1999)

LIMIT OF EXCAVATION (NOVEMBER 15, 1996)

NOTES:

1. ND=INDICATES COMPOUND NOT DETECTED
2. NLE= NO LIMIT ESTABLISHED
3. ALL RESULTS IN UG/L
4. BGS = BELOW GROUND SURFACE

FIGURE 5
GROUNDWATER SAMPLING MAP
BUILDING 417
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10' | DATE: NOV 1996

417 FIG4

APPENDIX A

SITE ASSESSMENT SUMMARY

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey

Facility Street Address : Directorate of Public Works Building 173

Municipality: Oceanport County : Monmouth

Block: Lot(s): Telephone Number : 732-532-6224

B. Owner (RP)'s Name:

Street Address: City :

State: Zip: Telephone Number :

C. (Check as appropriate)

___ Site Investigation Report (SIR) $500 Fee

___ Remedial Investigation Report (RIR) $1000 Fee

_X_ NA – Federal Agreement

D. (Complete all that apply)

- Assigned Case Manager : Ian Curtis, Federal Case Manager
- UST Registration Number : 90010-33 (7 digits)
- Incident Report Number 96 – 11 – 14 – 0922 – 14 (10 or 12 digits)

___ – ___ – ___ – _____ – ___

- Tank Closure Number : Federal Case Manager

E. Certification by the Subsurface Evaluator:

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E .....Yes No

Name: Eugene Lesinski Signature: See signed subsurface removal log UST Cert. No.: 14537

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA-U.S. Army

Firm Address: Directorate of Public Works Building 173 City: Fort Monmouth

State: NJ Zip: 07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature: James Ott

Company Name: U.S. Army Fort Monmouth Date: 7/31/00

APPENDIX B

WEIGH TICKETS

S.C.M.I. - BOUND BROOK

CUSTOMER'S COPY

CONTROL NO.
A-1250096

Stavola Construction Materials, Inc.

PLANT: CHIMNEY ROCK ROAD, BOUND BROOK, N.J. • 908/356-5700

X _____
DRIVER'S SIGNATURE

RECEIVED & ACCEPTED BY:
X _____
CUSTOMER'S SIGNATURE

CRUSHED STONE • SAND • GRAVEL

EXECUTIVE OFFICE
HAMILTON ROAD
TINTON FALLS, N.J.
908/542-2328

ADDRESS REPLY TO
P.O. BOX 482
RED BANK, N.J. 07701

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

EXPLANATION OF DELIVERY CODES
1 - F.O.B.
2 - DELIVERED
3 - NET DELIVERED

DATE	CUST. NO.	JOB NO.	TICKET NO.
11/14/96	60075	R9602064 10:49	250096

CUSTOMER
TECOM - VINNELL SERVICE
FORT MONMOUTH

DELIVER TO
ZONE:FT MONMOUTH
P.O. NUM R9700335
BLDG 417
ALLEN AND BURNS AVE
EAST SIDE OF OCEANPORT AVE

GROSS 39.80
TARE 14.90
NET 24.90

TRUCKER	TRUCK NO.	DRIVER NO.	METHOD OF PAYMENT	DELIVERY CODE	ZONE
09685	2		CHARGE	2	030

QUANTITY	PRODUCT CODE/DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	EXTENDED	FREIGHT	SALES TAX	TOTAL
24.90	11 1 1/2" CLEAN STO	T			4.85		

COMMENTS
Load #1 of 2
LOADS X
ACCU. TONS 106.04

WAIT TIME

GRAND TOTAL

S.C.M.I. - BOUND BROOK

CUSTOMER'S COPY

CONTROL NO. A-1250179

STAVOLA

Stavola Construction Materials, Inc.

PLANT: CHIMNEY ROCK ROAD, BOUND BROOK, N.J. 908/356-5700

RECEIVED & ACCEPTED BY:

X [signature] DRIVER'S SIGNATURE

X [signature] CUSTOMER'S SIGNATURE

CRUSHED STONE • SAND • GRAVEL

EXECUTIVE OFFICE
HAMILTON ROAD
TINTON FALLS, N.J.
908/542-2328

ADDRESS REPLY TO
P.O. BOX 482
RED BANK, N.J. 07701

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

EXPLANATION OF DELIVERY CODES
1 - F.O.B.
2 - DELIVERED
3 - NET DELIVERED

DATE	CUST. NO.	JOB NO.	TICKET NO.
11/14/96	60075	B9602064 12:56	250179

CUSTOMER:
TECOM - VINNELL SERVICE
FORT MONMOUTH

DELIVER TO:
ZONE: FT MONMOUTH
P.O. NUM B9700335
BLDG 417
ALLEN AND BURNS AVE
EAST SIDE OF OCEANPORT AVE

GROSS: 39.33
TARE: 13.15
NET: 26.18

TRUCKER	TRUCK NO.	DRIVER NO.	METHOD OF PAYMENT	DELIVERY CODE	ZONE
31000	16		CHARGE	2	030

QUANTITY	PRODUCT CODE/DESCRIPTION	UNIT OF MEASURE	UNIT PRICE	EXTENDED	FREIGHT	SALES TAX	TOTAL
26.18	11 1 1/2" CLEAN STO	T			4.35		

COMMENTS: Load #2 of 2 57.08 tons

WAIT TIME

LOADS ACCU. TONS
~~5~~ ~~132.22~~

GRAND TOTAL

11-15-96 Date

R-97-00336 Cust. Phone

JOHN GUIRE CO.
187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

Driver On 05484 Off _____

Customer's Name TECOM - VIMMEL SERVICES

Address FT. MONMOUTH
BLD 417

Product BANK RUN SAND | Price Per Ton 5.00

DATE TIME

69920
25000
TONS: 44920

Gross lb.
Tare lb.
Net lb.

Special Instructions CORN. ALLEN + BURNS AVE 22.46

SEE GARY DELMANTINE FIRST LOAD 317.00

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

Rec'd By _____

Weigher _____

Supplies

Price _____

Tax 11 742-768-399-000

Sub Total _____

Del. Chg. _____

TOTAL _____

Other Products Always Available

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

CUSTOMER COPY

11-15-96 Date

12-97-00336 Cust. Phone

JOHN GUIRE CO.

187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

05485

Driver On ________ Off ________

Customer's Name TECOM - VINNELL SERVICES

Address FT. MONMOUTH
BLD. 417

Product Bank Run Sand   Price Per Ton 5.00

DATE	TIME		
		68,900	
		25,000	Gross lb.
		Tons 43,900	Tare lb.
			Net lb.
		21.95	

Special Instructions

Supplies

Price ________

Tax 712-768-391-000

Sub Total ________

Del. Chg. ________

TOTAL ________

Other Products Always Available

- **Fuel Oil**
- **Hardware**
- **Lawn & Garden Supplies**
- **Mulch**
- **Top Soil & Fill Dirt**
- **Wall Stone**
- **Cobble Stone**
- **Railroad Ties**

Rec'd By [signature]

Weigher ________

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

CUSTOMER COPY

11-15-96 | R-97-00336

Date | Cust. Phone

JOHN GUIRE CO.

187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740

908-222-0612 • FAX 908-222-8126

05486

Driver On ________ Off ________

Customer's Name: TECOM - VINNELL SERVICES

Address: FT MONMOUTH

BLD. 417

Product: Bank Run Sand | Price Per Ton: 5.00

Supplies

Price ________

Tax 712-768-379-000

Sub Total ________

Del. Chg. ________

TOTAL ________

DATE	TIME		
		67,700	
		25,000	Gross lb.
		TONS 42,700	Tare lb.
			Net lb.

Special Instructions

21.35 TONS

Other Products Always Available

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

Rec'd By [signature]

Weigher ________

CUSTOMER COPY

11-15-96 — Date
12-97-00336 — Cust. Phone

JOHN GUIRE CO.

187 BRIGHTON AVE. • LONG BRANCH, N.J. 07740
908-222-0612 • FAX 908-222-8126

05487

Driver On ______ Off ______

Customer's Name: TECOM - VINNELL SERVICES

Address: FT. MONMOUTH
312 417

Product: Bank Run Sand — Price Per Ton: 5.00

Supplies

Price ______

Tax 712-763-399-000

Sub Total ______

Del. Chg. ______

TOTAL ______

DATE	TIME		
		68,400	
		25,000	Gross lb.
		Tons 43.400	Tare lb.
			Net lb.
		21.70 TONS	

Special Instructions

Other Products Always Available

- Fuel Oil
- Hardware
- Lawn & Garden Supplies
- Mulch
- Top Soil & Fill Dirt
- Wall Stone
- Cobble Stone
- Railroad Ties

All delivered prices are for street curb delivery, except where the curb and sidewalk are entirely bridged and protected and a suitable road provided to actual point of unloading inside of curb. We will assume no responsibility for any damages where delivery is made inside of curb.

Rec'd By [signature]

Weigher ______

CUSTOMER COPY

APPENDIX C

WASTE MANIFEST

10191

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJ3210020597
Manifest Document No.: 377
2. Page 1 of 1

3. Generator's Name and Mailing Address
U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND
MAIN POST C/O JOSEPH FALLON BLDG 173 ATTN:SELFM-PW-EV
4. Generator's Phone (FORT)MONMOUTH NJ 07703 (908)532-6223

5. Transporter 1 Company Name: LIONETTI OIL RECOVERY CO INC.
6. US EPA ID Number: NJD084044064
(908)721-0900

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
LIONETTI OIL RECOVERY CO INC
RUNYON & CHEESEQUAKE ROADS
OLD BRIDGE NJ 08857
10. US EPA ID Number: NJD084044064
A. Transporter's Phone
B. Transporter's Phone
C. Facility's Phone (908)721-0900

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. PETROLEUM OIL (petrooleum OIL) COMBUSTIBLE LIQUID UN 1270 PG III	001	TT	X1000	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
T,L PETROLEUM OIL 50%
WATER 50%

E. Handling Codes for Wastes Listed Above
T04-FILTRATION

15. Special Handling Instructions and Additional Information
DECAL# 73623
24 HOUR EMERGENCY RESPONSE #(908)721-0900
ERG#128 DEXSIL TEST KIT RESULTS <1000 PPM

Tracking Purposes Only

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting/proper disposal of Hazardous Waste.
Printed/Typed Name: Eugene Lesinski
Signature: Eugene Lesinski
Month: 11 Day: 19 Year: 96

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DON TAGUINOT
Signature: Don Taguinot
Month: 11 Day: 19 Year: 96

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: PAUL J. AMABIO
Signature
Month: 11 Day: 19 Year: 96

12-BLS-C5 Rev. 4/94

ORIGINAL – RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

417

MAZZA & SONS, INC.
Metal Recyclers
Auto and Truck
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

NO. 2954

DATE 26Aug96

Customer's Name T-com

Address

Make of Autos

B.417

15920 LB

13280 LB

2640

Tires

Tank

Price:

	Weight	Pric
Cast Iron		
Steel Tank		79.20
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

Weigher

Customer [signature]

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

CHAIN-OF-CUSTODY

P.O. #: PWS-07

DICAD #96-11-14-0922-14

Project #:

Customer: GENE LESINSKI SELFM-PW-EV

Phone: (908) 532-0989

Sampler: Gary DiMartinis - TVS

Date / Time: 11-15-96 1100

Site Name: BUILDING #417

Analysis Parameters: TPHC & Solids, Muinsel, OVA

Start:

Finish:

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	OVA	Remarks	Preservation Method
2214-1	11-15-96 1132	417-A (SIDEWALL @ 3.5')	SOIL	1	ND		*
-2	1122	417-B			ND	* = SAMPLES	
-3	1308	417-C			ND	KEPT BELOW	
-4	1404	417-D			ND	4°C.	
-5	1359	417-E			ND		
-6	1327	417-F			ND		
-7	1320	417-G (Piping Run @ 1.0')			ND		
-8	1341	417-H (EXC. FLOOR @ 6.0')			ND		
-9	1346	417-I "			ND		
-10	—	417-DUP (FIELD DUPLICATE)			—		

NOTE: OVA CALIBRATED TO 95 PPM METER READING W/ 95 PPM CH4 & ZERO (0) AIR BY G. DiMartinis @ NOS

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
[signature]	11-15-96 1550	[signature]	HAND on 11-15-96 (SERIAL #A52114)
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. DEDICATED SAMPLING TOOLS USED. SEE PROJECT FILE FOR SAMPLING LOCATIONS

Environmental Laboratory

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

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab. ID #: 2214.1-10
Sample Rec'd: 11/15/96
Analysis Start: 11/18/96
Analysis Comp: 11/22/96

Analysis: OQA-QAM-025
Matrix: Soil
Analyst: S. Wegeman
Ext. Meth: Shake

NJDEP UST Reg.#:
Closure #:
DICAR #:
Location #: Bldg. 417

Lab ID	Description	OVA	%Solid	MDL (mg/Kg)	Surrogates % Recovery	Result (mg/Kg)
2214.1	417-A (SIDEWALL @3.5')	ND	85.3	200	92.2 / 108.6	ND
2214.2	417-B (SIDEWALL @3.5')	ND	81.3	200	90.5 / 97.7	ND
2214.3	417-C (SIDEWALL @3.5')	ND	80.1	200	97.6 / 104.8	ND
2214.4	417-D (SIDEWALL @3.5')	ND	19.7	200	101.6 / 106.1	ND
2214.5	417-E (SIDEWALL @3.5')	ND	83.2	200	108.5 / 113.6	ND
2214.6	417-F (SIDEWALL @3.5')	ND	78.4	200	107.4 / 112.7	ND
2214.7	417-G (PIPING RUN @ 1.0')	ND	89.8	200	100.5 / 104.4	ND
2214.8	417-H (EXC. FLOOR @6.0')	ND	81.6	200	116.7 / 121.6	250.9
2214.9	417-I (EXC. FLOOR @6.0')	ND	79.9	200	120.4 / 126.1	ND
2214.10	417-DUP (FIELD DUPLICATE)	NA	84.7	200	104.3 / 108.4	ND
	Method Blank	NA	100	200	95.9 / 103.5	ND

QC: 2214.1MS=108.2%, 2214.1MSD=109.9%, RPD=1.6%
QC Limits: Surrogate: 50% - 165%
MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit
NA = Not Applicable
* = Matrix Interference

Daniel K. Wright
Laboratory Director

Methodology Summary

Aqueous Methodologies:	Ref 1	Ref 2	Ref 3	Ref 5
BNA, Pesticides/PCB's Extraction		3510/3520		
AA/ICP Sample Preparation	200.7			
Furnace Sample Preparation	200.0			
Mercury Sample Preparation	245.1			
Haxavalent Chromium Sample Preparation	218.5			
Clean-up		3610/3620/3630 3640/3660		
Organochlorine Pesticide and PCB by GC			608	505
Herbicides by GC			362	515.1
Purgeable Organics by GC/MS			624	524.2
Base/Neutral, Acids by GC/MS			625	525
2,3,7,8-TCDD by GC/MS			613/625	
BTEX			602	502.2
EDB/DBCP by Microextraction				504.1

Non-Aqueous Methodologies:	
BNA, Pesticides/PCB's Extraction	3550
AA/ICP Sample Preparation	3050
Furnace Sample Preparation	3020/3030/3050
Mercury Sample Preparation	7471
Clean-up	3610/3620/3630 3640/3660
GC, GC/MS:	
Purgeable Organics	8240/8021
Base/Neutral and Acid Extractables	8270
Organophosphorus Pesticides	8140
Organochlorine Pesticide and PCB by GC	8080
BTEX	8020
Halogenated Purgeable Organics	8010
Total Petroleum Hydrocarbon **	

Ref 1. USEPA-600/4-79-020, Methods for Chemical Analysis of Water and Waste

Ref 2. USEPA SW846, Test Methods for Evaluating Solid Waste, Third Edition

Ref 3. Federal Register 40 CFR Part 136, Vol. 49, No. 209: Test Parameters for the Analysis of Pollutants.

Ref 4. Federal Register Vol. 51, No. 216, Friday, 11/7/86, pp. 40643-40652

Ref 5. Method for the Determination of Organic Compounds in Drinking Water, EPA 500/4-88/039, Dec. 1988.

Ref 6. Standard Methods for the Examination of Water and Wastewater, 18th Ed.

** NJDEP OQA-QAM 025 10/91: Quantitation of Semi-Volatile Petroleum Products in Water, Soil, Sediment and Sludge

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.		✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank. _____ _____	✓	
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). _____ _____		✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). _____ _____		✓
5. IR Spectra submitted for standards, blanks, & samples	N/A	
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.		✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample) _____ _____		✓

Additional Comments: _____
_____
_____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

APPENDIX F

GROUNDWATER ANALYTICAL DATA PACKAGE

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, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: UST Program

Bldg. 417

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	4859.01	Aqueous	16-Oct-99	11/18/99
Field Blank	4859.02	Aqueous	16-Oct-99 08:45	11/18/99
417-6-10'	4862.01	Aqueous	16-Oct-99 11:00	11/18/99

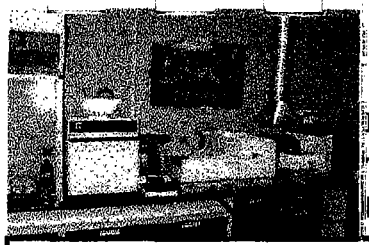
ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

4-7-00
Daniel Wright/Date
Laboratory Director

Table of Contents

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: C. APPLEBY / VERSAR
Phone #: 26623
( )DERA (✓)OMA ( )Other:_____
Project No:
Location: BLDG. 417
Samplers Name / Company: MARK / LAURA - TVS - AUS 07

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	XYLENE	BN+15						Remarks / Preservation Method
*4802.1	417 - 6-10'	10-16-99	1100	AQ.	3	X	X	X						HCL / 4°C

Comments: NO INSTR.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Matthew	10/18/99 1415				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 3 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: SHARED TB / FB w/ BLDG. 412 10-16-99

print legibly

Coc.xls9/29/99

METHODOLOGY SUMMARY

Methodology Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5 ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to a measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene Chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate Yes, No, N/A

1. Chromatograms labeled/Compounds identified (Field samples and method blanks) — Yes

2. Retention times for chromatograms provided — Yes

3. GC/MS Tune Specifications

   a. BFB Meet Criteria — Yes
   b. DFTPP Meet Criteria — Yes

4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series — Yes

5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series — Yes

6. GC/MS Calibration requirements

   a. Calibration Check Compounds Meet Criteria — Yes
   b. System Performance Check Compounds Meet Criteria — Yes

7. Blank Contamination – If yes, List compounds and concentrations in each blank: — NO

   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction_____

8. Surrogate Recoveries Meet Criteria — Yes

   If not met, list those compounds and their recoveries, which fall outside the acceptable range:

   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction_____

   If not met, were the calculations checked and the results qualified as "estimated"? _____

9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range) — Yes

   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction_____

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — Yes
(If not met, list those compounds, which fall outside the acceptable range)

    a. VOA Fraction_____
    b. B/N Fraction_____
    c. Acid Fraction_____

11. Extraction Holding Time Met — Yes

If not met, list the number of days exceeded for each sample:_____

12. Analysis Holding Time Met — yes

If not met, list the number of days exceeded for each sample:_____

Additional Comments:

Laboratory Manager: _____ Date: 4-7-00

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4862 Site: Bldg. 417

	Date	Hold Time
Date Sampled	10/16/99	NA
Receipt/Refrigeration	10/18/99	NA
Extractions		
1. Base Neutrals	10/19/99	7 Days
Analyses		
1. Volatile Organics	10/25/99	14 Days
2. Base Neutrals	10/22,23/99	40 Days

* Samples taken on Saturday and refrigerated. Laboratory received the samples on Monday 10/18/99

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL	: Method Detection Limit
J	: Compound identified below detection limit
B	: Compound in both sample and blank
D	: Results from dilution of sample
U	: Compound searched for but not detected
E	: Compound exceeds calibration limit

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

Data File	VC001059.D	Sample Name	Vblk35
Operator	Skelton	Field ID	Vblk35
Date Acquired	25 Oct 1999 12:01 pm	Sample Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk35**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4862 Location: 417 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Vblk35

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001059.D

Level: (low/med) LOW Date Received: 10/18/99

% Moisture: not dec. Date Analyzed: 10/25/99

GC Column: RTX502. 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

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

Data File	**VC001068.D**	Sample Name	**4862.01**
Operator	**Skelton**	Field ID	**417**
Date Acquired	**25 Oct 1999 6:34 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.35 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 417

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4862 Location: 417 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4862.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001068.D

Level: (low/med) LOW Date Received: 10/18/99

% Moisture: not dec. Date Analyzed: 10/25/99

GC Column: RTX502. 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

BASE NEUTRAL

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN03996.D**	Sample Name	**Sblk312**
Operator	**Bhaskar**	Misc Info	**Sblk312 A 991019**
Date Acquired	**22-Oct-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.79	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN03996.D**	Sample Name	**Sblk312**
Operator	**Bhaskar**	Misc Info	**Sblk312 A 991019**
Date Acquired	**22-Oct-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Sblk312**

Lab Name: FMETL Lab Code 13461

Project: Bldg.417 Case No.: 4862 Location: 417 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: Sblk312

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN03996.D

Level: (low/med) LOW Date Received: 10/18/99

% Moisture: decanted: (Y/N) N Date Extracted: 10/19/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/22/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	28.11	22	J
2.	unknown	29.08	30	J
3.	unknown	29.27	19	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN04002.D**	Sample Name	**4862.01**
Operator	**Bhaskar**	Misc Info	**417**
Date Acquired	**23-Oct-99**	Sample Multiplier	**1.11**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	2.03	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	1.01	ug/L	
62-53-3	Aniline			not detected	NLE	1.81	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.42	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.34	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.32	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.13	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.25	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.54	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.89	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.67	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.08	ug/L	
78-59-1	Isophorone			not detected	100	1.12	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.34	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.35	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.41	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.21	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.79	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.20	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.47	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.12	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.88	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.69	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	1.07	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.90	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.88	ug/L	
83-32-9	Acenaphthene	14.83	24767	1.33 ug/L	400	1.22	ug/L	D
132-64-9	Dibenzofuran			not detected	NLE	1.11	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.97	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.80	ug/L	
86-73-7	Fluorene			not detected	300	1.10	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.22	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.17	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.12	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.74	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.84	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.04	ug/L	
85-01-8	Phenanthrene	18.14	54544	1.81 ug/L	NLE	1.37	ug/L	D
120-12-7	Anthracene			not detected	2000	1.24	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.89	ug/L	
206-44-0	Fluoranthene			not detected	300	1.82	ug/L	

Semi-Volatile Analysis Report
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Data File Name	**BN04002.D**	Sample Name	**4862.01**
Operator	**Bhaskar**	Misc Info	**417**
Date Acquired	**23-Oct-99**	Sample Multiplier	**1.11**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.64	ug/L	
129-00-0	Pyrene			not detected	200	1.39	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.17	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.32	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.94	ug/L	
218-01-9	Chrysene			not detected	20	1.53	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.93	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.60	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.39	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.43	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.17	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.92	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.71	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.93	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **417**

Lab Name: FMETL Lab Code 13461

Project: Bldg.417 Case No.: 4862 Location: 417 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 4862.01

Sample wt/vol: 900 (g/ml) ML Lab File ID: BN04002.D

Level: (low/med) LOW Date Received: 10/18/99

% Moisture: decanted: (Y/N) N Date Extracted: 10/19/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. **Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted** ✓
2. **Table of Contents submitted** ✓
3. **Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted** ✓
4. **Document paginated and legible** ✓
5. **Chain of Custody submitted** ✓
6. **Samples submitted to lab within 48 hours of sample collection** ✓
7. **Methodology Summary submitted** ✓
8. **Laboratory Chronicle and Holding Time Check submitted** ✓
9. **Results submitted on a dry weight basis** ✓
10. **Method Detection Limits submitted** ✓
11. **Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP** ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 4/7/00

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

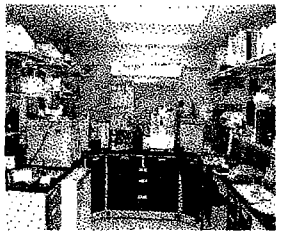
Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

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, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: UST Program

Bldg. 417

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
417-1 6-11'	4983.01	Aqueous	04-Dec-99 09:40	12/06/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

4-8-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: D. DESAI
Phone #: X2/475
( )DERA (✓)OMA ( )Other:_____
Project No:
Location: BLDG. 417
Samplers Name / Company: MARK LAURA - TVS-PNS 07

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	XYLENE	BN+15						Comments: Remarks / Preservation Method
4483.1	417-1 6-11	12-8-99	0940	AQ.	3	X	X	X						HCl/4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	12-9-99 730				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: ( )Standard 3 wks, (X)Rush 2 WORK Days, ( )ASAP Verbal ___ Hrs.

Remarks: SHARED T.B. + F.B. w/ BLDG. 412

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Page 1 of ____

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METHODOLOGY SUMMARY

Method Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE
NON-CONFORMANC
SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	Indicate Yes, No, N/A
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	Yes
2. Retention times for chromatograms provided	Yes
3. GC/MS Tune Specifications	
a. BFB Meet Criteria	Yes
b. DFTPP Meet Criteria	Yes
4. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series	Yes
5. GC/MS Calibration - Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	Yes
6. GC/MS Calibration Requirements	
a. Calibration Check Compounds Meet Criteria	Yes
b. System Performance Check Compounds Meet Criteria	Yes
7. Blank Contamination - If yes, List compounds and concentrations in each blank:	NO
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	
8. Surrogate Recoveries Meet Criteria	Yes
If not met, list those compounds and their recoveries, which fall outside the acceptable range:	
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	
If not met, were the calculations checked and the results qualified as "estimated"?	___
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	Yes
a. VOA Fraction _____	
b. B/N Fraction _____	
c. Acid Fraction _____	

GC/MS Analysis Conformance/Non-Conformance Summary (cont.)

Indicate
Yes,
No,
N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — Yes
    (If not met, list those compounds, which fall outside the acceptable range)
    a. VOA Fraction _____
    b. B/N Fraction _____
    c. Acid Fraction _____

11. Extraction Holding Time Met — Yes

    If not met, list number of days exceeded for each sample: ___
    _____
    _____

12. Analysis Holding Time Met — Yes

    If not met, list number of days exceeded for each sample: ___
    _____
    _____

Additional Comments:
_____
_____
_____

Laboratory Manager : _____ Date: 4-8-00

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4983 Site: Bldg. 417

	Date	Hold Time
Date Sampled	12/04/99	NA
Receipt/Refrigeration	12/04/99	NA
Extractions		
1. Base Neutral	12/06/99	14 days
Analyses		
1. Volatile Organics	12/06,07/99	14 days
2. Base Neutral	12/07/99	40 days

* Samples collected and refrigerated 12/04/99, Laboratory received the samples on Monday 12/06/99.

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL	: Method Detection Limit
J	: Compound identified below detection limit
B	: Compound in both sample and blank
D	: Results from dilution of sample
U	: Compound searched for but not detected
E	: Compound exceeds calibration limit

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

Data File	**VC001406.D**	Sample Name	**Vblk38**
Operator	**Skelton**	Field ID	**Vblk38**
Date Acquired	**6 Dec 1999 4:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

12/8/99 3:57 PM

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk38**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4983 Location: 417 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Vblk38

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001406.D

Level: (low/med) LOW Date Received: 12/6/99

% Moisture: not dec. Date Analyzed: 12/6/99

GC Column: RTX502. 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

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

Data File	**VC001424.D**	Sample Name	**4983.01**
Operator	**Skelton**	Field ID	**417-1**
Date Acquired	**7 Dec 1999 3:59 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

12/8/99 4:07 PM

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: 417-1

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4983 Location: 417 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4983.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001424.D

Level: (low/med) LOW Date Received: 12/6/99

% Moisture: not dec. Date Analyzed: 12/7/99

GC Column: RTX502. 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

BASE NEUTRAL

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN04072.D**	Sample Name	**Sblk325**
Operator	**Bhaskar**	Misc Info	**Sblk325 A 991206**
Date Acquired	**7-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.79	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN04072.D**	Sample Name	**Sblk325**
Operator	**Bhaskar**	Misc Info	**Sblk325 A 991206**
Date Acquired	**7-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Sblk325**

Lab Name: FMETL Lab Code 13461

Project: 100004 Case No.: 4983 Location: Bld.417 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: Sblk325

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04072.D

Level: (low/med) LOW Date Received: 12/6/99

% Moisture: decanted: (Y/N) N Date Extracted: 12/6/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN04084.D**	Sample Name	**4983.01**
Operator	**Bhaskar**	Misc Info	**417-1**
Date Acquired	**7-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.79	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene	18.09	52531	1.36 ug/L	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN04084.D**	Sample Name	**4983.01**
Operator	**Bhaskar**	Misc Info	**417-1**
Date Acquired	**7-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **417-1**

Lab Name: FMETL Lab Code 13461

Project: 100004 Case No.: 4983 Location: Bld.417 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 4983.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04084.D

Level: (low/med) LOW Date Received: 12/6/99

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/6/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 4983 Location Bld.417 SDG No.:

Lab File ID: BNA03321.D DFTPP Injection Date: 10/27/99

Instrument ID: BNA#2 DFTPP Injection Time: 9:32

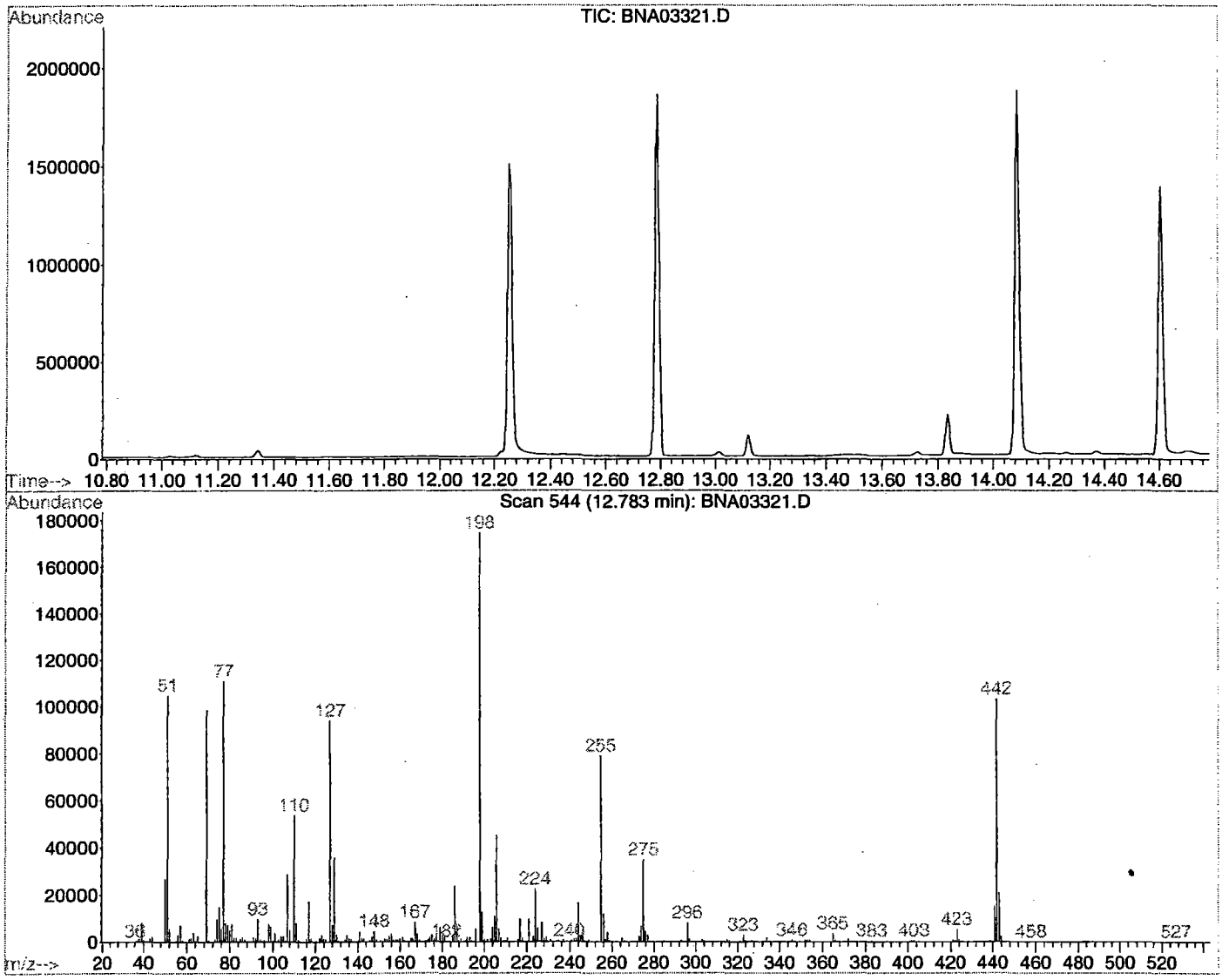
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	60.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	56.4
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	53.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	19.9
365	Greater than 0.75% of mass 198	2.0
441	Present, but less than mass 443	8.7
442	40.0 - 110.0% of mass 198	59.1
443	15.0 - 24.0% of mass 442	12.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	50 PPM CAL	BNA03325.D	10/27/99	12:40
02	4871.04DUP	4871.04DUP	BNA03332.D	10/27/99	18:28
03	4871.04MS	4871.04MS	BNA03333.D	10/27/99	19:17

Data File : C:\HPCHEM\1\DATA\991027\BNA03321.D Vial: 99
Acq On : 27 Oct 1999 9:32 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC BNA 2
Misc : 50NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 544

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	60.0	104832	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	56.4	98600	PASS
70	69	0.00	2	0.6	593	PASS
127	198	40	60	53.8	94000	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	174720	PASS
199	198	5	9	7.1	12479	PASS
275	198	10	30	19.9	34848	PASS
365	198	1	100	2.0	3527	PASS
441	443	1	99	72.0	15134	PASS
442	198	40	100	59.1	103184	PASS
443	442	17	23	20.4	21008	PASS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: 100004 Case No.: 4983 Location: Bld.417 SDG No:

Lab File ID: BN04064.D DFTPP Injection Date: 11/29/99

Instrument ID: SVoa#1 DFTPP Injection Time: 13:16

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	48.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	59.4
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	25.0 - 75.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	15.3
365	Greater than 0.75% of mass 198	1.4
441	Present, but less than mass 443	6.7
442	40.0 - 110.0% of mass 198	41.9
443	15.0 - 24.0% of mass 442	8.2 (19.6)2

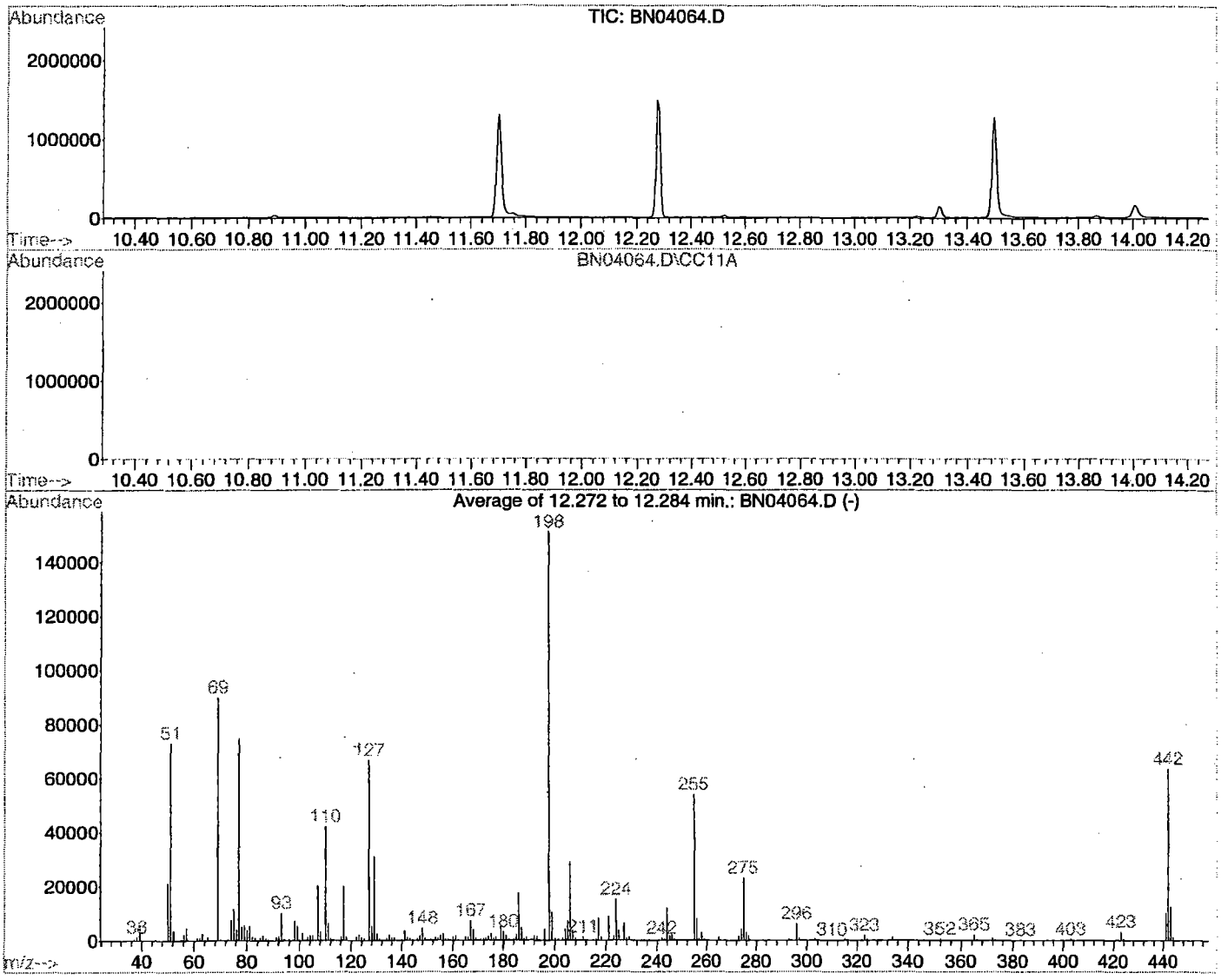
1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BN04065.D	11/29/99	13:47
02	SSTD080	80 PPM CAL	BN04066.D	11/29/99	14:37
03	SSTD050	50 PPM CAL	BN04067.D	11/29/99	15:21
04	SSTD020	20 PPM CAL	BN04068.D	11/29/99	16:06
05	SSTD010	10 PPM CAL	BN04069.D	11/29/99	16:52

DFTPP

Data File : C:\HPCHEM\1\DATA\991129\BN04064.D Vial: 99
Acq On : 29 Nov 1999 1:16 pm Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M62538.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Average of 12.272 to 12.284 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.2	73005	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	59.4	90010	PASS
70	69	0.00	2	0.5	426	PASS
127	198	40	60	44.0	66547	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	151413	PASS
199	198	5	9	6.8	10318	PASS
275	198	10	30	15.3	23106	PASS
365	198	1	100	1.4	2185	PASS
441	443	1	99	81.1	10084	PASS
442	198	40	100	41.9	63450	PASS
443	442	17	23	19.6	12433	PASS

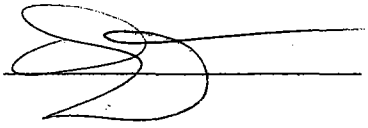
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature 

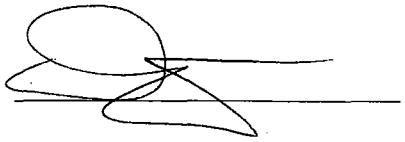
Date 4/18/00

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

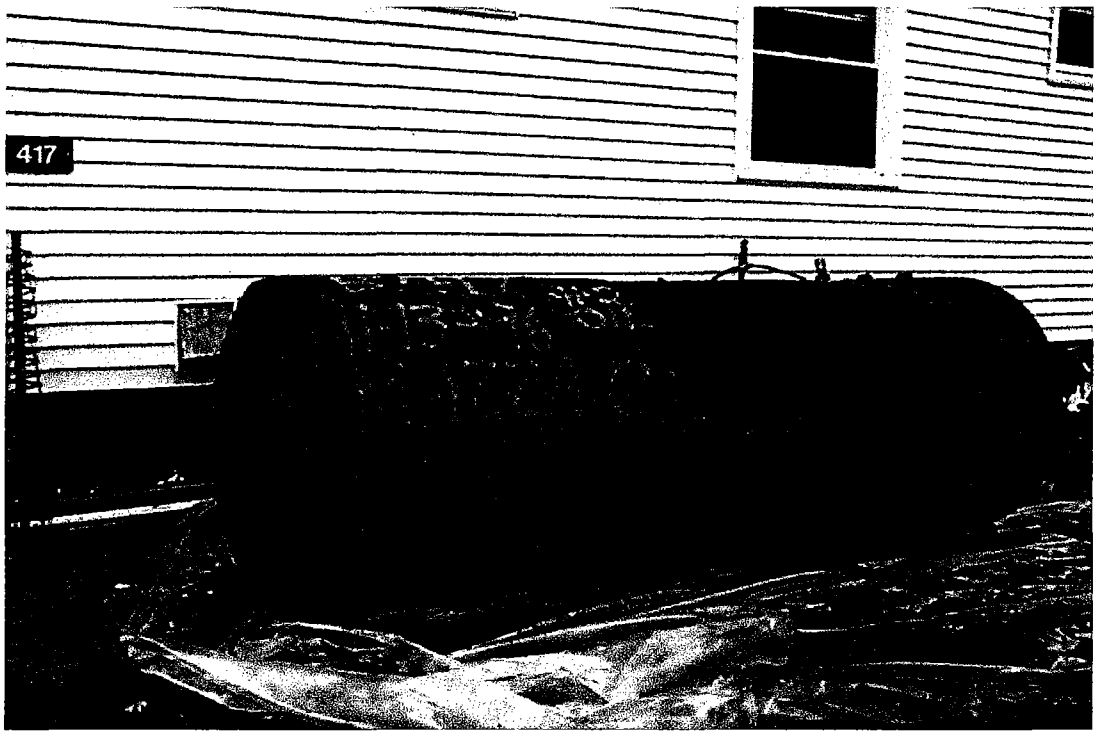
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

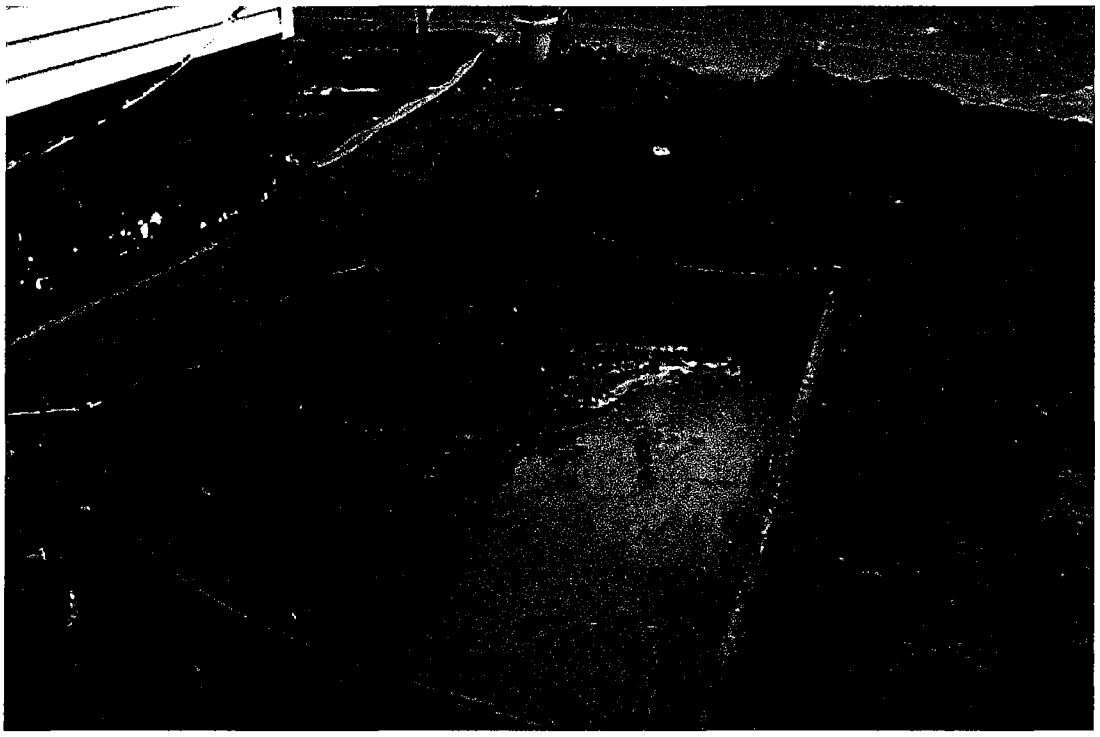


Daniel K. Wright
Laboratory Manager

APPENDIX G

PHOTOGRAPHS





NOVEMBER 13, 1996

PHOTOGRAPHIC LOG

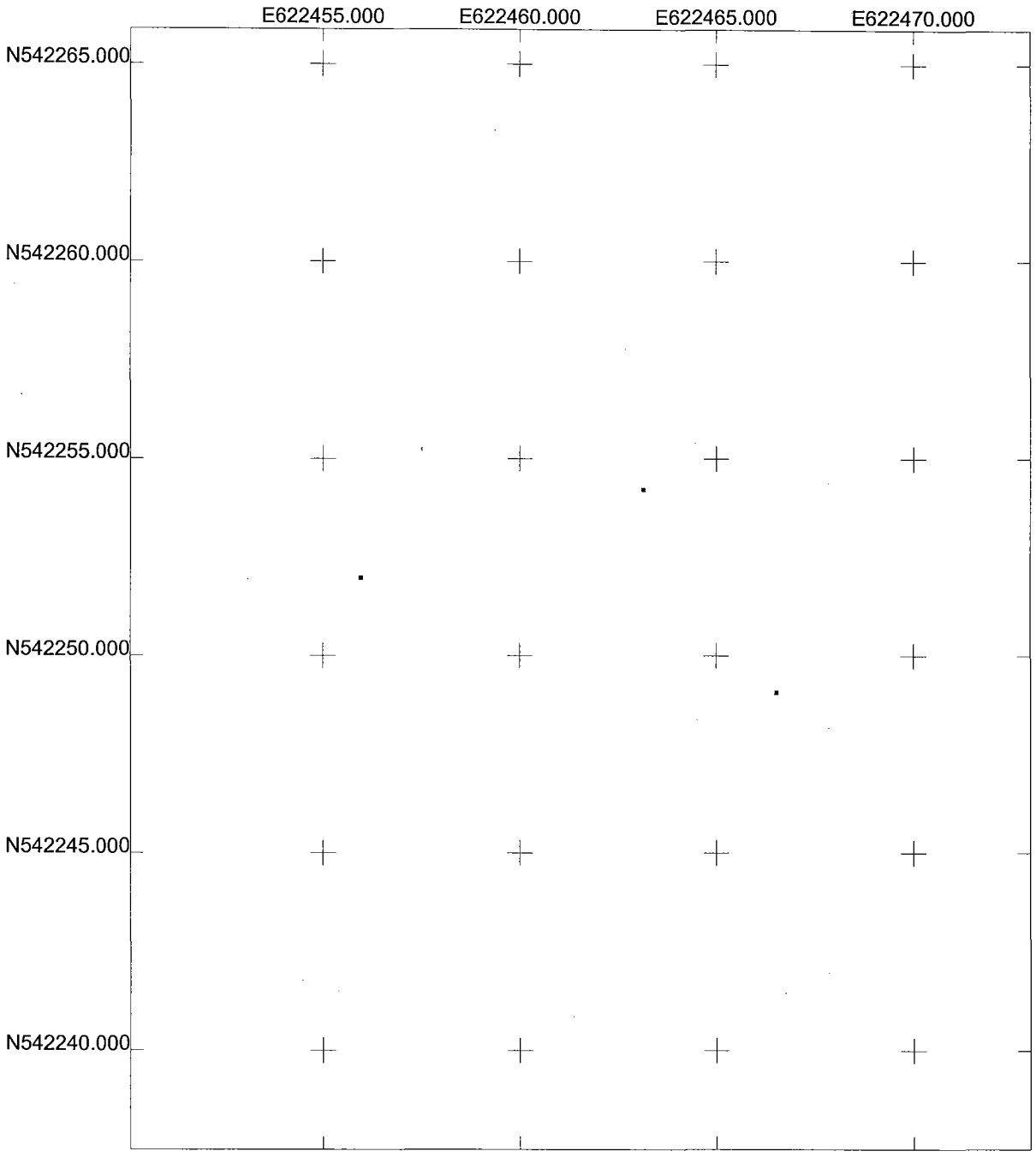
UST NO. 90010-33

Building 417
Main Post-East
Fort Monmouth

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA

APPENDIX H

ELECTRONIC DATA DELIVERABLES



Bldg 417 UST Ground Water Sample GPS Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)

N

Scale 1:50
0 6.000
US Survey Feet

r070713d.cor
7/7/2000
Pathfinder Office
Trimble

BLDG. 417 UST GROUND WATER SAMPLE GPS POSITION & COORDINATES

US STATE PLANE 1983 NJ (NY EAST) 2900 NAD 1983 (CONUS)

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
417 GW	542252.006	622455.934

(GW denotes Ground Water.)

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
STORM GRATE	542254.247	622463.127
WATER VALVE ACCESS	542249.084	622466.501