United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site/Remedial Investigation Report

Building 1220A
Main Post-West Area

NJDEP UST Registration No. 0081533-184
DICAR No. 98-06-12-0835-45

February 2001

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 1220A

MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-184

FEBRUARY 2001

PREPARED FOR:

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

PREPARED BY:

VERSAR
2558 PEARL BUCK ROAD
SUITE 1
BRISTOL, PA 19007

PROJECT NO. 4936-127

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

UST Closure

On June 12, 1998, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-184 (Fort Monmouth ID No. 1220A), was located south of Building 1220. UST No. 0081533-184 was a 1,000-gallon No. 2 fuel oil UST. The fill port was located directly above the UST. The Standard Reporting Form and signed Site Assessment Summary form for UST No. 0081533-184 are included in Appendices A and B, respectively.

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. Numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge of petroleum products was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 98-06-12-0835-45. Groundwater was not encountered.

Site/Remedial Investigation and Post-Excavation Soil Sampling

Versar was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 1220A at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST. The site/remedial investigation was performed by Versar personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. To confirm the PID readings and verify the effectiveness of the soil excavation activities, 14 post-excavation soil samples were collected from within the excavation between January 25 and January 29, 1999. All samples were analyzed for TPHC and total solids. The post-excavation soil samples collected from the excavation contained concentrations of TPHC below the NJDEP soil cleanup criteria.

Management of Excavated Soils

All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

Site Restoration

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones, sand and clean overburden soil removed from the excavation.

Conclusions and Recommendations

All post excavation soil samples collected from the UST excavation at Building 1220A 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).

In response to the observation of potentially contaminated soil and the potential of groundwater contamination, two (2) groundwater samples were collected at Building 1220A. On April 22, 2000, and May 22, 2000, Building 1220A 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. 81533-184 at Building 1220A.

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

Versar was retained by the United States Army Directorate of Public Works (DPW) to implement a site/remedial investigation adjacent to a former No 2 fuel oil underground storage tank (UST). The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-184, was associated with Building 1220A at the Main Post-West area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to site location map on Figure 1.

This report describes the results of the site/remedial investigation activities completed at the site. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST.

This report outlines background information, the site/remedial investigation activities, the results of these activities, and conclusions and recommendations drawn from these results.

1.2 SITE DESCRIPTION

Building 1220A is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-184 was located south of Building 1220A and appurtenant copper piping ran approximately thirty-eight (38) feet northwest from the excavation to Building 1220A. A Site Map is provided as Figure 2.

1.2.1 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1220A. 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.

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. Over 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 thickness 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 1220A was located approximately 1400 feet north of an unnamed stream, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 1220A is anticipated to be to the south.

1.3 HEALTH AND SAFETY

During all site/remedial investigation activities, hazards at the work site, which may have posed a threat to the Health and Safety of personnel, 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 safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were identified by the contractor performing the closure prior to excavation activities.

- 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 hole was made in the UST to allow for proper cleaning. Approximately 115 gallons of liquid from the UST and its associated piping were transported by Casie Protank to Casie Ecology Oil Salvage, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Vineland, 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. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils at the location of the holes were dark in color and appeared to be contaminated. Approximately 195 cubic yards of potentially contaminated soils were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area. Groundwater was not encountered. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The UST was transported to Mazza & Sons, Inc., Recycling Division. The transportation of the UST was in compliance with all applicable regulations and laws. Please refer to Appendix D for the UST disposal certificate.

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

2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site/Remedial Investigation was managed and carried out by Versar personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, an 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.* Sampling frequency and parameters analyzed complied with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E).

The following Parties participated in Site/Remedial Investigation Activities:

- Subsurface Evaluator: Tim Walker
  Employer: Versar
  Phone Number: (215) 788-7844

- Project Manager: Charles Appleby
  Employer: DPW U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (732) 532-4359
  NJDEP Company Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

Field screening and visual observations to identify potentially contaminated material was performed by a NJDEP Certified Sub-Surface Evaluator. During the excavation activities, all soil removed was screened with a photoionization detector (PID) to check for the presence of elevated volatile organic concentrations (VOCs).

Soils, which displayed elevated PID readings (i.e., above 5 ppm) were stockpiled separately from other excavated soils which did not display elevated PID readings (i.e., less than 5 ppm). The ground surface in the areas used to stockpile contaminated soils was covered with tarps. All stockpiled contaminated soil was covered with tarps at the completion of each day of excavation.

2.3 POST-EXCAVATION SOIL SAMPLING AND RESULTS

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 14 post-excavation soil samples were collected from within the excavation between January 25 and January 29, 1999. Of these, five (5) soil samples were collected along the former piping length of the excavation at a depth of 2.0 feet bgs. The piping samples were designated 1220A-P1 through 1220A-P5, where as sample 1220A-P5 was the duplicate. The remaining nine (9) post-excavation soil samples were collected from the bottom and sidewalls of the excavation at depths between 15.0 to 17.0 feet bgs. The samples were designated 1220A-1 through 1220A-11. Samples 1220A-6 and 1220A-11 were the duplicates.

Versar personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the post-excavation soil sampling activities. A summary of sampling activities including parameters analyzed is provided in Table 1. Following soil sampling activities, the samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids. The TPHC 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 TPHC analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2. The analytical data packages are provided in Appendix E.

The post-excavation soil samples collected from the excavation contained concentrations of TPHC below the NJDEP soil cleanup criteria.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones and sand. Two samples were collected from the overburden material and analyzed for TPHC. The clean stockpile soil samples (1220A-SP1 and 1220A-SP2) revealed TPHC concentrations ranging from non-detect to 233.73 mg/kg.

2.4 GROUNDWATER SAMPLING

On April 22, 2000, and May 22, 2000, Building 1220A 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.*

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

Versar was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 1220A at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones, sand and clean overburden material.

3.2 GROUNDWATER SAMPLING RESULTS

The sample collected from Building 1220A on April 22, 1999 contained 1,3-dichlorobenzene at a concentration of 1.03 ug/l, 1,4-dichlorobenzene at 1.02 ug/l, and 1,2-dichlorobenzene at 0.99 ug/l. No other compounds were detected.

The sample collected from Building 1220A on May 22, 1999 contained chloroform at a concentration of 2.91 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 shown on Figure 4. 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 April 22, 2000, and May 22, 2000, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSION AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 1220A 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 1220A on April 22, 2000, and May 22, 2000, groundwater quality at Building 1220A 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. 81533-184 at Building 1220A.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
**A	6/12/98	6/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**B	6/12/98	6/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
1	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
2	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
3	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
4	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**5	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
6	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
SP1	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
SP2	1/25/99	1/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
P1	1/26/99	1/27/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**P2	1/26/99	1/27/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
P3	1/26/99	1/27/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
P4	1/26/99	1/27/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
P5	1/26/99	1/27/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
7	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
8	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
9	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
10	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
11	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
P2R	1/29/99	1/29/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
***A/7.5'=	3647.01	6/12/98	6/12/98	Total Solid	--	--	74.66 %	--	--
				TPHC	210	yes	16711.52	10,000	Yes
***B/7.5'=	3647.02	6/12/98	6/12/98	Total Solid	--	--	74.28 %	--	--
				TPHC	211	yes	14694.36	10,000	Yes

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
***	Sample location was further remediated and resampled
ND	Not detected above stated method detection limit
TPHC	Total Petroleum Hydrocarbons
--	Non Applicable

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
1/16.0'=	4208.01	1/25/99	1/25/99	Total Solid	--	--	70.39 %	--	--
				TPHC	217	yes	ND	10,000	No
2/16.0'=	4208.02	1/25/99	1/25/99	Total Solid	--	--	72.62 %	--	--
				TPHC	214	yes	ND	10,000	No
3/16.0'=	4208.03	1/25/99	1/25/99	Total Solid	--	--	73.50 %	--	--
				TPHC	215	yes	ND	10,000	No
4/17.0'=	4208.04	1/25/99	1/25/99	Total Solid	--	--	77.46 %	--	--
				TPHC	202	yes	ND	10,000	No
***5/10.0'=	4208.05	1/25/99	1/25/99	Total Solid	--	--	74.35 %	--	--
				TPHC	209	yes	1859.47	10,000	No
6/16.0'=	4208.06	1/25/99	1/25/99	Total Solid	--	--	71.13 %	--	--
				TPHC	217	yes	ND	10,000	No
SP1=	4208.07	1/25/99	1/25/99	Total Solid	--	--	88.70 %	--	--
				TPHC	168	yes	233.73	10,000	No
SP2=	4208.08	1/25/99	1/25/99	Total Solid	--	--	79.49 %	--	--
				TPHC	187	yes	ND	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
***	Sample location was further remediated and resampled
--	Not detected above stated sample quantitation limit
TPHC	Total Petroleum Hydrocarbons

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
P1/2.0'=	4215.01	1/26/99	1/27/99	Total Solid	--	--	83.15%	--	--
				TPHC	188	Yes	ND	10,000	No
***P2/2.0'=	4215.02	1/26/99	1/27/99	Total Solid	--	--	81.75%	--	--
				TPHC	184	Yes	1451.32	10,000	No
P3/2.0'=	4215.03	1/26/99	1/27/99	Total Solid	--	--	81.05%	--	--
				TPHC	188	Yes	265.20	10,000	No
P4/2.0'=	4215.04	1/26/99	1/27/99	Total Solid	--	--	81.38%	--	--
				TPHC	188	Yes	ND	10,000	No
P5/2.0'=	4215.05	1/26/99	1/27/99	Total Solid	--	--	89.34%	--	--
				TPHC	170	Yes	293.25	10,000	No

Note:
* Total Solid results are expressed as a percentage.
** NJDEP Residential Direct Contact soil cleanup criteria for total organics
*** Sample location was further remediated and resampled
-- Not detected above stated sample quantitation limit

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 1220A, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
7/15.0'=	4230.01	1/29/99	1/29/99	Total Solid	--	--	74.65%	--	--
				TPHC	201	Yes	ND	10,000	No
8/15.0'=	4230.02	1/29/99	1/29/99	Total Solid	--	--	74.78%	--	--
				TPHC	208	Yes	1792.63	10,000	No
9/15.0'=	4230.03	1/29/99	1/29/99	Total Solid	--	--	69.63%	--	--
				TPHC	223	Yes	ND	10,000	No
10/16.0'=	4230.04	1/29/99	1/29/99	Total Solid	--	--	71.23%	--	--
				TPHC	207	Yes	ND	10,000	No
11/15.0'=	4230.05	1/29/99	1/29/99	Total Solid	--	--	73.77%	--	--
				TPHC	203	Yes	ND	10,000	No
P2R/3.0'=	4230.06	1/29/99	1/29/99	Total Solid	--	--	85.92%	--	--
				TPHC	172	Yes	241.97	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
--	Not detected above stated sample quantitation limit
TPHC	Total Petroleum Hydrocarbons

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 4/22/00 Location: 1220A Lab Sample ID: 5370.01(Bldg 1220A)

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: 4/22/00 Location: 1220A Lab Sample ID: 5370.01(Bldg 1220A)

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	1.03	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	1.02	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	0.99	--	600	no

Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 4/22/00 Location: 1220A Lab Sample ID: 5370.01(Bldg 1220A)

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: 4/22/00 Location: 1220A Lab Sample ID: 5370.01(Bldg 1220A)

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	Not Detected	--	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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 5/22/00 Location: 1220A Lab Sample ID: 5426.03(Bldg 1220A)

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	2.91	--	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: 5/22/00 Location: 1220A Lab Sample ID: 5426.03(Bldg 1220A)

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: 5/22/00 Location: 1220A Lab Sample ID: 5426.03(Bldg 1220A)

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

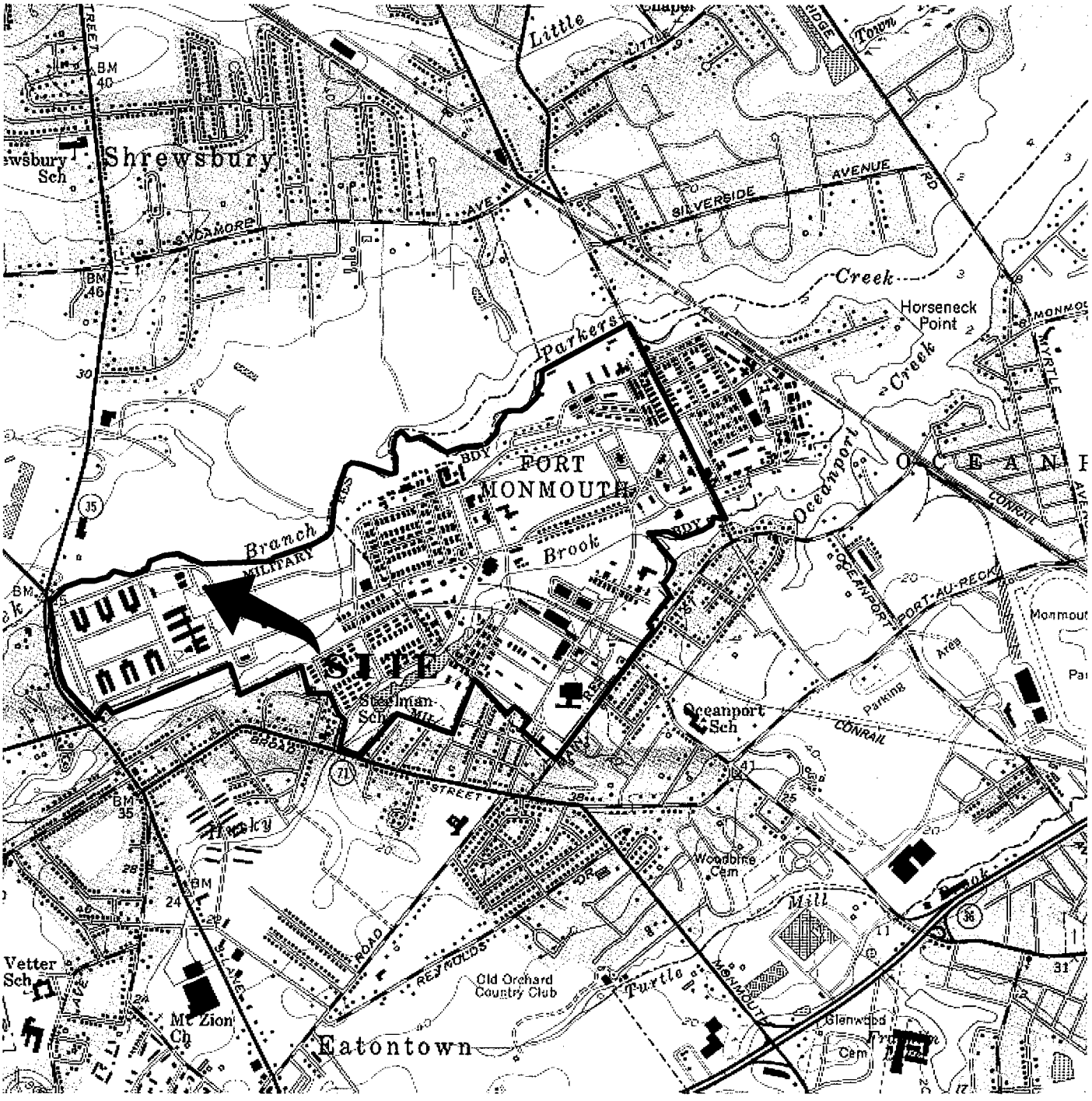
Table 3
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 5/22/00 Location: 1220A Lab Sample ID: 5426.03(Bldg 1220A)

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	Not Detected	--	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

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

LOCATION MAP
Building 1220
Main-Post West
Fort Monmouth Army Base
Monmouth County, NJ

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

Scale: 1" = 2000'

Date: June 1998

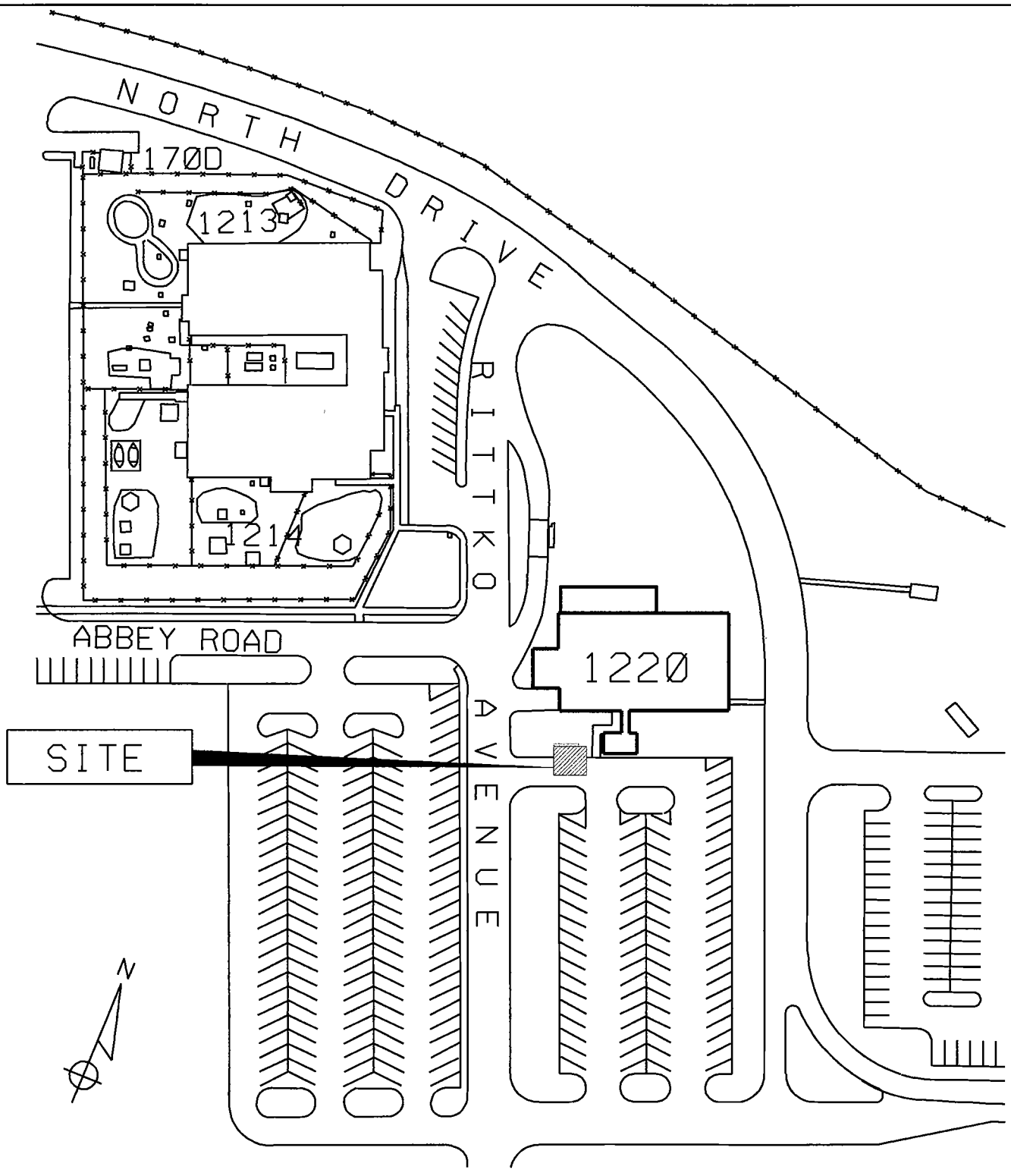


FIGURE 2
SITE MAP
BUILDING 1220
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1" = 100'

DATE: JUNE 1998

1220 FIG2

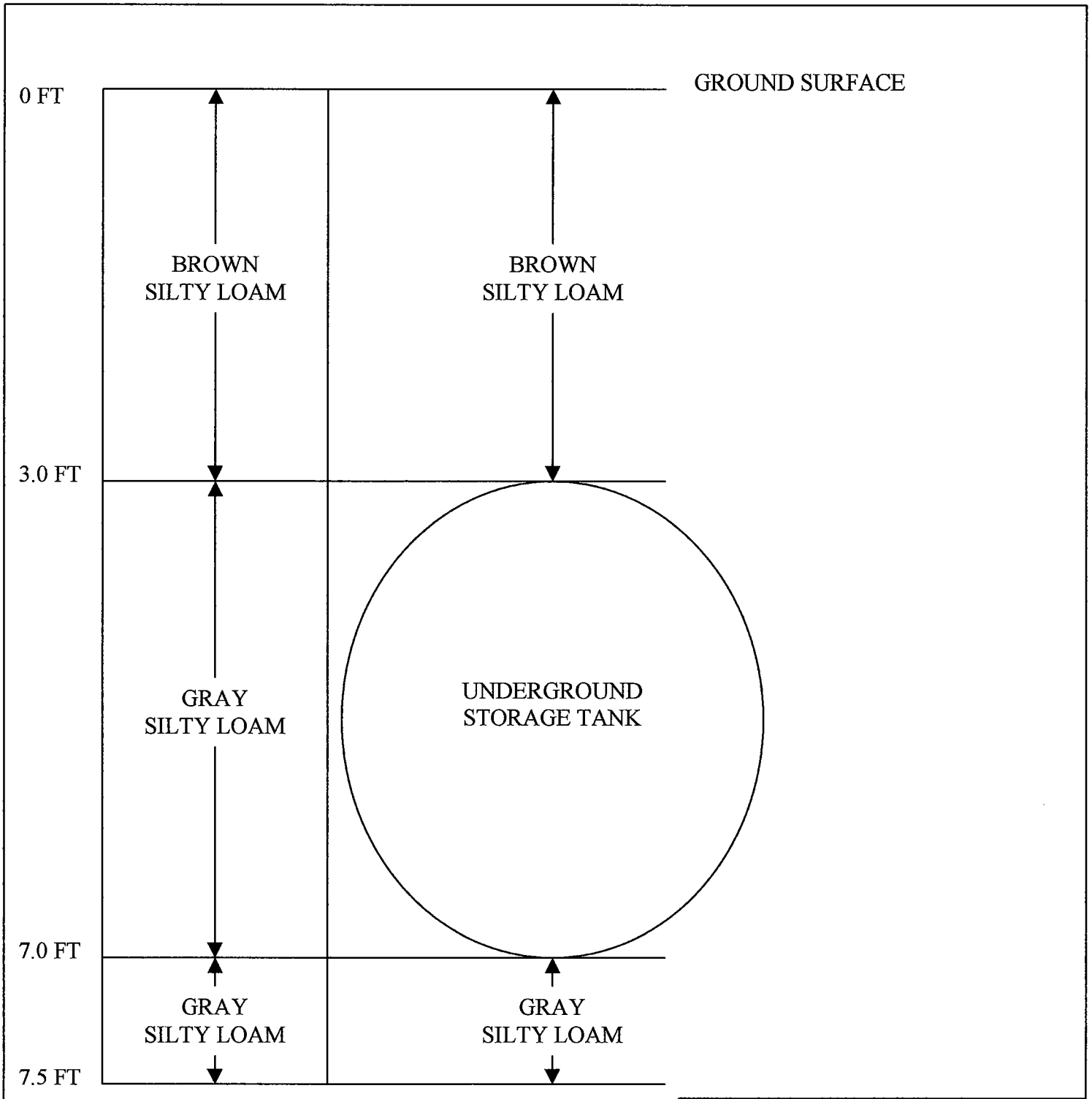
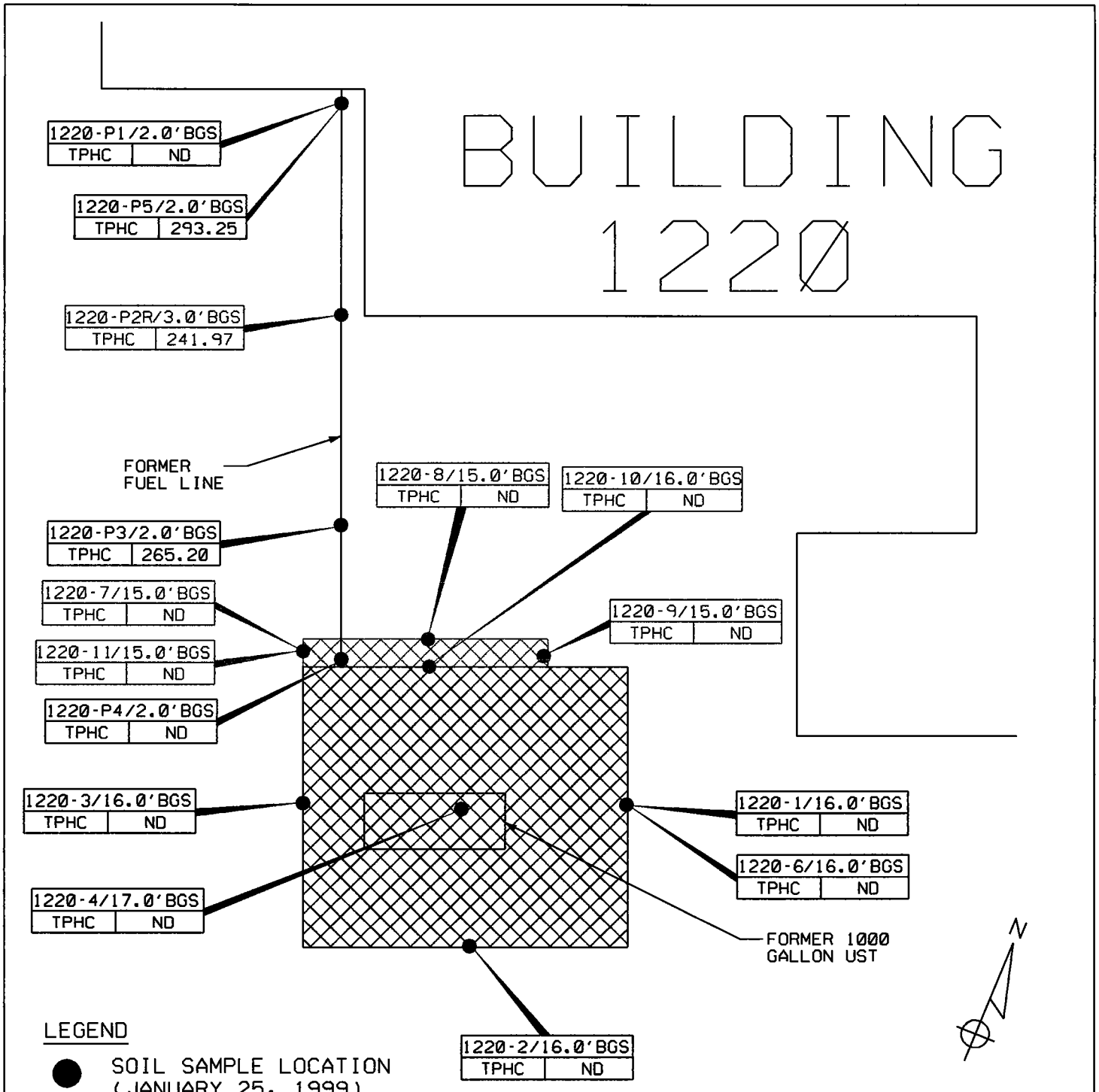


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 1220
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

SCALE: NTS | DATE: June 1998



NOTES:

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

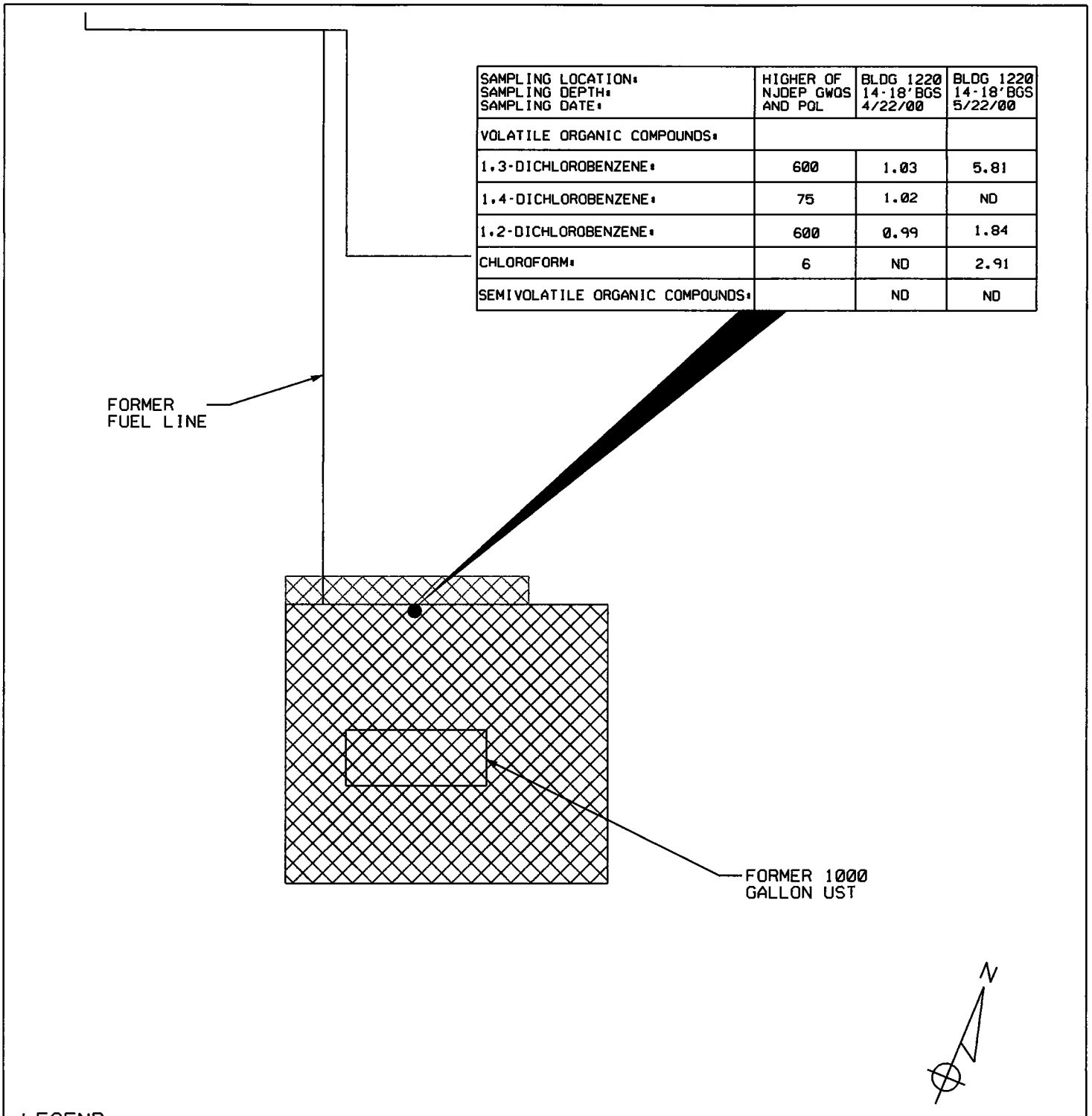
FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 1220
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1" = 10' | DATE: JUNE 1998

1220 FIG4

SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWQS AND PQL	BLDG 1220 14-18'BGS 4/22/00	BLDG 1220 14-18'BGS 5/22/00
VOLATILE ORGANIC COMPOUNDS:			
1,3-DICHLOROBENZENE:	600	1.03	5.81
1,4-DICHLOROBENZENE:	75	1.02	ND
1,2-DICHLOROBENZENE:	600	0.99	1.84
CHLOROFORM:	6	ND	2.91
SEMIVOLATILE ORGANIC COMPOUNDS:		ND	ND



LEGEND

- GROUNDWATER SAMPLE LOCATION (APRIL 22, 1999 AND MAY 22, 1999)
- LIMIT OF EXCAVATION (JANUARY 25, 1999)
- LIMIT OF EXCAVATION (JANUARY 29, 1999)

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 1220
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10' | DATE: JUNE 1998

1220 FIG5

APPENDIX A

NJDEP-STANDARD REPORTING FORM

Enter File Copy mailed 6/15/88 CA

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF APPLICABILITY AND COMPLIANCE
Registration and Billing Unit
CN 028, Trenton, N.J. 08625-0028
1-609-984-3156

FOR STATE USE ONLY

Check In ☐ Yes ☐

STATUS Active ☐ Inactive ☐ COMCODE ☐☐☐☐

UNDERGROUND STORAGE TANK FACILITY QUESTIONNAIRE

FACILITY UST # 81533 Bldg 1220 A

Completion of this Registration Questionnaire will satisfy the registration requirements of the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21, and the Registration and Billing Regulations N.J.A.C. 7:14B-2.

[Check appropriate box(es)]

A. ☐ Is this a registration of a proposed or newly installed underground storage tank? (This form must be filed at least 30 days prior to operation)
B. ☐ Is this a registration of an existing underground storage tank not presently registered?
C. ☒ Is this a correction or amendment to an existing facility registration? UST # 81533
D. ☐ There have been no changes to the facility registration since last submittal. UST #_____ (Go to certification page for signatures)

If "C" is checked above, please check the appropriate type of change(s) below

☐ Facility Name and/or Address Change	☐ Type of Product(s) Stored	☐ Financial Responsibility Change
☐ Owner Name and/or Address Change	☐ Spills, Leaks, Releases	☐ Substantial Modification(s)
☐ Facility Operator and/or Address Change	☐ Tank(s) and/or Piping Changes	☐ Sale or Transfer (Complete Questions 4,5,6 & 13D
☐ Owner Contact Person Change	☒ Closure (Complete Question #13)	☐ Other *(please specify)*

SECTION A - GENERAL FACILITY INFORMATION

1. Facility Name: MAIN Post West
2. Facility Location: Ft Monmouth
   NUMBER AND STREET
   CITY OR MUNICIPALITY
   COUNTY | STATE: NJ | ZIP CODE | BLOCK | LOT
3. Facility Operator
   PERSON OR TITLE | Contact Tele. No. (Area Code) (Extension)
   Operator Address (if different than #2)
   NUMBER AND STREET
   CITY OR MUNICIPALITY
   STATE | ZIP CODE
4. Tank Owner
5. Tank Owner Address
   NUMBER AND STREET
   CITY OR MUNICIPALITY
   STATE | ZIP CODE
   Contact Person (Tank Owner) | Contact Tele. No. (Area Code) (Extension)
7. EPA ID # ☐☐☐☐☐☐☐☐☐☐☐☐
8. Total number of regulated underground storage tanks at facility ☐☐☐☐ *(Complete Section B for each tank)*

Bldg 1220 A

9. Total regulated underground storage k capacity at facility (gallons) [ ]

10. Facility Type: A ☐ State B ☐ Commercial/ Industrial C ☐ County/Municipal D ☐ Federal E ☐ Charitable / Public School F ☐ Residence G ☐ Other H ☐ Farm (as defined in N.J.S.A. 54:4-23.1 et seq.)

11. Is a copy of the facility site plan submitted with this registration pursuant to N.J.A.C. 7:14B-2? ☐ YES ☐ NO

SECTION B - SPECIFIC TANK INFORMATION

ALL underground tanks, including those taken out of operation (UNLESS THE TANK WAS REMOVED FROM THE GROUND PRIOR TO 9/3/86) must be registered. Report all tank/piping status changes unless previously submitted.

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
1. Tank Identification Number					
2. CAS Number (hazardous substances only)					
3. Date Tank Installed (Month/Day/Year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
4. Tank Size (gallons)					
5. Tank Contents (Mark one "X" for each tank)					
A. Leaded gasoline					
B. Unleaded gasoline					
C. Alcohol enriched gasoline					
D. Light diesel fuel (No. 1-D)					
E. Medium diesel fuel (No. 2-D)					
F. Waste Oil					
G. Kerosene (No. 1)					
H. Home heating oil (No. 2)					
J. Heating oil (No. 4)					
K. Heavy heating oil (No. 6)					
L. Aviation fuel					
M. Motor oil					
N. Lubricating oil					
P. Sewage					
Q. Sewage sludge					
R. Other hazardous substances (specify)					
S. Hazardous waste (specify ID number)					
T. Mixtures (please specify)					
U. Emergency spill tank (specify substance)					
V. Other petroleum products (please specify)					
W. Other (please specify)					
6. Tank & Piping Construction (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Bare Steel					
B. Cathodically protected steel					
C. Fiberglass-coated steel					
D. Fiberglass-reinforced plastic					
E. Internally lined					
F. Other (please specify)					
7. Tank & Piping Structure (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Single wall					
B. Double wall					
C. Other (please specify)					
8. Type of Monitoring/Detection System (Mark all that apply for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Statistical Inventory Reconciliation					
B. Manual Tank Gauging					
C. Inventory Control					
D. Interstitial					
E. Precision Test					
F. Ground water observation wells					
G. Vapor observation wells					
H. In-tank (automatic) monitoring gauge					
J. Periodic Tank Test					

Tank Identification Number	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
8. Type of Monitoring/Detection System K. None	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐
L. Other (please specify)					
9. Overfill Protection (tank only) (Mark one X for each tank) A. Yes	☐	☐	☐	☐	☐
B. No	☐	☐	☐	☐	☐
10. Spill Containment Around Fill Pipe (Mark one X for each tank) A. Yes	☐	☐	☐	☐	☐
B. No	☐	☐	☐	☐	☐
11. Tank Status (Mark one X for each tank) A. In-use	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐	Tank ☐ Piping ☐
B. Empty less than 12 months	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Empty 12 months or more	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Emergency spill tank (sump)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Emergency backup generator tank	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Abandoned in Place	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Removed	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Other (please specify)					
12. If box 11B, C, or D above has been marked, indicate the estimated date last used (month/day/year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
13. Closure Information - Tank ID No. Bldg 1200A	TANK NO. 1 8 4	TANK NO.	TANK NO.	TANK NO.	TANK NO.
	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
A. Date abandoned in place					
B. Date taken temporarily out of service					
C. Date removed	06/12/1998				
D. Date of Sale or Transfer					
E. TMS # (if applicable)					
F. ISRA # (if applicable)	98-06-12-0835-45				

SECTION C - FINANCIAL RESPONSIBILITY

Does this facility have a Financial Responsibility Assurance Mechanism as required in 40 CFR 280? ☐ YES ☐ NO
Please list the appropriate financial information below:

_____ Type

_____ Carrier / Issuing Agency

___/___/___ Effective Date

___/___/___ Expiration Date

_____ Policy Number

$_____ Amount

SECTION D - MONITORING SYSTEMS

Does this facility have a release detection monitoring system which is in compliance with N.J.A.C. 7:14B-6? ☐ YES ☐ NO
If "No", please be aware that the facility must meet the appropriate deadline. (See "Dates to Know" on Page 4)

SECTION E - RECORDKEEPING/COMPLIANCE

Please answer all the questions in this section on a facility basis. Any one tank not in compliance requires a "NO" answer for the entire facility.

1. Does this facility have cathodic protection systems for all steel tanks and piping? ☐ YES ☐ NO
   If "Yes", are the systems properly operated and maintained pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
2. Are the performance claims and documentation of monitoring systems maintained by the owner or operator pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
3. Are the proper monitoring, testing, sampling, repair and inventory records kept on-site pursuant to N.J.A.C. 7:14B-5 and 6? ☐ YES ☐ NO
4. Is the proper Release Response Plan kept on-site pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
5. Does the facility have spill and over fill protection systems pursuant to N.J.A.C. 7:14B-4? ☐ YES ☐ NO
6. Have all Fill Ports been permanently marked as per API #1637 pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO

IMPORTANT INFORMATION

FEE:	Please make checks payble to: **"Treasurer, State of New Jersey"**. Use of the enclosed return envelope will expedite processing. Registration and Billing Schedule can be found in N.J.A.C. 7:14B. All Initial Registration fees are $100 per facility.
PENALTY:	Failure by owner or operator of a regulated underground storage tank to comply with any requirement of the State UST Act or regulations may result in the penalties set forth in NJ..S.A. 58:10A-10.
EMERGENCY:	If a discharge or spill occurs, the NJDEP Hotline at (609) 292-7172 must be called IMMEDIATELY - 24 hours a day.
UPGRADE EXEMPTION:	Residential heating oil underground storage tanks are exempt from all upgrade requirements.

DATES TO KNOW (critical deadlines)

December 22, 1988	—	All new federally regulated tank systems must have cathodic protection and spill/overfill protection.
September 4, 1990	—	All new State-only regulated tank systems must have cathodic protection and spill/overfill protection.
December 22, 1990	—	All federally regulated piping must have begun leak detection.
February 19, 1993	—	All federally regulated tank systems must maintain financial responsibility assurance.
December 22, 1993	—	All federally regulated tank systems must have begun leak detection.
December 22, 1998	—	All regulated tanks shall install cathodic protection and spill/overfill protection.

CERTIFICATIONS

NOTE: IF THE PERSON SIGNING CERTIFICATION NO. 2 IS THE SAME AS THE PERSON SIGNING CERTIFICATION NO. 1, THEN CERTIFICATION NO. 2 NEED NOT BE SIGNED. (If different persons are required to sign No. 1 and No. 2, then they must do so.)

CERTIFICATION NO. 1:

Must be signed by the highest ranking individual at the facility with overall responsibility

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

MR. James Ott — (Typed / Printed Name)

James Ott — (Signature)

Director of Public Works — (Title)

6/14/98 — (Date)

CERTIFICATION NO. 2:

Must be signed as follows:

- For a corporation, by a principal executive officer of at least the level of vice president
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively
- For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official
- For persons other than indicated above, by the person with legal responsibility for the site

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal 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."

NA — (Typed / Printed Name)

(Signature)

(Title)

(Date)

CERTIFICATION NO. 3:

If applicable, must be signed by the individual who is certified to perform services.

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

MR. Charles Appleby — (Typed / Printed Name)

Env. Pro. Spec. — (Title)

(Signature)

6/12/98 — (Date)

U.S. Army — (Name of Firm, if applicable)

2056 — (N.J. Certification Number)

APPENDIX B

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 : 81533-184 (7 digits)
- Incident Report Number 98 – 06 – 12 – 0835 – 45 (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: Charles Appleby Signature: See signed subsurface removal log UST Cert. No.: 2056

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:

Company Name: U.S. Army Fort Monmouth Date:

US ARMY, SELFM-PW-EV

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 1220 REG.#: 81533 - 184 CLOSURE#:
DATE: 6/12/98 TOA: 810 TOD: 830
GOV. SSE: C. Appleby NJDEP CERT.#: 2056
REMOVAL CONTRACTOR:
CLOSURE SUPERVISOR: Gary Dethorsting NJDEP CERT.#:
WEATHER: Raining Cool ~65°

ACTIVITY Leaker	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	Yes
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Yes
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	Yes
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR Cleared from Above	NA
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Yes
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# 98-06-12-0835-45	Yes
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	Yes
GROUNDWATER WAS ENCOUNTERED AT None FEET BG, A SHEEN (WAS / WAS NOT) OBSERVED ON GW	NA
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	NA
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	NA
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	NA
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	NA
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	NA
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	NO
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	Yes
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ~~ACCIDENT REPORT~~, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS^3), ~~PHOTOGRAPHS~~ (UST, EXCAVATION, SAMPLING POINTS)	

CHECK ALL BOXES, LEAVE NO BLANKS

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: _____

ca\ms\ust\removal\sitessls.doc

- SRF Sent for Signature.

APPENDIX C

WASTE MANIFEST

CASIE / PROTANK
ENVIRONMENTAL SERVICES

1220 (FRONT PARKING LOT

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

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. NJ3210020597 Document No. 12322
2. Page 1 of 1

3. Generator's Name and Mailing Address U.S. Army Com. Elec.Command
Main Post Bldg 173/Attn:
Fort Monmouth NJ 07703

A. Non-hazardous Manifest Document Number NHZ020 16448

4. Generator's Phone (732) 532-6223

B. State Generator's ID c/o ~~Janes Shirghio~~ Joe Fallon

5. Transporter 1 Company Name: Casie Ecology Oil Salvage, Inc. 6. US EPA ID Number: NJD045995693

C. State Trans. ID 16931

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

D. Transporter's Phone (609) 696-4401

E. State Trans. ID

9. Designated Facility Name and Site Address: Casie Ecology Oil Salvage, Inc. T/A
3209 N. Mill Rd / Casie Protank
Vineland NJ 08360 10. US EPA ID Number: NJD045995693

F. Transporter's Phone ( )

G. State Facility's 0614D1HP05

H. Facility's Phone (609) 696-4401

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a. Combustible liquid, n.o.s.(Fuel Oil) NA1993, PGIII	001	TT	~~00001~~ X3370	G	ID72
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
L,T %oil/sed. %wtr.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
a.24 Hr. Emergency Response #609 696-4401 K. Ambrosia NAERG# 127

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.

GENERATOR — Printed/Typed Name: Charles Appleby SELFM-RW-EV | Signature | Month Day Year: 04/01/98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bob Consiglio | Signature | Month Day Year: 04/01/98

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

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

1–GENERATOR COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

APPENDIX D

UST DISPOSAL CERTIFICATE

M ZZA & SONS, INC.

Metal Recyclers
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

NO. 0295

DATE. 12 JUNE 98

B. 1220

Customer's Name Tecom - Vinnell

Address

	Weight	Price
Cast Iron		
Steel		
Tanks	09.15	
Lt. Iron		
Copper #1		
Copper #2		

13560 LB

12500 LB

1060

BLD 1220

12

Ck#1910

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Battery		
		$ 09.15
TOTAL AMOUNT:		

Weigher _____ Customer _____

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.

DATE		AMOUNT	
TOTAL OF INVOICES			
LESS ___ % DISCOUNT			
LESS FREIGHT			
LESS			
TOTAL DEDUCTIONS			
AMOUNT OF CHECK			

1910

MAZZA & SONS, INC.
RECYCLING DIVISION
P.O. BOX 246
OAKHURST, NJ 07755

55-7233/2212

DATE 6/11/98

PAY TO THE ORDER OF Tecom Vinnell $ 194.15

One Hundred Ninety Four + 15/100 DOLLARS

Sovereign Bank

⑈001910⑈ ⑆221272332⑆000 109109928⑆

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 1220
1000 GAL.Steel Tank

Project # 3647
Date Rec. 06/12/98
Date Compl. 06/14/98
Released by:

7-6-98

Daniel K. Wright Date:
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

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	__	**NA** __
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

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: C. Appleby - DPW
Phone #: 26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0001
Location: B1220 (1,000 GAL. STEEL TANK)

Samplers Name / Company : GARY DiMARTINIS - TUS

Comments: * = SAMPLES KEPT BELOW 4°C.

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	Pb SW1013							Remarks / Preservation Method
3647. 01	1220-A	6-12-98	0825	SOIL	1	X	X							EXC. FLOOR @ 7.5' *
02	-B	↓	0828	↓	↓	↓	↓							↓ *

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Gary DiMartinis	6-12-98 1115				
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 4 wks, (X)Rush ____ Days, (X)ASAP Verbal ____ Hrs.

Remarks: DEDICATED SAMPLING TOOLS USED.

print legibly

Custody.xls4/14/98

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

Client :	U.S. Army	**Lab. ID # :**	3647
	DPW. SELFM-PW-EV	**Date Rec'd:**	12-Jun-98
	Bldg. 173	**Analysis Start:**	12-Jun-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	14-Jun-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B.1220

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3647.01	1220-A	**1.00**	14.97	74.66	210	**16711.52**
3647.02	1220-B	**1.00**	15.02	74.28	211	**14694.36**
METHOD BLANK	TBLK 114	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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 <u>and</u> 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 7/6/98

Laboratory Certification #13461

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

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #99-0078

Bldg. 1220

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
1220-1 (16')	4208.01	Soil	25-Jan-99 11:10	01/25/99
1220-2 (16')	4208.02	Soil	25-Jan-99 11:15	01/25/99
1220-3 (16')	4208.03	Soil	25-Jan-99 11:20	01/25/99
1220-4 (17')	4208.04	Soil	25-Jan-99 11:25	01/25/99
1220-5 (10')	4208.05	Soil	25-Jan-99 11:30	01/25/99
1220-6 (16')	4208.06	Soil	25-Jan-99 11:35	01/25/99
1220-SP-1	4208.07	Soil	25-Jan-99 14:05	01/25/99
1220-SP-2	4208.08	Soil	25-Jan-99 14:10	01/25/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

11/29/99
Daniel Wright/Date
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

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

Additional comments: _____

Laboratory Manager

1/24/99
Date

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
(X)OMA FM0097F147 UST Remediation

Project No: IJO 99-0078 UST (REM.)
Location: BUILDING 1220
UST# 81533-18A
CASE# 98-06-12-0835-45

Samplers Name / Company : Tim Walker (SMC/VERSAR)

Comments: RUSH

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS						H-NU READING	Remarks / Preservation Method
4208.01	1220-1(16')	1-25-99	1110	SOIL	1	X	X						0	ICE
02	1220-2(16')		1115		1	X	X						0	
03	1220-3(16')		1120		1	X	X						0	
04	1220-4(17')		1125		1	X	X						0	
05	1220-5(10')		1130		1	X	X						12	
06	1220-6(16')		1135		1	X	X						0	
07	1220-SP1		1405		1	X	X						0	
08	1220-SP2		1410		1	X	X						0	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Tim Walker	1-25-99 1425	J. Virgona			
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 4 wks, (X)Rush ____ Days, (X)ASAP Verbal ____ Hrs.

Remarks: H-NU CALIBRATION - ZERO GAS = 0.0 PPM
100 PPM ISOBUTYLENE ; 58 PPM @ 9.8 SAMP
SMC H-NU # 1 : S/N 701463

print legibly

SMCcoc1/6/99

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

Client :	U.S. Army	**Lab. ID # :**	4208
	DPW. SELFM-PW-EV	**Date Rec'd:**	25-Jan-99
	Bldg. 173	**Analysis Start:**	25-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Jan-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	Bldg. 1220

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4208.01	1220-1(16')	**1.00**	15.42	70.39	217	**ND**
4208.02	1220-2(16')	**1.00**	15.09	72.62	214	**ND**
4208.03	1220-3(16')	**1.00**	14.90	73.50	215	**ND**
4208.04	1220-4(17')	**1.00**	15.02	77.46	202	**ND**
4208.05	1220-5(10')	**1.00**	15.12	74.35	209	**1859.47**
4208.06	1220-6(16')	**1.00**	15.24	71.13	217	**ND**
4208.07	1220-SP1	**1.00**	15.80	88.70	168	**233.73**
4208.08	1220-SP2	**1.00**	15.83	79.49	187	**ND**
METHOD BLANK	TBLK 211	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

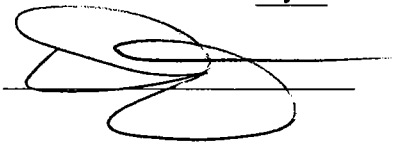
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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 1 / 29 94

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)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #99-0078

Bldg. 1220

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
1220-P1 (2')	4215.01	Soil	26-Jan-99 14:00	01/26/99
1220-P2 (2')	4215.02	Soil	26-Jan-99 14:05	01/26/99
1220-P3 (2')	4215.03	Soil	26-Jan-99 14:10	01/26/99
1220-P4 (2')	4215.04	Soil	26-Jan-99 14:15	01/26/99
1220-P5 (2')	4215.05	Soil	26-Jan-99 14:20	01/26/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

2-5-99
Daniel Wright/Date
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

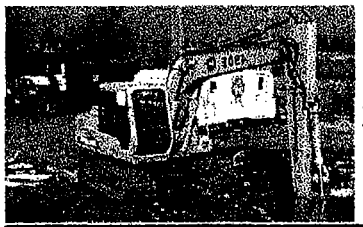
The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

		Indicate Yes, No, N/A
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 and samples.	_____
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 Manager Date



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
(X)OMA FM0097F147 UST Remediation

Project No: IJO 99-0078 UST (REM.)
Location: BUILDING 1220
UST #81533-184
CASE#98-06-12-0835-45

Samplers Name / Company : Tim Walker (SMC/VERSAR)

Comments: RUSH 3-5 DAYS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS						H-Nu READINGS	Remarks / Preservation Method
4015. 01	1220-P1 (2')	1-26-99	1400	SOIL	1	X	X						0	ICE
02	1220-P2 (2')		1405		1	X	X						0	
03	1220-P3 (2')		1410		1	X	X						0	
04	1220-P4 (2')		1415		1	X	X						0	
05	1220-P5 (2')		1420		1	X	X						0	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Tim Walker	1-26-99 1440	J. Verdina			
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 4 wks, (X)Rush 3-5 Days, (_)ASAP Verbal ___ Hrs.

Remarks: H-NU CALIBRATION - ZERO GAS = 0.0 PPM
100 PPM ISOBUTYLENE; 58 PPM @ 9.8 SPAN
SMC H-NU #1: S/N 701463

000003

print legibly

SMCcoc1/25/99

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

Client :	U.S. Army	**Lab. ID # :**	4215
	DPW. SELFM-PW-EV	**Date Rec'd:**	26-Jan-99
	Bldg. 173	**Analysis Start:**	27-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	28-Jan-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	Bldg. 1220

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4215.01	1220-P1(2')	1.00	15.01	83.15	188	ND
4215.02	1220-P2(2')	1.00	15.64	81.75	184	1451.32
4215.03	1220-P3(2')	1.00	15.41	81.05	188	265.20
4215.04	1220-P4(2')	1.00	15.37	81.38	188	ND
4215.05	1220-P5(2')	1.00	15.51	89.34	170	293.25
METHOD BLANK	TBLK 212	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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 2/5/99

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)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #99-0078

Bldg. 1220

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
1220-7 (15')	4230.01	Soil	29-Jan-99 08:25	01/29/99
1220-8 (15')	4230.02	Soil	29-Jan-99 08:20	01/29/99
1220-9(15')	4230.03	Soil	29-Jan-99 08:15	01/29/99
1220-10 (16')	4230.04	Soil	29-Jan-99 08:00	01/29/99
1220-11 (15')	4230.05	Soil	29-Jan-99 08:30	01/29/99
1220-P2R (3')	4230.06	Soil	29-Jan-99 10:20	01/29/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

2-5-99
Daniel Wright/Date
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

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

Additional comments: _____

_____

_____

_____ 2-5-99

Laboratory Manager Date

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
(X)OMA FM0097F147 UST Remediation

Project No: IJO 99-0078 UST (REM.)
Location: BUILDING 1220
UST # 81533-184
CASE # 98-06-12-0835-45

Samplers Name / Company : Tim Walker (SMC/VERSAR)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS						H-Nu Readings	Remarks / Preservation Method
4230. 01	1220-7(15')	1-29-99	0825	SOIL	1	X	X						0	ICE
02	1220-8(15')		0820		1	X	X						0	
03	1220-9(15')		0815		1	X	X						0	
04	1220-10(16')		0800		1	X	X						0	
05	1220-11(15')		0830		1	X	X						0	
06	1220-P2R(3')		1020	SOIL	1	X	X						0	

Comments: RUSH ASAP

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Tim Walker	1-29-99 925				
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 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: H-NU CALIBRATION-ZERO GAS = 0.0 PPM
100 PPM ISOBUTYLENE; 58 PPM @ 9.8 SPAN
SMC H-NU #1; SN 701463

print legibly

SMCcoc1/25/99

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

Client :	U.S. Army	**Lab. ID # :**	4230
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Jan-99
	Bldg. 173	**Analysis Start:**	29-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	01-Feb-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	Bldg. 1220

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4230.01	1220-7(15')	**1.00**	15.64	74.65	201	**ND**
4230.02	1220-8(15')	**1.00**	15.10	74.78	208	**ND**
4230.03	1220-9(15')	**1.00**	15.13	69.63	223	**ND**
4230.04	1220-10(16')	**1.00**	15.96	71.23	207	**ND**
4230.05	1220-11(15')	**1.00**	15.70	73.77	203	**ND**
4230.06	1220-PR2(3')	**1.00**	15.86	85.92	172	**241.97**
METHOD BLANK	TBLK 213	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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 2/5/99

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 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. 1220A

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1220-A	5370.01	Aqueous	22-Apr-00 11:00	04/24/00

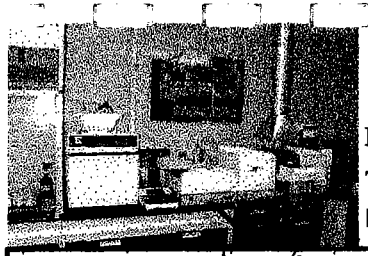
ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

5-8-00
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:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: D. DeAtley
Phone #: 2/475
( )DERA ( )OMA ( )Other:_____

Project No:
Location: 1220A

Samplers Name / Company: Corey McCormack, TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	1,2,4-TMB + 15	Xylene	B/N + 15					H2S Rec'd	Comments: Remarks / Preservation Method
5370 . 01	1220A-1	4/22/00	1100	AQ	3	✓	✓	✓					0.0	HCL/<4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/24/00 0730	J. Wright			
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, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks: Shares Trip / FB / Dupe from 875 same date. D. COM

200002

print legibly

Coc.xls4/19/00

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.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 5370

Site: Bldg. 876

	Date	Hold Time
Date Sampled	04/22/00	NA
Receipt/Refrigeration	04/22,24/00*	NA
Extractions		
1. Base Neutral	04/26/00	14 days
Analyses		
1. Volatile Organics	04/26,27/00	14 days
2. Base Neutral	04/27/00	40 days

- Samples collected and refrigerated on 04/22/00, Laboratory received the sample on Monday 04/24/00.

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 NA	
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 NA	
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 NA	

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 NA

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: 5-8-00

VOLATILES
ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	: Method Detection Limit
J	: Compound Identified Below Detection Limit
B	: Compound is in Both Sample and Blank
D	: Results are from a Dilution of the 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 Number #13461

Data File	**VC003143.D**	Sample Name	**Vblk80**
Operator	**Skelton**	Field ID	**Vblk80**
Date Aquired	**26-Apr-00**	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	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	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	
75-34-3	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	
156594	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 97

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

D:\HPCHEM\Custrpt\Volatile\624fy00.crt

5/3/00 11:16 AM

000012

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk80**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 5370 Location: 1220A SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Vblk80

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC003143.D

Level: (low/med) LOW Date Received: 4/24/00

% Moisture: not dec. Date Analyzed: 4/26/00

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 Number #13461

Data File	**VC003170.D**	Sample Name	**5370.01**
Operator	**Skelton**	Field ID	**1220A-1**
Date Aquired	**27-Apr-00**	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	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	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	
75-34-3	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	
156594	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	33.08	57081	1.03 ug/L	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene	33.08	57081	1.02 ug/L	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene	33.96	53108	0.99 ug/L	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 97

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

5/3/00 11:16 AM

D:\HPCHEM\Custrpt\Volatile\624fy00.crt

000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **1220A-1**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 5370 Location: 1220A SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5369.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC003169.D

Level: (low/med) LOW Date Received: 4/24/00

% Moisture: not dec. Date Analyzed: 4/27/00

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	**BNA03856.D**	Sample Name	**Sblk365**
Operator	**Bhaskar**	Misc Info	**Sblk365 A 000426**
Date Acquired	**27-Apr-00**	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	
108-60-1	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	0.96	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	**BNA03856.D**	Sample Name	**Sblk365**
Operator	**Bhaskar**	Misc Info	**Sblk365 A 000426**
Date Acquired	**27-Apr-00**	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: **Sblk365**

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5370 Location 1220A SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Sblk365

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03856.D

Level: (low/med) LOW Date Received: 4/24/00

% Moisture: decanted: (Y/N) N Date Extracted: 4/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/27/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

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	**BNA03862.D**	Sample Name	**5370.01**
Operator	**Bhaskar**	Misc Info	**1220A-1**
Date Acquired	**27-Apr-00**	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	
108-60-1	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	0.96	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	**BNA03862.D**	Sample Name	**5370.01**
Operator	**Bhaskar**	Misc Info	**1220A-1**
Date Acquired	**27-Apr-00**	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: **1220A-1**

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5370 Location 1220-A SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5370.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03862.D

Level: (low/med) LOW Date Received: 4/24/00

% Moisture: decanted: (Y/N) N Date Extracted: 4/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/27/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

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	NA
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 5/16/00

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. 1220

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	5426.01	Aqueous	22-May-00	05/22/00
Field Blank	5426.02	Aqueous	22-May-00 09:50	05/22/00
1220.1- 14-18'	5426.03	Aqueous	22-May-00 1015	05/22/00

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

6-8-00

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:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

000002

Customer: D. DESAI
Phone #:
( )DERA (M)OMA ( )Other:_____

Project No: 00-0004
Location: BLDG. 1220

Samplers Name / Company: MACK LAURA - TVS - PWS 07

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	BN+15							Comments: Remarks / Preservation Method
5426 1	TRIP BLANK	5-22-00	–	AQ.	2	X								HCL
2	Field Blank	"	0950	"	3	X	X							HCL, <4°C
3	1220-1-14-18'	"	1015	"	3	X	X							" , "

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	5-22-00 1300	[signature]			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]					

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

Remarks:

print legibly

Coc.xls5/4/00

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 NA

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 NA

   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 NA

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

Indicate Yes, No, N/A

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

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: 6-8-00

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 5426

Site: Bldg. 1220

	Date	Hold Time
Date Sampled	05/22/00	NA
Receipt/Refrigeration	05/22/00	NA
Extractions		
1. Base Neutral	05/24/00	14 days
Analyses		
1. Volatile Organics	05/24/00	14 days
2. Base Neutral	05/26/00	40 days

VOLATILES
ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	: Method Detection Limit
J	: Compound Identified Below Detection Limit
B	: Compound is in Both Sample and Blank
D	: Results are from a Dilution of the 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	**VB006952.D**	Sample Name	**Vblk212**
Operator	**Skelton**	Field ID	**Vblk212**
Date Acquired	**24 May 2000 1:29 pm**	Sample Multiplier	**10**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	18.50 ug/L	
107131	Acrylonitrile			not detected	50	27.80 ug/L	
75650	tert-Butyl alcohol			not detected	nle	85.20 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	1.60 ug/L	
108203	Di-isopropyl ether			not detected	nle	2.50 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	16.80 ug/L	
74-87-3	Chloromethane			not detected	30	11.60 ug/L	
75-01-4	Vinyl Chloride			not detected	5	10.60 ug/L	
74-83-9	Bromomethane			not detected	10	11.00 ug/L	
75-00-3	Chloroethane			not detected	nle	10.10 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	5.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	2.40 ug/L	
67-64-1	Acetone			not detected	700	13.60 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	4.60 ug/L	
75-09-2	Methylene Chloride			not detected	2	2.40 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	1.60 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	1.20 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	7.80 ug/L	
78-93-3	2-Butanone			not detected	300	6.20 ug/L	
156-59-4	cis-1,2-Dichloroethene			not detected	10	1.70 ug/L	
67-66-3	Chloroform			not detected	6	3.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	2.30 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	4.70 ug/L	
71-43-2	Benzene			not detected	1	2.30 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	1.80 ug/L	
79-01-6	Trichloroethene			not detected	1	2.30 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	4.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	5.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	6.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	6.90 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	5.90 ug/L	
108-88-3	Toluene			not detected	1000	3.70 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	8.70 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	4.80 ug/L	
127-18-4	Tetrachloroethene			not detected	1	3.20 ug/L	
591-78-6	2-Hexanone			not detected	nle	7.10 ug/L	
126-48-1	Dibromochloromethane			not detected	10	8.60 ug/L	
108-90-7	Chlorobenzene			not detected	4	3.90 ug/L	
100-41-4	Ethylbenzene			not detected	700	6.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	11.40 ug/L	
1330-20-7	o-Xylene			not detected	nle	6.20 ug/L	
100-42-5	Styrene			not detected	100	5.60 ug/L	
75-25-2	Bromoform			not detected	4	7.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	4.70 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	5.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	5.70 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	6.40 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

C:\Hpchem\Custrpt\Volatile\624fy99.crt

6/5/00 9:28 AM

000012

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **Vblk212**

Lab Name: FMETL Project: 000004

NJDEP#: 13461 Case No.: 5426 Location: 1220 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Vblk212

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB006952.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: not dec. Date Analyzed: 5/24/00

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	**VB006962.D**	Sample Name	**5426.01**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**24 May 2000 8:35 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	
75718	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	
75-34-3	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	
156-59-4	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

C:\Hpchem\Custrpt\Volatile\624fy99.crt

6/5/00 9:28 AM

000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Trip Blank

Lab Name: FMETL Project: 000004

NJDEP#: 13461 Case No.: 5426 Location: 1220 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5426.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB006962.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: not dec. Date Analyzed: 5/24/00

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	**VB006963.D**	Sample Name	**5426.02**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**24 May 2000 9:15 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	
75718	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	
75-34-3	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	
156-59-4	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

C:\Hpchem\Custrpt\Volatile\624fy99.crt

000016

6/5/00 9:28 AM

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: 000004

NJDEP#: 13461 Case No.: 5426 Location: 1220 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5426.02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB006963.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: not dec. Date Analyzed: 5/24/00

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	**VB006964.D**	Sample Name	**5426.03**
Operator	**Skelton**	Field ID	**1220-1**
Date Acquired	**24 May 2000 9:55 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	
75718	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	
75-34-3	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	
156-59-4	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.44	75226	2.91 ug/L	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

C:\Hpchem\Custrpt\Volatile\624fy99.crt

6/5/00 9:28 AM

000018

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **1220-1**

Lab Name: FMETL Project: 000004

NJDEP#: 13461 Case No.: 5426 Location: 1220 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5426.03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB006964.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: not dec. Date Analyzed: 5/24/00

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	**BN04379.D**	Sample Name	**Sblk374**
Operator	**Bhaskar**	Misc Info	**Sblk374 A 000524**
Date Acquired	**26-May-00**	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	**BN04379.D**	Sample Name	**Sblk374**
Operator	**Bhaskar**	Misc Info	**Sblk374 A 000524**
Date Acquired	**26-May-00**	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: **Sblk374**

Lab Name: FMETL Lab Code 13461

Project: 000004 Case No.: 5426 Location: Bl.1220 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: Sblk374

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04379.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: decanted: (Y/N) N Date Extracted: 5/24/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 5/26/00

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	**BN04386.D**	Sample Name	**5426.02**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**26-May-00**	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	**BN04386.D**	Sample Name	**5426.02**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**26-May-00**	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	30.11	355635	7.53 ug/L	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: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: 000004 Case No.: 5426 Location: Bl.1220 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 5426.02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04386.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/24/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 5/26/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.23	6	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN04387.D**	Sample Name	**5426.03**
Operator	**Bhaskar**	Misc Info	**1220-1**
Date Acquired	**26-May-00**	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	**BN04387.D**	Sample Name	**5426.03**
Operator	**Bhaskar**	Misc Info	**1220-1**
Date Acquired	**26-May-00**	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: **1220-1**

Lab Name: FMETL Lab Code 13461

Project: 000004 Case No.: 5426 Location: Bl.1220 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 5426.03

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04387.D

Level: (low/med) LOW Date Received: 5/22/00

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/24/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 5/26/00

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

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 N/A
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 6/8/00

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