United States Army

Fort Monmouth, New Jersey

Site/Remedial Investigation Report

Building 550
Main Post-West Area

July 1999

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 550

MAIN POST-WEST AREA

JULY 1999

PREPARED FOR:

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

PREPARED BY:

SMC ENVIRONMENTAL SERVICES GROUP 1900 FROST ROAD SUITE 110 BRISTOL, PA 19007

PROJECT NO. 2429-308

550.DOC

u ii

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iv
1.0 BACKGROUND INFORMATION	1
1.1 OVERVIEW	1
1.2 SITE DESCRIPTION	1
1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING	1
1.4 HEALTH AND SAFETY	3
2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES	4
2.1 OVERVIEW	4
2.2 FIELD SCREENING/MONITORING	4
2.3 MANAGEMENT OF EXCAVATED SOILS	5
2.4 POST-EXCAVATION SOIL SAMPLING AND RESULTS	5
2.5 GROUNDWATER SAMPLING	6
3.0 CONCLUSIONS AND RECOMMENDATIONS	7
3.1 SOIL SAMPLING RESULTS	7
3.2 GROUNDWATER SAMPLING RESULTS	7
3.3 CONCLUSION AND RECOMMENDATIONS	8

TABLE OF CONTENTS (CONTINUED)

TABLES

Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results
Table 3	VOA Results

Groundwater Sampling Results Table 4

FIGURES

7.3

L #

Site Location Map Figure 1

Figure 2 Site Map

Figure 3 **Soil Sampling Location Map**

APPENDICES

Appendix A Soil Analytical Data Package

Appendix B Groundwater Analytical Data Package

Appendix C Photographs

EXECUTIVE SUMMARY

Site/Remedial Investigation and Post-Excavation Soil Sampling

SMC 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 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove potentially impacted soil resulting from the past operation of the former UST. The site/remedial investigation was performed by SMC 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 PID readings and verify the effectiveness of the soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. All samples were initially analyzed for TPHC and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds below the NJDEP soil cleanup criteria.

Management of Excavated Soils

A total of approximately 1000 cubic yards of contaminated soil was excavated from around the former UST location and placed on and covered with tarps. 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 backfilled to grade with certified clean crushed stone and sand.

Conclusions and Recommendations

All post excavation soil samples collected from the UST excavation at Building 550 contained concentrations of TPHC and volatile organic compounds below the NJDEP residential soil cleanup criteria.

In response to the observation of potentially contaminated soil near the water table, two (2) groundwater samples were collected at Building 550. On December 10, 1998, and January 13, 1999, Building 550 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 at Building 550.

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

SMC Environmental Services Group (SMC) 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 New Jersey Department of Environmental Protection (NJDEP) UST Registration No. 81533-79, was associated with Building 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to site location map in 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 was to remove all potentially impacted soil resulting from the past operation of the former UST.

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

1.2 SITE DESCRIPTION

Building 550 is located in the Main Post-West area of the Fort Monmouth Army Base. The former UST was located a few feet west of the northwest corner of Building 550. A site map is provided in Figure 2.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 550. 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 550 is located approximately 300 feet north of Husky Brook, the nearest water body. Based on Main Post topography, groundwater flow in the area of Building 550 is anticipated to be to the south.

1.4 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 the Occupational Safety & Health Association (OSHA).

2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site/Remedial Investigation was managed and carried out by SMC 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: David H. Daniels

Employer: SMC Environmental Services Group

Phone Number: (215) 788-7844 NJDEP Certification No.: 10279

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 that displayed elevated PID readings (i.e., above 5 ppm) were stockpiled separately from those soils that 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 MANAGEMENT OF EXCAVATED SOILS

A total of approximately 1,200 cubic yards of material was excavated during the remediation activities. Of this amount, approximately 200 cubic yards of clean overburden soil (soil displaying PID readings below 5 ppm) was removed and stockpiled separate of the contaminated soil. There was approximately 1000 cubic yards of contaminated soil (soil displaying PID readings above 5 ppm) excavated, placed on and covered with tarps.

All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth Directorate of Public Works.

2.4 POST-EXCAVATION SOIL SAMPLING AND RESULTS

The excavation of the impacted soil proceeded laterally north, south and west until non-detectable field screening readings (i.e., less than 5 ppm) were obtained with the PID. Along the eastern portion of the excavation, the removal of all potentially impacted soil was not feasible due to the presence of the adjacent Building 550. The excavation extended vertically to a depth of 9 feet below ground surface (bgs). Groundwater was encountered at a depth of 7 feet bgs.

To confirm the PID readings and verify the effectiveness of soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. Of these, 16 soil samples were collected from the excavation sidewalls at a depth of 6-½ feet bgs. The sidewall samples were designated 550-S1 through 550-S24, whereas samples 550-S2 through 550-S6 and 550-S11 through 550-S13 were further remediated and resampled. The remaining 14 post-excavation soil samples were collected from the bottom of the excavation at a depth of 9 feet bgs. The bottom samples were designated 550-B1 through 550-B14 and 550-P1 through 550-P5. Samples 550-B3, 550-B7, 550-B12 and 550-P5 were duplicates and sample 550-B9 was further remediated and resampled. The locations of the 30 post-excavation soil samples are shown in Figure 3.

SMC 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 initially analyzed for total petroleum hydrocarbons (TPHC) and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. 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. A summary of the results of the volatile organic compounds and comparison to the NJDEP soil cleanup criteria is provided in Table 3. The analytical data packages are provided in Appendix A.

The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds 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 backfilled to grade with certified clean crushed stone and sand. Appendix C provides photographs of the site/remedial investigations.

2.5 GROUNDWATER SAMPLING

On December 10,1998, and January 13, 1999, Building 550 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*. Refer to Appendix B for the field sampling documentation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

SMC 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 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove all potentially impacted soil resulting from 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. In all, a total of approximately 1,000 cubic yards of contaminated soil was excavated from around the former UST location. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. All samples were initially analyzed for TPHC and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds 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 backfilled to grade with certified clean crushed stone and sand.

3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the sample collected from Building 550 on December 10, 1998.

The sample collected from Building 550 on January 13, 1999, contained naphthalene at a concentration of 42.80 ug/L, 2-methylnaphthalene at 53.52 ug/l, acenaphthene at 5.26 ug/l, dibenzofuran at 3.01 ug/l, flourene at 7.02 ug/l, and phenanthrene at 10.62 ug/l. No other compounds were detected. Trichloroethene was detected in the trip blank at a concentration of 5.72 ug/l. The trichloroethene concentration exceeds the GWQS on account of laboratory contamination. No other compounds were detected in the trip blank. The field dup contained naphthalene at a concentration of 37.53 ug/L, 2-methylnaphthalene at 48.65 ug/l, acenaphthene at 4.24 ug/l, dibenzofuran at 2.56 ug/l, flourene at 5.52 ug/l, and phenanthrene at 7.74 ug/. No other compounds were detected in the field dup.

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 4. The analytical data package is provided in Appendix B. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

Groundwater samples collected on December 10, 1998, and January 13,1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSION AND RECOMMENDATIONS

All post excavation soil samples collected from the UST excavation at Building 550 contained concentrations of TPHC and volatile organic compounds below the NJDEP residential soil cleanup criteria.

Based on the analytical results of the groundwater samples collected at Building 550 on December 10, 1998, and January 13, 1999, groundwater quality at Building 550 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 at Building 550.

TABLES

TABLE 1

Heli san

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 1 of 8				, 		
Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-B1	6/16/97	6/19/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
550-B2	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B3	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S1	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 2 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
**550-S2	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-OAM-025
**550-S3	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OOA-QAM-025
**550-S4	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S5	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S6	6/19/97	6/19/97	Søil	Post-Excavation	TPHC	OQA-QAM-025

Note:

TPHC Total Petroleum Hydrocarbons
Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 3 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-S7	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S8	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S9	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B4	6/24/97	6/25/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
550-B5	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S10	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S11	6/24/97	-6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B6	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B7	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S12	6/25/97	6/25/97	Soil -	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 4 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
**550-S13 550-S14 550-S15 550-B8	6/26/97 6/26/97 6/26/97 6/26/97	6/27/97 6/27/97 6/27/97 6/27/97	Soil Soil Soil Soil	Post-Excavation Post-Excavation Post-Excavation Post-Excavation	TPHC TPHC TPHC TPHC TPHC	OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025

Note:

TPHC Total Petroleum Hydrocarbons
Sample area was further remediated and resampled

TABLE 1 SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 5 of 8				<u> </u>		
Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-S16	7/1/97	7/2/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
550-S17	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-B9	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S18	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

TPHC Total Petroleum Hydrocarbons
Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 6 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-P1	7/15/97	7/16/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
550-P2	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P3	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P4	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P5	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 7 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-B10	7/28/97	7/28/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
550-B11	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B12	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B13	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B14	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S19	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S20	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S21	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S22	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S23	7/2897	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S24	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES **BUILDING 550, MAIN POST-WEST AREA** FORT MONMOUTH, NEW JERSEY

Page 8 of 8

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4136.01	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.02	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.01	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.02	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.01	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.02	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.03	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.04	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.05	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:

*VOCs: *SVOCs:

Volatile Organic Compounds plus 15 tentatively identified compounds Semivolatile organic compounds plus 15 tentatively identified compounds Passively Placed Narrow Diameter Point

**PPNDP:

TABLE 2

The second

TABLE 2

Page 1 of 7

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
550-B1=	2699.01	6/16/97	6/19/97	Total Solid			81.75		
				TPHC	187	Yes	ND	10,000	No
550-B2 =	2699.02	6/16/97	6/19/97	Total Solid			76.54		
				TPHC	201	Yes	ND	10,000	No
550-B3=	2699.03	6/16/97	6/19/97	Total Solid			77.28		
				TPHC	196	Yes	ND	10,000	No
550-S1 =	2699.04	6/16/97	6/19/97	Total Solid			84.61		
				TPHC	174	Yes	ND	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 2

Page 2 of 7

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
***550-S2=	2709:01	6/19/97	6/19/97	Total Solid		-	81.92	4364 ₆ 5	
			÷	TPHC	183	Yes	6135.65	10,000	No
***550-\$3=	2709.02	6/19/97	6/19/97	Total Solid	er a market en e		85,19	22	. 7
				TPHC	182	Yes	4366.19	10,000	No
***550-S4=	2709.03	6/19/97	6/19/97	Total Solid	<u> </u>	14	80.52		<u></u> -
				TPHC	181	Yes	9136:31	10,000	No
***550-S5=	2709.04	6/19/97	6/19/97	Total Solid		<u> 12</u>	80.62		
				TPHC	195	Yes	3708.27	10,000	No
***550-S6=	2709.05	6/19/97	6/19/97	Total Solid	75.00		. 81.38		
				TPHC'	174	Yes	11887.77	10,000	Yes

Note:

Total Solid results are expressed as a percentage.

NJDEP Residential Direct Contact soil cleanup criteria for total organics

Sample area was further remediated and resampled **

Not detected above stated sample quantitation limit

TABLE 2

Page 3 of 7

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
550-S7=	2735.01	6/24/97	6/25/97	Total Solid			78.52		
				TPHC	196	Yes	ND	10,000	No
550-S8=	2735.02	6/24/97	6/25/97	Total Solid		, 	74.14		
				TPHC	194	Yes	666.74	10,000	No
550-S9=	2735.03	6/24/97	6/25/97	Total Solid	`		72.85		
				TPHC	211	Yes	ND	10,000	No
550-B4=	2735.04	6/24/97	6/25/97	Total Solid			75.49		
				TPHC	195	Yes	ND	10,000	No
550-B5 =	2735.05	6/24/97	6/25/97	Total Solid			75.17		
				TPHC	199	Yes	ND	10,000	No
550-S10=	2735.06	6/24/97	6/25/97	Total Solid			81.38		
				TPHC	184	Yes	ND	10,000	No
***550-S11=	2735.07	6/24/97	6/25/97	Total Solid	-4		80,13		
	eraging, co.	are the second		TPHC	- 194	Yes	ND	10,000	No
550-B6 =	2735.08	6/24/97	6/25/97	Total Solid			79.95		
				TPHC	191	Yes	ND	10,000	No
550-B7 =	2735.09	6/24/97	6/25/97	Total Solid			82.95		
				TPHC	181	Yes	ND	10,000	No
***550-S12=	2735,10	6/25/97	6/25/97	Total Solid	gradite - Street	-4	84.79	2.544	in co rt
				TPHC	167	Yes	3344.46	10,000	No

Note:

Total Solid results are expressed as a percentage.

NJDEP Residential Direct Contact soil cleanup criteria for total organics

Sample area was further remediated and resampled **

Not detected above stated sample quantitation limit

TABLE 2 POST-EXCAVATION SOIL SAMPLING RESULTS AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 4 of 7		·····					<u>-</u>		
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
***550-S13=	2748.01	6/26/97	6/27/98	Total Solid TPHC	 165	Yes	83.96 5662.78	T0,000	 No
550-S14 =	2748.02	6/26/97	6/27/98	Total Solid			84.07		
				TPHC	182	Yes	ND	10,000	No
550-S15 =	2748.03	6/26/97	6/27/98	Total Solid			85.80		
				TPHC	163	Yes	6553.80	10,000	No
550-B8=	2748.04	6/26/97	6/27/98	Total Solid			81.80		
				TPHC	191	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 area was further remediated and resampled ***

Not detected above stated sample quantitation limit

TABLE 2

Page 5 of 7

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
550-S16=	2763.07	7/1/97	7/2/97	Total Solid			80.98		
				TPHC	189	Yes	3311.90	10,000	No
550-S17 =	2763.08	7/1/97	7/2/97	Total Solid			85.49		
				TPHC	181	Yes	ND	10,000	No
***550-B9=	2763.09	7/1/97.	7/2/97	Total Solid	g Green	reie Tengala	74.58	j a -pila	-
				TPHC	201	Yes	20565.24	10,000	Yes
550-S18=	2763.10	7/1/97	7/2/97	Total Solid			84.10		
				TPHC	186	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 area was further remediated and resampled **

-- Not detected above stated sample quantitation limit
TPHC Total Petroleum Hydrocarbons

TABLE 2 POST-EXCAVATION SOIL SAMPLING RESULTS

AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 6 of 7

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
550-P1=	2799.01	7/15/97	7/16/97	Total Solid			83.33		
				TPHC	183	Yes	ND	10,000	No
550-P2 =	2799.02	7/15/97	7/16/97	Total Solid			83.63		
				TPHC	187	Yes	ND	10,000	No
550-P3 =	2799.03	7/15/97	7/16/97	Total Solid			83.60		
				TPHC	189	Yes	ND	10,000	No
550-P4=	2799.04	7/15/97	7/16/97	Total Solid			82.42		
				TPHC	191	Yes	ND	10,000	No
550-P5 =	2799.05	7/15/97	7/16/97	Total Solid			78.88		
				TPHC	193	Yes	ND	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

TABLE 2 POST-EXCAVATION SOIL SAMPLING RESULTS AREA 550, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 7 of 7

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
550-B10=	2838.01	7/28/97	7/28/97	Total Solid			82.42		
				TPHC	181	Yes	302.72	10,000	No
550-B11 =	2838.02	7/28/97	7/28/97	Total Solid			81.14		
				TPHC	186	Yes	ND	10,000	No
550-B12 =	2838.03	7/28/97	7/28/97	Total Solid			85.50		
				TPHC	182	Yes	ND	10,000	No
550-B13=	2838.04	7/28/97	7/28/97	Total Solid			82.17		
				TPHC	178	Yes	ND	10,000	No
550-B14=	2838.05	7/28/97	7/28/97	Total Solid			80.15		
				TPHC	187	Yes	ND	10,000	No
550-S19=	2838.06	7/28/97	7/28/97	Total Solid			87.54		
				TPHC	167	Yes	ND	10,000	No
550-S20=	2838.07	7/28/97	7/28/97	Total Solid			82.72		 .
				TPHC	179	Yes	ND	10,000	No
550-S21=	2838.08	7/28/97	7/28/97	Total Solid			81.31		
				TPHC	185	Yes	269.29	10,000	No
550-S22=	2838.09	7/28/97	7/28/97	Total Solid			89.25		
				TPHC	173	Yes	ND	10,000	No
550-S23=	2838.10	7/28/97	7/28/97	Total Solid			92.11	-	
		-,		TPHC	164	Yes	ND	10,000	No
550-S24=	2838.11	7/28/97	7/28/97	Total Solid			89.96	, 	
				TPHC	171	Yes	ND	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 **

TABLE 3

Definition of Qualifiers

MDL: Method Detection Limit

J : Compound identified below detection limit

B : Compound in both sample and blank

D: Results from dilution of sample

U : Compound searched for but not detected

1 of 6

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2748 Location: AREA 550 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

CONCENTRATION UNITS: (ug/L or ug/Kg)

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
107028	Acrolein	580	U	NA	NA
107131	Acrylonitrile	580	U	1000	5000
75650	tert-Butyl alcohol	580	U	NA	NA
1634044	Methyl-tert-Butyl ether	580	U	NA	NA
108203	Di-isopropyl ether	580	U	NA	NA
	Dichlorodifluoromethane	58	U	NA	NA
74-87-3	Chloromethane	58	U	520000	100000(d)
75-01-4	Vinyl Chloride	58	U	2000	7000
74-83-9	Bromomethane	58	U	79000	100000(d)
75-00-3	Chloroethane	58	U	NA	NA
75-69-4	Trichlorofluoromethane	58	U	NA	NA
75-35-4	1, 1-Dichloroethene	58	U	8000	150000
67-64-1	Acetone	58	U	1000000(d)	100000(d)
75-15-0	Carbon Disulfide	58	U	NA	NA
75-09-2	Methylene Chloride	58	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	58	U	1000000(d)	100000(d)
75-35-3	1,1-Dichloroethane	58	U	570000	1000000(d)
108-05-4	Vinyl Acetate	58	U	NA	NA
78-93-3	2-Butanone	58	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	58	Ū	79000	1000000(d)
67-66-3	Chloroform	58	U	19000(k)	28000(k)

2 of 6

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: <u>2748</u> Location: <u>AREA 550</u> SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

CONCENTRATION UNITS:

(ug/L or ug/Kg)

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
75-55-6	1,1,1-Trichloroethane	58	U	NA	NA
56-23-5	Carbon Tetrachloride	58	U	2000(k)	4000(k)
71-43-2	Benzeze	58	U	3000	13000
107-06-2	1,2-Dichloroethane	58	U	6000	24000
79-01-6	Trichloroethene	58	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	58	U	10000	43000
75-27-4	Bromodichloromethane	58	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	58	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	58	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	58	U	1000000(d)	1000000(d)
108-88-3	Toluene	58	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	58	U	NA	NA
79-00-5	1,1,2-Trichloroethane	58	U	22000	420000
127-18-4	Tetrachloroethene	58	U	4000(k)	6000(k)
591-78-6	2-Hexanone	58	U	NA	NA
126-48-1	Dibromochloromethane	58	U	NA	NA
108-90-7	Chlorobenzene	58	U	37000	680000
100-41-4	Ethylbenzene	45	JD	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	58	U	NA	NA

ألت

3 Of 6

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: <u>2748</u> Location: <u>AREA 550</u> SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

CONCENTRATION UNITS: (ug/L or ug/Kg)

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
1330-20-7	o-Xylene	58	U	NA	NA
100-42-5	Styrene	58	U	23000	97000
75-25-2	Bromoform	58	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	58	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	58	U	5100000	1000000(c)
106-46-7	1,4-Dichlorobenzene	58	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	58	U	5100000	1000000(c)

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: <u>2763</u> Location: <u>AREA 550</u> SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2763.07

CONCENTRATION UNITS: (ug/L or ug/Kg)

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
107028	Acrolein	7200	U	NA	NA
107131	Acrylonitrile	7200	U	1000	5000
75650	tert-Butyl alcohol	7200	U	NA	NA
1634044	Methyl-tert-Butyl ether	7200	U	NA	NA
108203	Di-isopropyl ether	7200	U	NA	NA
	Dichlorodifluoromethane	720	U	NA	NA
74-87-3	Chloromethane	720	U	520000	100000(d)
75-01-4	Vinyl Chloride	720	υ	2000	7000
74-83-9	Bromomethane	720	U	79000	1000000(d)
75-00-3	Chloroethane	720	U	NA	NA
75-69-4	Trichlorofluoromethane	720	U	NA	NA
75-35-4	1, 1-Dichloroethene	720	U	8000	150000
67-64-1	Acetone	720	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	720	U	NA	NA
75-09-2	Methylene Chloride	720	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	720	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	720	U	570000	1000000(d)
108-05-4	Vinyl Acetate	720	U	NA	NA
78-93-3	2-Butanone	720	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	720	U	79000	1000000(d)
67-66-3	Chloroform	720	U	19000(k)	28000(k)

C J

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2763 Location: AREA 550 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2763.07

CONCENTRATION UNITS: (ug/L or ug/Kg)

CAS NO. **PARAMETER** RESULTS **QUALIFIER** RESIDENTIAL NON-RESIDENTIAL 75-55-6 1,1,1-Trichloroethane 720 U NA NA 720 U 2000(k)4000(k) 56-23-5 Carbon Tetrachloride 3000 720 U 13000 71-43-2 Benzeze 6000 107-06-2 1,2-Dichloroethane 720 U 24000 23000 720 U 79-01-6 Trichloroethene 54000(k) 78-87-5 1, 2-Dichloropropane 720 U 10000 43000 75-27-4 Bromodichloromethane 720 U 11000(g) 46000(g) 720 U NA 110-75-8 2-Chloroethyl vinyl ether NA 720 U NA 10061-01-5 cis-1,3-Dichloropropene NA 108-10-1 4-Methyl-2-Pentanone 720 U 1000000(d) 1000000(d) 720 U 1000000(d) 108-88-3 Toluene 1000000(d) 720 U NA 10061-02-6 trans-1,3-Dichloropropene NA 720 U 22000 420000 79-00-5 1,1,2-Trichloroethane 4000(k) Tetrachloroethene 127-18-4 720 U 6000(k) 720 U 591-78-6 NA NA 2-Hexanone 126-48-1 Dibromochloromethane 720 U NA NA 720 U 37000 680000 108-90-7 Chlorobenzene 720 U 1000000(d) 100-41-4 Ethylbenzene 1000000(d) 1330-20-7 m+p-Xylenes 720 U NA NA

6 0f 6

Table 3 **VOLATILE ORGANICS ANALYSIS DATA SHEET**

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Project:

961226

Case No.:

<u>2763</u>

Location:

AREA 550

SDG No.:

Matrix: (soil/water) SOIL

Lab Sample ID: <u>2763.07</u>

CONCENTRATION UNITS: (ug/L or ug/Kg)

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
1330-20-7	o-Xylene	720	U	NA	NA
100-42-5	Styrene	720	U	23000	97000
75-25-2	Bromoform	720	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	720	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	720	υ	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	720	U	570000	1000000(c)
95-50-1	1,2-Dichlorobenzene	720	U	5100000	1000000(c)

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

- (A) CRITERIA ARE HEALTH BASED USING AN INCIDENTAL INGESTION EXPOSURE PATHWAY EXCEPT WHERE NOTED BELOW.
- (B) CRITERIA ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC FACTORS (E.G., AQUIFER CLASSIFICATION, SOIL TYPE, NATURAL BACKGROUND, ENVIRONMENTAL IMPACTS, ETC.)
- (C) HEALTH BASED CRITERION EXCEEDS THE 10,000 MG/KG MAXIMUM FOR TOTAL ORGANIC CONTAMINANTS.
- (D) HEALTH BASED CRITERION EXCEEDS THE 1000 MG/KG MAXIMUM FOR TOTAL VOLATILE ORGANIC CONTAMINANTS
- (E) CLEANUP STANDARD PROPOSAL WAS BASED ON NATURAL BACKGROUND.
- (F) HEALTH BASED CRITERION IS LOWER THAN ANALYTICAL LIMITS; CLEANUP CRITERION BASED ON PRACTICAL QUANTITATION LEVEL.
- (G) CRITERION HAS BEEN RECALCULATED BASED ON NEW TOXICOLOGICAL DATA.
- THE IMPACT TO GROUND WATER VALUES FOR INORGANIC CONSTITUENTS WILL BE DEVELOPED BASED UPON SITE SPECIFIC CHEMICAL AND PHYSICAL PARAMETERS.
- (I) ORIGINAL CRITERION WAS INCORRECTLY CALCULATED AND HAS BEEN RECALCULATED.
 - (J) Typographical error.
 - (K) CRITERIA BASED ON INHALATION EXPOSURE PATHWAY, WHICH YIELDED A MORE STRINGENT CRITERION THAN THE INCIDENTAL INGESTION EXPOSURE PATHWAY.
 - (L) NEW CRITERION DERIVED USING METHODOLOGY IN THE BASIS AND BACKGROUND DOCUMENT.
 - (M) CRITERION BASED ON ECOLOGICAL (PHYTOTOXICITY) EFFECTS.
 - (N) LEVEL OF THE HUMAN HEALTH BASED CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ENVIRONMENTAL IMPACTS ON A SITE BY SITE BASIS IS RECOMMENDED.

- (0) LEVEL OF THE CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ACUTE EXPOSURE HAZARD IS RECOMMENDED.
 - (P) CRITERION BASED ON THE USEPA INTEGRATED EXPOSURE UPTAKE BIOKINETIC (IEUBK) MODEL UTILIZING THE DEFAULT PARAMETERS. THE CONCENTRATION IS CONSIDERED TO PROTECT 95% OF TARGET POPULATION (CHILDREN) AT A BLOOD LEVEL OF 10 UG/DL.
- (Q) CRITERIA WAS DERIVED FROM A MODEL DEVELOPED BY THE SOCIETY FOR ENVIRONMENTAL GEOCHEMISTRY AND HEALTH (SEGH) AND WAS DESIGNED TO BE PROTECTIVE FOR ADULTS IN THE WORKPLACE.
 - (R) INSUFFICIENT INFORMATION AVAILABLE TO CALCULATE IMPACT TO GROUND WATER CRITERIA.

TABLE 4

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4136.01(Trip Blank)

Date Sampl	ed: <u>12/10/98</u>	Location	: <u>550</u>	Lab Sample ID: 4136.01(Trip Blank)			
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	по	
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	<u></u>	2	no	
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected		100	по	
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	по	
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected		30	по	
56-23-5	Carbon Tetrachloride	0.47	Not Detected		2	no	
71-43-2	Benzeze	0.23	Not Detected		1	по	
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	по	
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected		nle	no	

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4136.01(Trip Blank)

Date Sample	u: <u>12/10/98</u>	Location	i. <u>550</u>	Laus	imple 1D: 4130.0	(Trip blank)
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	по
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	по
108-90-7	Chlorobenzene	0.39	Not Detected		4	по
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	по
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 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

a j

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

550

Lab Sample ID: 4136.02(Field Blank)

Date Sampl	led: <u>12/10/98</u>	Location	ı: <u>550</u>	Lab Sample ID: 4136.02(Field Blank)			
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA	
107028	Acrolein	1.85	Not Detected		50	по	
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	по	
108203	Di-isopropyl ether	0.25	Not Detected		nle	no	
	Dichlorodifluoromethane	1.68	Not Detected		nle	по	
74-87-3	Chloromethane	1.16	Not Detected		30	по	
75-01-4	Vinyl Chloride	1.06	Not Detected		5	no	
74-83-9	Bromomethane	1.10	Not Detected		10	по	
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	оп	
71-43-2	Benzeze	0.23	Not Detected		· 1	no	
107-06-2	1,2-Dichloroethane	0.18	Not Detected		2	по	
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	по	

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

13461

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4136.02(Field Blank)

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

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4137.01(Bldg 550)

Date Samp	led. <u>12/10/98</u>	Location	. <u>550</u>	Lausa	imple 1D. 4137.0	1(Diug 330)
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	по
75650	tert-Butyl alcohol	8.52	Not Detected		nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected		nle	по
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	по
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	по
67-64-1	Acetone	1.36	Not Detected		700	по
75-15-0	Carbon Disulfide	0.46	Not Detected		nle	по
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 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

13461

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4137.01(Bldg 550)

Date Sampled. <u>12/10/38</u>		Location	. <u>550</u>	Duo o	71(Diag 550)	
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	по
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 4 SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4136.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected		nle	по
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected		20	no
62-53-3	Aniline	0.15	Not Detected		nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected		10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected		600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	-	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected		nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected		600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected		300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected		20	по
67-72-1	Hexachloroethane	0.46	Not Detected		10	по
98-95-3	Nitrobenzene	0.35	Not Detected		10	no
78-59-1	Isophorone	0.46	Not Detected		100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected		nle	по
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected		9	по
91-20-3	Naphthalene	0.25	Not Detected		nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected		nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected		1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected		nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected		50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected		пlе	по
88-74-4	2-Nitroaniline	0.21	Not Detected		nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected		7000	по
208-96-8	Acenaphthylene	0.19	Not Detected		nle	no

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.02(Field Blank)

Date Sample	ed: <u>12/10/98</u>	Location:	<u>330</u>	Lao S	ample 1D: 4136.0	2(Field Blank)
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected		nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected		nle	no
83-32-9	Acenaphthene	0.26	Not Detected		400	no
132-64-9	Dibenzofuran	0.32	Not Detected	<u></u>	nle	по
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected		10	no
84-66-2	Diethylphthalate	0.82	Not Detected		5000	no
86-73-7	Fluorene	0.29	Not Detected		300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected		nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected		nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected		20	no
103-33-3	Azobenzene	0.80	Not Detected		nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected		nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected		10	no
85-01-8	Phenanthrene	0.18	Not Detected		nle	no
120-12-7	Anthracene	0.19	Not Detected		2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected		900	no
206-44-0	Fluoranthene	0.41	Not Detected		300	по
92-87-5	Benzidine	1.45	Not Detected		50	no
129-00-0	Pyrene	0.32	Not Detected		200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected		100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected		10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected		60	no
218-01-9	Chrysene	0.20	Not Detected		20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected		30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected		100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected		10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected		2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	-	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected		20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected		20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected		nle	no
L.,	<u> </u>	ــــــــــــــــــــــــــــــــــــــ				

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name:

أدات

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

12/10/98

Location:

<u>550</u>

Lab Sample ID: 4137.02(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected		nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected		20	no
62-53-3	Aniline	0.15	Not Detected	-	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected		10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected		600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	-	75	по
100-51-6	Benzyl alcohol	0.18	Not Detected		nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected		600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected		300	по
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected		20	no
67-72-1	Hexachloroethane	0.46	Not Detected		10	no
98-95-3	Nitrobenzene	0.35	Not Detected		10	по
78-59-1	Isophorone	0.46	Not Detected		100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected		nle	по
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	****	9	no
91-20-3	Naphthalene	0.25	Not Detected		nle	по
106-47-8	4-Chloroaniline	0.19	Not Detected		nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected		1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected		nle	по
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected		50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected		nle	по
88-74-4	2-Nitroaniline	0.21	Not Detected		nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	-	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected		nle	no

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4137.02(Bldg 550)

•					-	
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected		лІе	no
99-09-2	3-Nitroaniline	0.26	Not Detected		nle	no
83-32-9	Acenaphthene	0.26	Not Detected		400	no
132-64-9	Dibenzofuran	0.32	Not Detected		nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected		10	no
84-66-2	Diethylphthalate	0.82	Not Detected		5000	по
86-73-7	Fluorene	0.29	Not Detected		300	по
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected		nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected		nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected		20	no
103-33-3	Azobenzene	0.80	Not Detected		nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected		nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected		10	no
85-01-8	Phenanthrene	0.18	Not Detected		nle	по
120-12-7	Anthracene	0.19	Not Detected		2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected		900	no
206-44-0	Fluoranthene	0.41	Not Detected		300	no
92-87-5	Benzidine	1.45	Not Detected	-	50	no
129-00-0	Pyrene	0.32	Not Detected	-	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected		100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected		10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	-	60	no
218-01-9	Chrysene	0.20	Not Detected		20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected		30	по
117-84-0	Di-n-octylphthalate	0.82	Not Detected		100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected		10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected		2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected		20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected		20	до
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected		20	no
191-24-2	Benzo(g,h,i)perylene	0.40	Not Detected		nle	no
	I	_L	L		<u> </u>	L

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.01(Trip Blank)

Date Sample	cd. <u>1/13/22</u>	Docation	. 550	Lab Sa	шрю по. <u>4107.с</u>	A TATIP DIGINA
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	по
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	по
75-35-3	1,1-Dichloroethane	0.12	Not Detected		70	по
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	по
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	по
107-06-2	1,2-Dichloroethane	0.18	Not Detected		2	no
79-01-6	*Triotilorcethène	0.23	5.72 ug/L	7.	j j	yes
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	по
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected		nle	no
						

Note:

^{*} Compound exceeds criteria due to laboratory contamination

Table 4 **VOLATILE ORGANICS ANALYSIS DATA SHEET**

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.01(Trip Blank)

Daile Ballipi							
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	по	
1330-20-7	m+p-Xylenes	1.14	Not Detected		nle	ДО	
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	по	
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected		75	no	
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected		600	no	

أوي

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

Date Samp	ieu. <u>1/13/33</u>	Location	. <u>250</u>	Lab St	imple 1D. <u>4107.0</u>	Z(I ICIG DIAIK)
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	по
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	по
75-00-3	Chloroethane	1.01	Not Detected		nle	по
75-69-4	Trichlorofluoromethane	0.50	Not Detected		nle	по
75-35-4	1, 1-Dichloroethene	0.24	Not Detected		2	по
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		I	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
	<u> </u>	1	<u> </u>	1		L

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

<u>13461</u>

Lab Sample ID: 4187.02(Field Blank)

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	по
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	по
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 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>F</u>

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.03(Bldg 550)

Date Sampi	ed: <u>1/13/99</u>	Location	: <u>330</u>	Lao Sa	imple 10: 4187.0	13(Blag 550)
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	по
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	по
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	<u></u>	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	по
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	<u></u> .	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected		70	по
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	по
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	по
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 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

13461

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.03(Bldg 550)

CAS NO. MDL **RESULTS** QUALIFIER REGULATORY **COMPOUND NAME EXCEEDS** LEVEL(ug/L) **CRITERIA** (ug/L) 108-10-1 0.59 4-Methyl-2-Pentanone Not Detected 400 по 108-88-3 Toluene 0.37 Not Detected 1000 -по 10061-02-6 trans-1,3-Dichloropropene 0.87 Not Detected nle no 79-00-5 0.48 Not Detected 1.1.2-Trichloroethane 3 no 127-18-4 Tetrachloroethene 0.32 Not Detected 591-78-6 2-Hexanone 0.71 Not Detected nle no Dibromochloromethane 0.86 Not Detected 126-48-1 10 no 108-90-7 0.39 Not Detected Chlorobenzene 4 по 100-41-4 Ethylbenzene 0.65 Not Detected 700 1330-20-7 Not Detected m+p-Xylenes 1.14 nle no 1330-20-7 o-Xylene 0.62 Not Detected nle no 100-42-5 Styrene 0.56 Not Detected 100 0.70 Not Detected 75-25-2 Bromoform 4 no 79-34-5 1,1,2,2-Tetrachloroethane 0.47 Not Detected 2 no 0.55 Not Detected 541-73-1 1,3-Dichlorobenzene 600 по 106-46-7 1,4-Dichlorobenzene 0.57 Not Detected 75 95-50-1 1,2-Dichlorobenzene 0.64 Not Detected 600

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

550

Lab Sample ID: 4187.05(Dup 550)

Date Sampled: <u>1/13/99</u>		Location	n: <u>550</u>	Lab Sample ID: 4187.05(Dup 550)			
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	по	
	Dichlorodifluoromethane	1.68	Not Detected		nle	no	
74-87-3	Chloromethane	1.16	Not Detected		30	по	
75-01-4	Vinyl Chloride	1.06	Not Detected	-	5	по	
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	по	
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	по	
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	по	
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected		nle	no	

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

13461

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.05(Dup 550)

					_	
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	по
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	<u></u>	4	по
100-41-4	Ethylbenzene	0.65	Not Detected		700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	-	nle	по
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	по
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected		600	no

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name:

FMETL

NJDEP#

13461

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected		nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected		20	по
62-53-3	Aniline	0.15	Not Detected		nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected		10	по
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected		600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected		75	по
100-51-6	Benzyl alcohol	0.18	Not Detected		nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected		600	по
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected		300	по
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected		20	no
67-72-1	Hexachloroethane	0.46	Not Detected		10	no
98-95-3	Nitrobenzene	0.35	Not Detected		10	по
78-59-1	Isophorone	0.46	Not Detected		100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected		nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected		9	по
91-20-3	Naphthalene	0.25	Not Detected		nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected		nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected		1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected		nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected		50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected		nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected		nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected		7000	no
208-96-8	Acenaphthylene	0.19	Not Detected		nle	по

= 3

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

Date Sampi	od. <u>1715/55</u>	20044011	250		1107.0	D(1 1010 Diame)
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	-	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	-	nle	no
83-32-9	Acenaphthene	0.26	Not Detected		400	no
132-64-9	Dibenzofuran	0.32	Not Detected		nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected		10	по
84-66-2	Diethylphthalate	0.82	Not Detected		5000	no
86-73-7	Fluorene	0.29	Not Detected	-	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected		nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected		nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected		20	по
103-33-3	Azobenzene	0.80	Not Detected	_	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected		nle	по
118-74-1	Hexachlorobenzene	0.82	Not Detected		10	no
85-01-8	Phenanthrene	0.18	Not Detected		nle	no
120-12-7	Anthracene	0.19	Not Detected	-	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected		900	no
206-44-0	Fluoranthene	0.41	Not Detected	-	300	no
92-87-5	Benzidine	1.45	Not Detected		50	no
129-00-0	Ругепе	0.32	Not Detected		200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected		100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected		10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected		60	по
218-01-9	Chrysene	0.20	Not Detected		20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	-	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	-	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected		10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected		2	по
50-32-8	Benzo[a]pyrene	0.31	Not Detected		20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected		20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected		20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected		nle	no
-	<u> </u>	1l	 		<u> </u>	L

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

E Å

<u>1/13/99</u>

Location:

<u>550</u>

Lab Sample ID: 4187.04(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected		nle	по
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected		20	no
62-53-3	Aniline	0.15	Not Detected		nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected		10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected		600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	+-	75	no
100-51-6	Benzył alcohoł	0.18	Not Detected		nle	по
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	~~	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected		300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected		20	no
67-72-1	Hexachloroethane	0.46	Not Detected		10	no
98-95-3	Nitrobenzene	0.35	Not Detected		10	по
78-59-1	Isophorone	0.46	Not Detected	-	100	по
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected		nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected		9	no
91-20-3	Naphthalene	0.25	42.80 ug/L		nle	по
106-47-8	4-Chloroaniline	0.19	Not Detected		nle	по
87-68-3	Hexachlorobutadiene	0.38	Not Detected		1	по
91-57-6	2-Methylnaphthalene	0.16	53.52 ug/L		nle	по
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected		50	по
91-58-7	2-Chloronaphthalene	0.32	Not Detected		nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected		nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected		7000	no
208-96-8	Acenaphthylene	0.19	Not Detected		nle	no

Lab Name:

FMETL

NJDEP#

<u>13461</u>

Matrix: (soil/water) WATER

Date Sampled:

1/13/99

Location:

<u>550</u>

Lab Sample ID: 4187.04(Bldg 550)

CAS NO.	COMPOUND NAME	MDL	RESULTS	QUALIFIER	REGULATORY	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	(ug/L) 0.31	Nerbarra	<u> </u>	LEVEL(ug/L)	no
99-09-2	<u> </u>	0.26	Not Detected			no
	3-Nitroaniline		Not Detected		nle	
83-32-9	Acenaphthene	0.26	5.26 ug/L		400	no
132-64-9	Dibenzofuran	0.32	3.01 ug/L		nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected		10	no
84-66-2	Diethylphthalate	0.82	Not Detected		5000	no
86-73-7	Fluorene	0.29	7.02 ug/L		300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected		nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected		nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected		20	no
103-33-3	Azobenzene	0.80	Not Detected		nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected		nle	по
118-74-1	Hexachlorobenzene	0.82	Not Detected		10	по
85-01-8	Phenanthrene	0.18	10.62 ug/L		nle	по
120-12-7	Anthracene	0.19	Not Detected		2000	по
84-74-2	Di-n-butylphthalate	0.23	Not Detected		900	по
206-44-0	Fluoranthene	0.41	Not Detected		300	no
92-87-5	Benzidine	1.45	Not Detected		50	по
129-00-0	Pyrene	0.32	Not Detected		200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected		100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected		10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected		60	no
218-01-9	Chrysene	0.20	Not Detected		20	по
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected		30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected		100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected		10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected		2	ло
50-32-8	Benzo[a]pyrene	0.31	Not Detected		20	по
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected		20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected		20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected		nle	no
	· · · · · · · · · · · · · · · · · · ·		 			

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected		nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected		20	no
62-53-3	Aniline	0.15	Not Detected		nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected		10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected		600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected		75	no
100-51-6	Benzyl alcohol	0.18	Not Detected		nle	по
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected		600	по
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected		300	по
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected		20	no
67-72-1	Hexachloroethane	0.46	Not Detected		10	no
98-95-3	Nitrobenzene	0.35	Not Detected		10	no
78-59-1	Isophorone	0.46	Not Detected		100	по
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected		nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected		9	no
91-20-3	Naphthalene	0.25	37.53 ug/L		nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected		nie	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected		1	no
91-57-6	2-Methylnaphthalene	0.16	48.65 ug/L		nle	по
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected		50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected		nle	по
88-74-4	2-Nitroaniline	0.21	Not Detected		nle	по
131-11-3	Dimethylphthalate	0.18	Not Detected		7000	no
208-96-8	Acenaphthylene	0.19	Not Detected		nle	no

ΞÏ

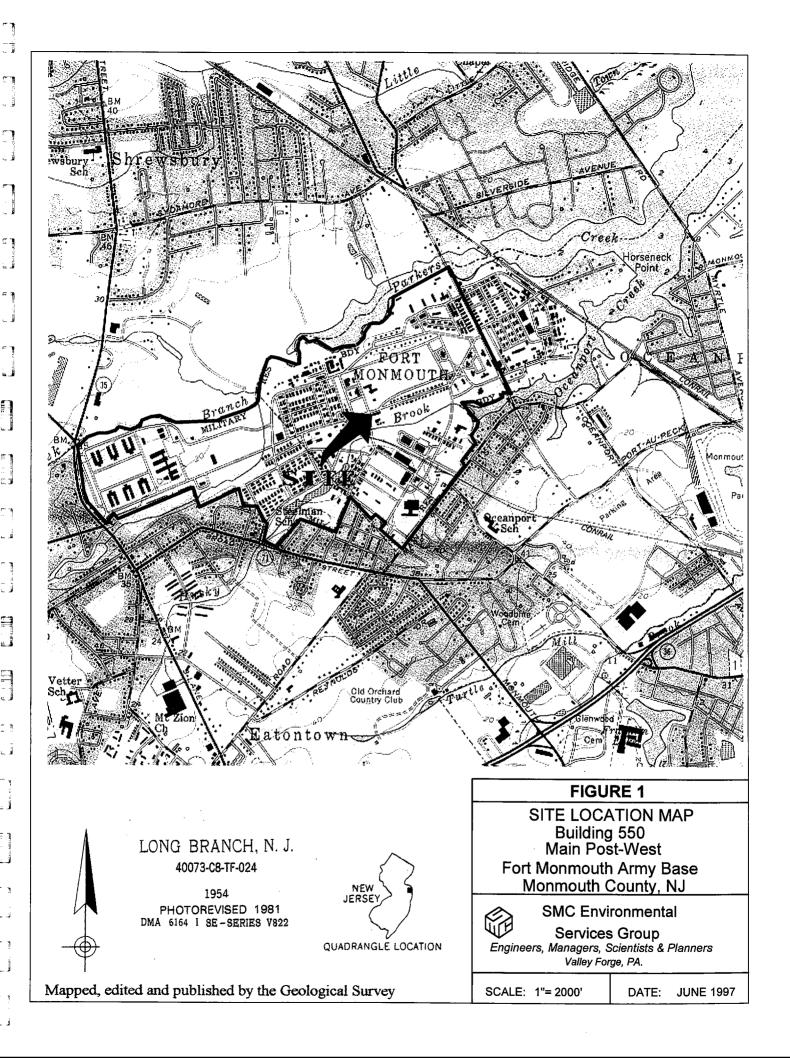
Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

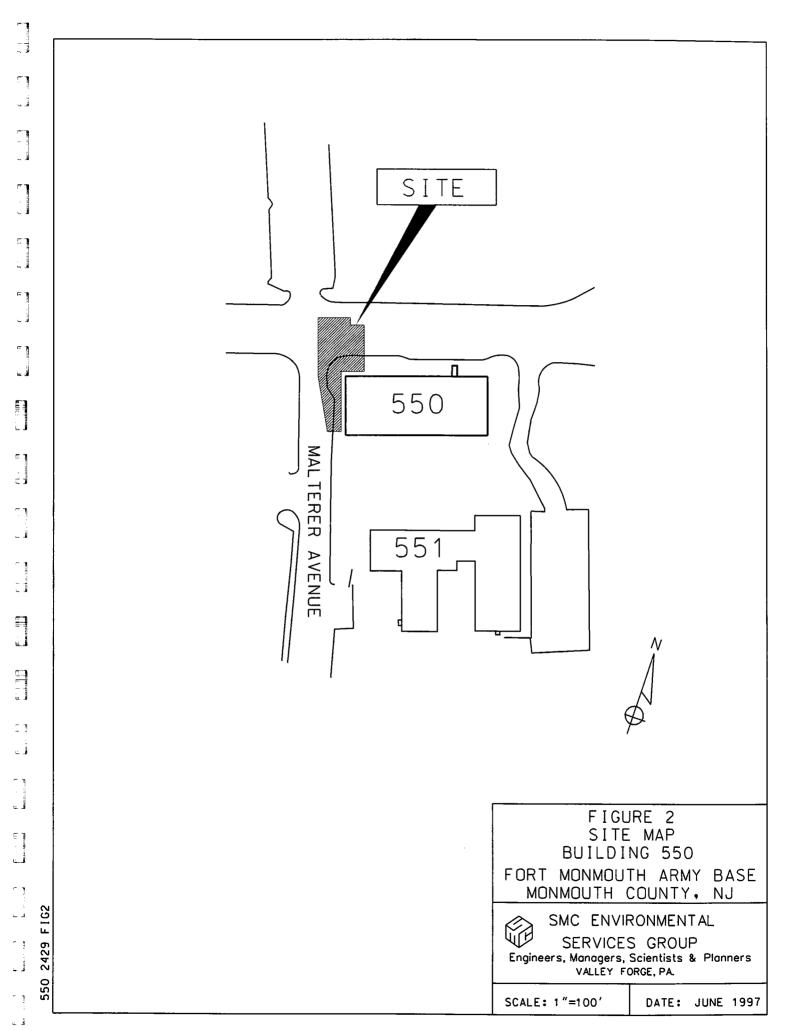
Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER

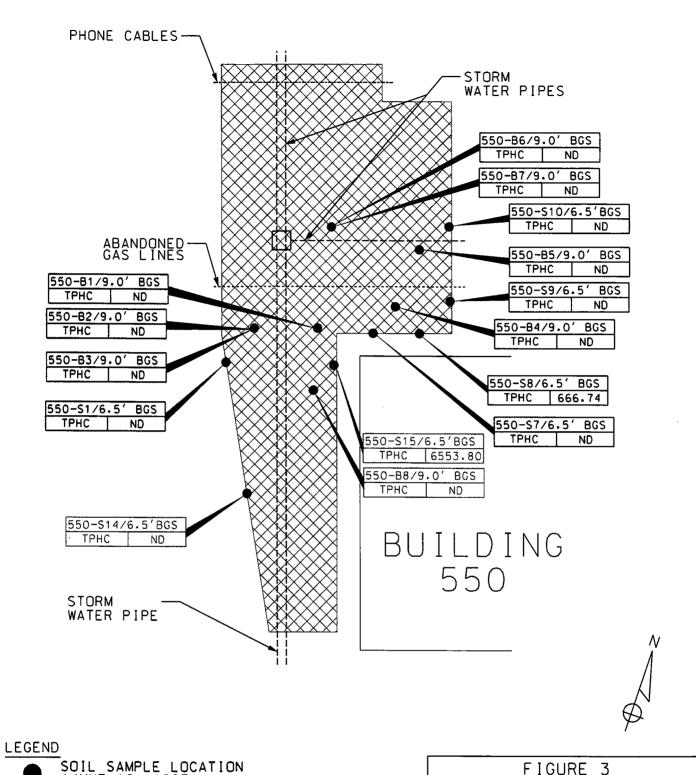
Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

Date Sample	zu. <u>1/13/99</u>	Location.	230	Lab Sample 1D. 4187.03(Dup 330)		
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected		nie .	no
99-09-2	3-Nitroaniline	0.26	Not Detected		nle	no
83-32-9	Acenaphthene	0.26	4.24 ug/L		400	no
132-64-9	Dibenzofuran	0.32	2.56 ug/L	-	nle	по
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	-	10	no
84-66-2	Diethylphthalate	0.82	Not Detected		5000	no
86-73-7	Fluorene	0.29	5.52 ug/L		300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected		nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected		nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected		20	no
103-33-3	Azobenzene	0.80	Not Detected		nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected		nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected		10	no
85-01-8	Phenanthrene	0.18	7.74 ug/L		nle	по
120-12-7	Anthracene	0.19	Not Detected		2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected		900	no
206-44-0	Fluoranthene	0.41	Not Detected	-	300	по
92-87-5	Benzidine	1.45	Not Detected		50	no
129-00-0	Pyrene	0.32	Not Detected	~-	200	по
85-68-7	Butylbenzylphthalate	0.47	Not Detected		100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected		10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected		60	no
218-01-9	Chrysene	0.20	Not Detected		20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected		30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected		100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected		10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected		2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected		20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected		20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected		20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected		nle	no
						·

FIGURES







- SOIL SAMPLE LOCATION (JUNE 16, 1997)
- SOIL SAMPLE LOCATION (JUNE 24-25, 1997)
- SOIL SAMPLE LOCATION (JUNE 28, 1997)

LIMIT OF EXCAVATION (JULY 28, 1997)

NOTES:

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

SOIL SAMPLING LOCATION MAP BUILDING 550

FORT MONMOUTH ARMY BASE MONMOUTH COUNTY, NJ



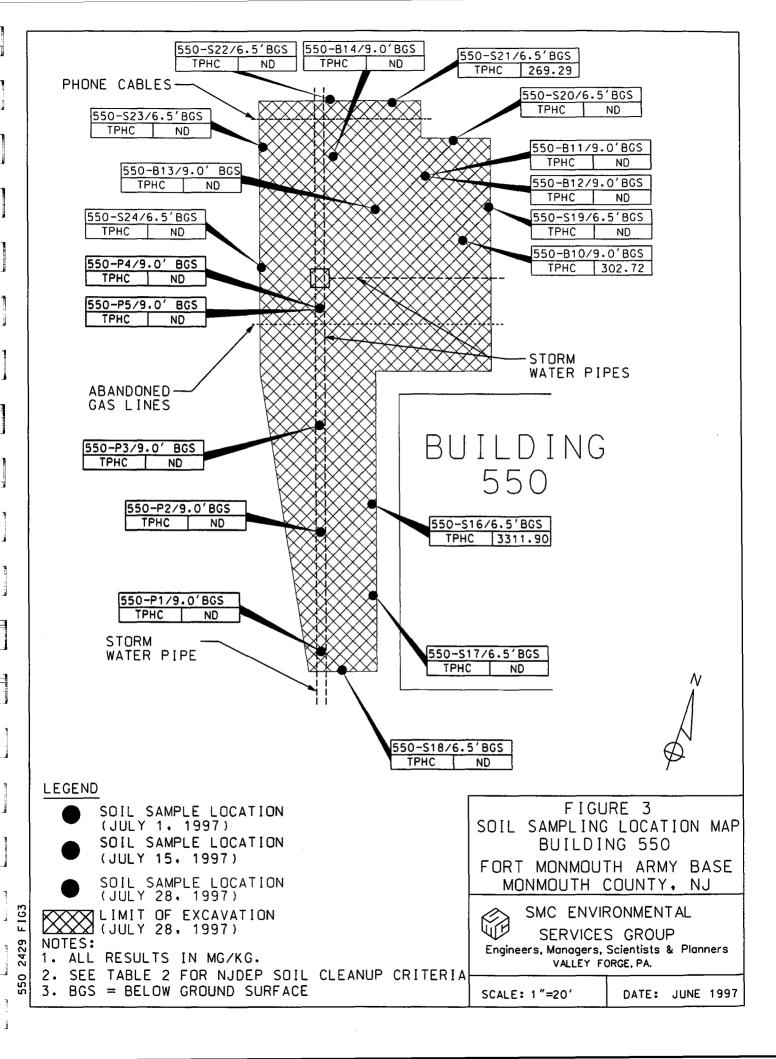
SMC ENVIRONMENTAL

SERVICES GROUP

Engineers, Managers, Scientists & Planners VALLEY FORGE, PA.

SCALE: 1"=20'

DATE: JUNE 1997



APPENDIX A 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

96-1226

550

Project # 2699 Date Rec. 06/16/97 Date Comp. 06/19/97 Released by:

> Daniel K. Wright Laboratory Director

Table of Contents

Section	Pages Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8-9
Surrogate Results Summary	10
MS/MSD Results Summary	11
Quality Control Spike Summary	12
Raw Sample Data	13-20
Laboratory Deliverable Checklist	21

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

	<u>NO</u>	<u>Yes</u>
1. Method Detection Limits provided.		<u>V</u>
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	1	VA
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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

Chain of Custody Record

Crestamone	(1)	T				, 						
	- / Chuck Apple by	Project No:	96-13	22(9	ļ	7	Analysis	Parame	ters		Comments:
Phone #: ((0 (0)	265-2700	Location:	550				5					
()DERA MOMA	()Other:	Ĺ			,	$ \pm $	9/10					
Samplers Name / Cor	mpany: David Dani	els .	,	Sample	#	2	25			ĺ		
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles	1	200					Remarks / Preservation Method
269901	550-BI	6.16.97	13.50	50:1	1	X	X					
1 .32	550-B2		13.55	1	1							
\ .03	550-B2 550-B3 550-31		14:00									
L .04	550-31	V	14:05	V	V	W	V					
	/											
	Processing the second s											
	and the second s	and the second s										
										_		
		ertan communication annual										
		Α										
Relinquished by (signature	1 /	Received by	signature):		Reñaq	uished l	by (sign	ature):	Date/Ti	me:	Received	d by (signature):
David Dav	NS 6.16.97 14:10	1. 1										
Relinquished by (signature	delinquished by (signature): Date/Time: Received by (signature): Relinquished by (signature): Date/Time: Received b			d by (signature):								
Report Type: ()Full, (educed, ()Standard, ()Screen	/ non-certified				Remarl						. /
Furnaround time: ()Standard 4 wks, ()Rush 3 Days, ()ASAP Verbal Hrs. 2 to 3 Duy RUSH												

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

Client:

U.S. Army

Lab. ID #:

2699

DPW. SELFM-PW-EV

Date Rec'd:

16-Jun-97

Bldg. 173

Analysis Start:

19-Jun-97

Ft. Monmouth, NJ 07703

Analysis Complete:

19-Jun-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

P. Skelton

DICAR #:

550

Ext. Meth: Shake Location #: TPHC Result Dilution Weight MDL (mg/kg) Sample Field ID % Solid **Factor** (mg/kg)

	<u> </u>	<u> </u>			<u> </u>
550-B1	1.00	15.37	81.75	187	ND
550-B2	1.00	15.24	76.54	201	ND
550-B3	1.00	15.51	77.28	196	ND
550-S1	1.00	15.93	84.61	174	ND
		_		<u>.</u>	
1					
17-Jun-97	1.00	15.00	100.00	157	ND
	550-B2 550-B3 550-S1	550-B2 1.00 550-B3 1.00 550-S1 1.00	550-B1 1.00 15.37 550-B2 1.00 15.24 550-B3 1.00 15.51 550-S1 1.00 15.93	550-B1 1.00 15.37 81.75 550-B2 1.00 15.24 76.54 550-B3 1.00 15.51 77.28 550-S1 1.00 15.93 84.61	550-B2 1.00 15.24 76.54 201 550-B3 1.00 15.51 77.28 196 550-S1 1.00 15.93 84.61 174

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	
	oratory Manager or Environmental Consultant's Signature	

Laboratory Certification #13461

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

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

96-1226

Bldg.. 550

Project # 2709 Date Rec. 06/19/97 Date Comp. 06/19/97

Released by:

Daniel K. Wright **Laboratory Director**

Table of Contents

Section	<u>Pages</u>
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8
Surrogate Results Summary	9
MS/MSD Results Summary	10
Quality Control Spike Summary	11
Raw Sample Data	12-13
Laboratory Deliverable Checklist	14
· · ·	

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

	<u>No</u> 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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

Chain of Custody Record

Customer: 5 1/2	((huck Apple by	Project No: 96 - (226	A	nalysis Paramete	ers	Comments:
	265.2700	Project No: 96 - (Location: 55 ()	Clids	-(5		RUSH
	mpany: David H.	Daniels 15MC	Sample #	TPHC 9/25/14	10-11		
Lab Sample I.D.	Sample Location	Date Time	Type bottle	9 (20)	2		Remarks / Preservation Method
2677.01	550-52	6 1997 11 20	50:12	XX			High OV A Reador
•	550-53	1 11:25					
.03	550-54	((:30					
-04	550-55	11:35					
L .05	550-56	11:40	VV	VV			V Y
, 							The second secon
				 			
					_		
	The second secon						The second secon
						{	
		1-1-1					
Relinquished by (signatu	re): Date/Time:	Received by (signature):	Relin	nquished by (signatu	re): Date/Tin	ne: Received by	(signature):
Vintal-V	mes 6.19.97 11:53	i N					(-i
elinquished by (signatu	re): Date/Time:	Received by (signature):	Relir	equished by (signatu	re): Date/Tin	ne: Received by	(signature):
<u> </u>		<u> </u>		Remarks: HO	10 1/2+15	until	I see the
/	Reduced, ()Standard, ()Scree			Remarks: $\pi \circ \tau \circ \tau$		1	-
rnaround time: ()Štan	dard 4 wks, (XRush Days	, () ASAP VerbalHr	S. }		1 - LEDUI	1_2 1	

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

Client:

U.S. Army

Lab. ID#:

2709

DPW. SELFM-PW-EV

Date Rec'd:

19-Jun-97

Bldg. 173

Analysis Start:

19-Jun-97

Ft. Monmouth, NJ 07703

Analysis Complete:

19-Jun-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

P. Skelton

DICAR #:

Ext. Meth:	Shake			Location #:		550
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2709.01	550-S2	1.00	15.71	81.92	183	6135.65
2709.02	550-S3	1.00	15.16	85.19	182	4366.19
2709.03	550-S4	1.00	16.13	80.52	181	9136.31
2709.04	550-S5	1.00	14.98	80.62	195	3708.27
2709.05	550-S6	1.00	16.59	81.38	174	11887.77
	<u> </u>					
	<u> </u>	<u> </u>				
						
	-					
	· · · · · ·					
	. 					
	 					
	 					
METHOD BLANK	19-Jun-97	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	
	oratory Manager or Environmental Consultant's Signature	

Laboratory Certification #13461

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

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

96-1226

Bldg.. 550

Project # 2735
Date Rec. 06/25/97
Date Comp. 06/27/97
Released by:

Daniel K. Wright Laboratory Director

Table of Contents

Section	<u>Pages</u>
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8-9
Surrogate Results Summary	10
MS/MSD Results Summary	11
Quality Control Spike Summary	12
Raw Sample Data	13-32
Laboratory Deliverable Checklist	33

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

	<u>NO Yes</u>
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).	<u>/</u> _
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
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

NJDEP Certification #13461

Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

Chain of Custody Record

Customer: 5 M	C/chuck Appleby	Project No:	10-1226	2	An	alysis Paran		Comments:	
Phone #: 60	265-2700	Location:			_4				RUSH
()DERA JOMA	()Other:	55	0		Up	?	8		
Samplers Name / Co	mpany: David H.	Daniels	Sample	#	TPHC 855hd	164	7	;	
Lab Sample I.D.	Sample Location		ime Type t	ottles	100	22	7	:	Remarks / Preservation Method
2735.01	550-57		:30 501	12	XX	5		1	It TPHC over 1,000
06	550-550-550-550-550-550-550-550-550-550	88:55 55 15 18	35 40 45 30 35 40 5 30 4	2		× .	X		Run Vot15 (Sample) fource
Relinquished by signatur	Date/Time:	Received by (signal	fure):	Reling	uished by (signature): Date	/Time: Rece	eived by ((signature):
Relinquished by (signatu	rre): Date/Time:	Received by (signal	ture):	Reling	uished by (signature): Date	Time: Rece	eived by	signature):
Report Type: (_)Full. 4	Reduced. (_)Standard. (_)Scro	en / non-certified	Hrs.		Remarks: No Rush	on lead	<u>d</u>		

RUSH

Page of

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

Client:

U.S. Army

Lab. ID#:

2735

DPW. SELFM-PW-EV

Date Rec'd:

25-Jun-97

Bldg. 173

Analysis Start:

25-Jun-97

Ft. Monmouth, NJ 07703

Analysis Complete:

27-Jun-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

P. Skelton

DICAR #:

Ext. Meth:	Shake			550		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2735.01	550-S7	1.00	15.29	78.52	196	ND
2735.02	550-S8	1.00	16.31	74.14	194	666.74
2735.03	550-S9	1.00	15.32	72.85	211	ND
2735.04	550-B4	1.00	15.93	75.49	195	ND
2735.05	550-B5	1.00	15.74	75.17	199	ND
2735.06	550-S10	1.00	15.66	81.38	184	ND
2735.07	550-S11	1.00	15.15	80.13	194	ND
2735.08	550-B6	1.00	15.35	79.95	191	ND
2735.09	550-B7	1.00	15.68	82.95	181	ND
2735.10	550-S12	1.00	16.61	84.79	167	3344.46
METHOD BLANK	25-Jun-97	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	
	oratory Manager or Environmental Consultant's Signature	2

Laboratory Certification #13461

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

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

96-1226 Bldg. 550

Project # 2748
Date Rec. 06/26/97
Date Comp. 06/27/97
Released by:

Daniel K. Wright

Laboratory Director

Table of Contents

Section	<u>Pages</u>
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8
Surrogate Results Summary	9
MS/MSD Results Summary	10
Quality Control Spike Summary	11
Raw Sample Data	12-19
Laboratory Deliverable Checklist	20

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

	<u>No Yes</u>
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). 2746.c(mg = 225% High TOH 5mm)	<u> </u>
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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC/chuck Appleby			Project No: 96-1226				Analysis Parameters								Comments:
Phone #: (010 265-2700			Location: 550				5							Lead - I week	
()DERA (XOMA (7)	J.		5	A	,			TAT
Samplers Name / Con	npany: David	4.00	Paniels/SMC Sample #				PHI	2 solids		*	00				
Lab Sample I.D.	Sample Loca		Date	Time		bottles		4/0		7,	~				Remarks / Preservation Method
2748,01	<i>5</i> 50 - ≤	13	6.26.97	11:30	Soil	2	X	X		X	K				
٠٠ ي	550-5	14		12-15			4								
.03	550-S	15		14:30		2		1		X					
	550-B		\vee	14:45	V		V	V							
		·													
Relinquished by (signature): (Date/	Time:	Received by (s	ignature):		Reling	uished	oy (sign	ature):		Date/	Гіте:	Receiv	ed by (s	signature):
to Allia (C	19.05 6 26.97			- /2s	2	_									
Relinquished by (signature		-	Received by (s	ignature):		Relinq	uished l	oy (sign	nature):		Date/	Гіте:	Receiv	ed by (s	signature):
Report Type: ()Full, (MReduced, ()Standard, ()Screen / non-certified Remarks: VOY 15 (xx lenes, MTBE+ TBA)							0 TO 4								
Report Type: ()Full, 🔀	educed, ()Standard		-				Remari	ks: U	104	(5(KX	ene.	s, A	NT 1	REA (RA)
Turnaround time: (_)Standa	ard 4 wks, ()Rush_	Days,	SASAP Verb	al Hrs.											

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

Client:

U.S. Army

Lab. ID #:

2748

DPW. SELFM-PW-EV

Date Rec'd:

26-Jun-97

Bldg. 173

Analysis Start:

27-Jun-97

Ft. Monmouth, NJ 07703

Analysis Complete:

27-Jun-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

P. Skelton

DICAR #:

Ext. Meth:	Shake			550		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2748.01	550-S13	1.00	16.96	83.96	165	5662.78
2748.02	550-S14	1.00	15.34	84.07	182	ND
2748.03	550-S15	1.00	16.79	85.80	163	6553.80
2748.04	550-B8	1.00	15.06	81.80	191	ND
METHOD BLANK	27-Jun-97	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	
	oratory Manager or Environmental Consultant's Signature	_

Laboratory Certification #13461

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

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

96-1226 Bldg. 550

> **Project # 2763** Date Rec. 07/01/97 Date Comp. 07/03/97

Released by:

Daniel K. Wright **Laboratory Director**

Table of Contents

Section	Pages Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8-9
Surrogate Results Summary	10
MS/MSD Results Summary	11
Quality Control Spike Summary	12
Raw Sample Data	13-20
Laboratory Deliverable Checklist	21

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).	<u> </u>
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
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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

Chain of Custody Record

Customer: 5MC	Church Appresi	Project No: 961226					Analysis Parameters						Commen	ts:		
Phone #: 610-1	Phone #: 610~ 265 2700)DERA (入OMA ()Other:		Project No: 961226 Location: 550			્ર સ્							McOH BOTTY H			
Samplers Name / Co	ompany: DANG 4 DANIELY	19MC	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Sample	#	VOA+15	% 50 las	TPAC							-	
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles	3	82	=	y y in					Remarks /	Preservation Method	
2763-01	550-INV6	7-1-97	1400	Goil	2	χ	<u>x</u>			<u> </u>				97067	60.01	
.02	550-INV7	1	1405		<u> </u>	X	X								-02	
.03	550 - INV 8		1410			X	×								-03	
.04	590- INV9	<u> </u>	1415			X	X								ا]م	
.05	550. INV 10		1410	<u> </u>		X	x								,05	
-06	550 - INV 11		1425			X	x								.06 # HAS 0	0N
-07	550 - 516		1430			X	*	X		<u> </u>				<u> </u>	.07	
80.	550 - 517		1435		6	Y/	X	X		X N	VOA	t15 01	V SAM	4	<u> </u>	
.09	550- B9		1440			×	X	Х						97063	30.0	
ا. لا	550 - 518	<u> </u>	1445	<u> </u>	1		×	χ								
Refinauished by (signal)	11¢): Date/Time: 7-1.97 15:20	Received by (signature):		Reline	quished	by (sig	nature):		Date/	Time:	Receiv	ed by (signature):		
Relinquished by (signatu		Received by (signature):		Reline	quished	by (sig	nature):		Date/	Time:	Receiv	ed by (signature):		
Report Type: (_)Full, 🏡	Reduced, (_)Standard, (_)Screen	ı / non-certified				Rema	rks: Y	vans.	AN	nied i	Boril	wethod	5 (M	odr out)	
	•	()ASAP Verb				INV	10 15	DVP	OF	INV	1	· 				

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

Client:

U.S. Army

Lab. ID#:

2763

.

DPW. SELFM-PW-EV

Date Rec'd:

01-Jul-97

Bldg. 173

Analysis Start:

02-Jul-97

Ft. Monmouth, NJ 07703

Analysis Complete:

03-Jul-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

: i

Soil

Closure #:

Analyst:

P. Skelton

DICAR #:

Ext. Meth:

Shake

Location #:

550

Ext. Metn:	Snake			550		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2763.07	550-S16	1.00	15.35	80.98	189	3311.90
2763.08	550-S17	1.00	15.19	85.49	181	ND
2763.09	550-B9	2.00	15.66	74.58	201	20565.24
2763.10	550-S18	1.00	15.01	84.10	186	ND
			<u> </u>			
METHOD BLANK	2-Jul-97	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	<u> </u>
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	
Lab Date	oratory Manager or Environmental Consultant's Signature	

Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

REPORT OF ANALYSIS

Client:

a j

U.S. Army

DPW, SELFM-PW-EV

Bldg. 173

Ft. Monmouth, NJ 07703

Project:

Total Petroleum Hydrocarbons

96-1226

550

Project # 2799
Date Rec. 07/15/97
Date Comp. 07/17/97
Released by:

Daniel K. Wright Laboratory Director

Table of Contents

Section	Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8
Surrogate Results Summary	9
MS/MSD Results Summary	10
Quality Control Spike Summary	11
Raw Sample Data	12-21
Laboratory Deliverable Checklist	22.

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.	<u> </u>
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	<u> </u>
4. Duplicate Results Summary Meet Criteria.	<u></u>
(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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

Chain of Custody Record

Customer: SMC	1 Churk Apple by	Project No.	1226					Anal	lysis I	Param	eters			Comments:
	265 2700	Location:	C-0				1							
()DERA ()XOMA (()Other:					X	So 1.05							
Samplers Name / Cor	npany: David H. C	lanie (s	BMC	Sample	#	1/	200	1 1						
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles		0,5							Remarks / Preservation Method
2799,01	550-P1	7.15.97	8:30	50.1	(X	X							·
-02		[]	8,35								<u> </u>			
-07			8:40											
ا ٢٥٠ /	550 - PY		8.45											
V .05	550- P5	V	8:50	V	V	V	V							
														and the desired state of the st
				ga Tambin I (Thompson park): 17) 		
				proj. 1 a. 1										
		,												
	· · · · · · · · · · · · · · · · · · ·			L										
				- 										
	er de la martina de Maria de la martina de Maria de la martina de Maria de Maria de la martina de Maria de la martina del la martina de la mar													
									ļ					
Religioushed by (signature	e): Date/Time:	Received by (s	ignature):		Reling	uished 1	by (sign	ature):		Date/	Time:	Receiv	ed by (signature):
Dent Duned 7.15.97 15:50 206 ligh														
Relinquished by (signature	e): Date/Time:	Received by (signature): Relinq			Relinq	equished by (signature): Date/Time:			Receiv	ed by (signature):			
Report Type: ()Full,	eport Type: ()Full, ()Reduced, ()Standard, ()Screen / non-certified Remarks;													
Turnaround time: (_)Standa		ASAF Verba	al Hrs.											

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

Client:

U.S. Army

Lab. ID#:

2799

DPW. SELFM-PW-EV

Date Rec'd:

15-Jul-97

Bldg. 173

Analysis Start:

16-Jul-97

Ft. Monmouth, NJ 07703

Analysis Complete:

17-Jul-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

ī

P. Skelton

DICAR #:

Ext. Meth:	Shake			Location #:		550
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2799.01	550-P1	1.00	15.43	83.33	183	ND
2799.02	550-P2	1.00	15.03	83.63	187	ND
2799.03	550-P3	1.00	14.86	83.60	189	ND
2799.04	550-P4	1.00	14.93	82.42	191	ND
2799.05	550-P5	1.00	15.46	78.88	193	ND
METHOD BLANK	16-Jul-97	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	<u> </u>
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	<u>~</u>
	oratory Manager or Environmental Consultant's Signature	

Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

REPORT OF ANALYSIS

Client:

الله ع

U.S. Army

DPW, SELFM-PW-EV

Bldg. 173

Ft. Monmouth, NJ 07703

Project:

Total Petroleum Hydrocarbons

96-1226 550

Project # 2838
Date Rec. 07/28/97
Date Comp. 07/29/97

Released by:

Daniel K. Wright Laboratory Director

Table of Contents

Section	<u>Pages</u>
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4
Chain of Custody	5
Results Summary	6
Initial Calibration Summary	7
Continuing Calibration Summary	8-9
Surrogate Results Summary	10
MS/MSD Results Summary	11
Quality Control Spike Summary	12
Raw Sample Data	13-34
Laboratory Deliverable Checklist	35

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

	<u>NO</u>	<u>Yes</u>
1. Method Detection Limits provided.		<u>.</u>
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	1	- AV
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.		<u>~</u>
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 (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: 5111	- / chuck topleby	Project No:	96-1	$\Rightarrow a$	·			Analysis	Parameters	5	Comments:
	265-2700	Location:	550	~ ~ K	7		5				RUSH
()DERA JOMA ()Other:		330			#	<u>e</u> .		-		201311
Samplers Name / Con	npany: David H. Da	riels / 3	MC	Sample	#	10	Solid				
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles	-	90				Remarks / Preservation Method
283801	550-B10	7.28.77	10:30	Soil	l	X	X				
.02	550-BII		10:35	[1					
.03	550- BIZ		10:4D								
.04	550- B13		10:45								
. 05	550- B14		10:50								
ناه.	550-519		10:55								
.07	550-520		11:00								
.08	550-521		11:05								
	550-522		11:10								
	550-523		11:15								
<i>_</i>	550-524		11:20	V	V	4	3				
	1 Control of the second										
,		۸									
Relinquished by/(signature): Date/Time;	Received by (s	inature):		Reling	uished	by (sign	nature):	Date/Time:	Received by	(signature):
カ 」 し 一大 1	ned 7.28.97 11:55	V. ~	N				• • •	·]	
Relinquished by (signature		Received by (s	ignature):		Relinq	uished	by (sign	ature):	Date/Time:	Received by	(signature):
				ليبيي				ا د حدا	<u> </u>	L	**************************************
	educed, ()Standard, ()Screen			~	}	Remar	ks: 🚝	ust			
urnaround time: (_)Standa	ard 4 wks, ()Rush Days,	ASAP Verba	al Hrs.								

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

Client:

U.S. Army

Lab. ID#:

2838

DPW. SELFM-PW-EV

Date Rec'd:

28-Jul-97

Bldg. 173

Analysis Start:

28-Jul-97

Ft. Monmouth, NJ 07703

Analysis Complete:

29-Jul-97

Analysis:

OQA-QAM-025

UST Reg. #:

Matrix:

Soil

Closure #:

Analyst:

D.DEINHARDT

DICAR #:

Ext Meth

Shako

Location #

Ext. Meth:	Shake			Location #:		550
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2838.01	550-B10	1.00	15.76	82,42	181	302.72
2838.02	550-B11	1.00	15.59	81.14	186	ND
2838.03	550-B12	1.00	15.07	85.50	182	ND
2838.04	550-B13	1.00	16.03	82.17	178	ND
2838.05	550-B14	1.00	15.72	80.15	187	ND
2838.06	550-S19	1.00	16.10	87.54	167	ND
2838.07	550-S20	1.00	15.86	82.72	179	ND
2838.08	550-S21	1.00	15.61	81.31	185	269.29
2838.09	550-S22	1.00	15.22	89.25	173	ND
2838.10	550-S23	1.00	15.58	92.11	164	ND
2838.11	550-S24	1.00	15.30	89.96	171	ND
METHOD BLANK	28-Jul-97	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	
	oratory Manager or Environmental Consultant's Signature	3

Laboratory Certification #13461

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

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:

Volatiles - EPA Method 8260

96-1226

550

Project #

2748

Date Rec.

06/26/97

Date Compl. 07/09/97

Released by:

Daniel K. Wright Laboratory Director

Table of Contents

Section	Pages Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4-5
Chain of Custody	6
Qualifiers	7
Results Summary	8-13
Tentatively Identified Compound Summary	14-16
Initial Calibration Summary	17-18
Continuing Calibration Summary	19-20
Tune Summary	21
Blank Summary	22
MS/MSD Results Summary	23
Internal Standard Summary	24
Surrogate Summary	25
Raw Sample Data	26-31
Laboratory Deliverable Checklist	32

Method Summary

NJDEP Method 8260

_ 13

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of Methanol Samples soil is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		Indicate Yes, No, N/A
1.	Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	<u>Y</u>
2.	Retention times for chromatograms provided	4
3.	GC/MS Tune Specifications	
	a. BFB Meet Criteriab. DFTPP Meet Criteria	<u> </u>
4.	GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series	<u>4</u>
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	ч
6.	GC/MS Calibration Requirements	
	a. Calibration Check Compounds Meet Criteriab. System Performance Check Compounds Meet Criteria	7 X X
7.	Blank Contamination - If yes, List compounds and concentrations in each blank:	N
	a. VOA Fraction	
	b. B/N Fraction	
	c. Acid Fraction	_
8.	Surrogate Recoveries Meet Criteria	7
	If not met, list those compounds and their recoveries which fall outside the acceptable range:	
	a. VOA Fraction 6F8 157%	
	b. B/N Fraction c. Acid Fraction	
	If not met, were the calculations checked and the results qualified as "estimated"?	4
€.	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	<u> </u>
	a. VOA Fraction	
	b. B/N Fraction	
	c. Acid Fraction	

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

Indicate

		Yes, No, N/A
10.	Internal Standard Area/Retention Time Shift Meet Criteria (If not met, list those compounds which fall outside the acceptable range) a. VOA Fraction b. B/N Fraction c. Acid Fraction	_y
11.	Extraction Holding Time Met	<u> </u>
	If not met, list number of days exceeded for each sample:	
12.	Analysis Holding Time Met If not met, list number of days exceeded for each sample:	<u>4</u>
Ado	litional Comments:	
		
Lab	oratory Manager : Date:	



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: SMC/Chuck Applebx			Project No: 96-1226			Analysis Parameters						Comments:			
Phone #: (010 265-2700			Location: SSO			4					Lead - I week		Lead - lweek		
()DERA (XOMA				,	<i></i>	, .	77	15Shids		Voxes	B				TAT
Samplers Name / Co	mpany :	David H. D.	niels/	SMC	Sample	#	P	Cy)		7%	0				·
Lab Sample I.D.		mple Location	Date	Time	Туре	bottles	E	4/0		7	7				Remarks / Preservation Method
2748.01	550	0-513	6-26.97	11:30	Soil	2	X	X		X	X			<u> </u>	
ړ ن.	550	0-514		12:15											
.03	350	5-515		14:30		ユ		V		X					
, 9 4	550	1-B8	\checkmark	14:45	V		V	V							
	,										_				
e and and a second control of the second con															
	·														
Relinquished by (signature): Date/Time:		Date/Time:	Received by (s	ignature):	1	Relinq	uished l	by (sign	nature):]	Date/	Time:	Receiv	ed by (s	signature):
Darth - Danes 626.97 1530		20	2 /2	2											
Relinquished by (signature): Date/Time:		Received by (s	ignature):		Relinq	uished t	y (sign	ature):		Date/	Гіте:	Receiv	ed by (s	signature):	
				. 			·				ļ				
Report Type: ()Full, 🔀	port Type: ()Full, (Reduced, ()Standard, ()Screen / non-certified Remarks: VO+15(Ky lenes, MTBE+ TBA)														
rnaround time: ()Standard 4 wks, ()Rush Days, (ASAP Verbal Hrs.															

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

Definition of Qualifiers

MDL: Method Detection Limit

J : Compound identified below detection limit
 B : Compound in both sample and blank
 D : Results from dilution of sample

U : Compound searched for but not detected

FIELD ID.

Daily Blank Lab Name: NJDEP# 13461 **FMETL** Project: 961226 Case No.: 2748 Location: 550 SDG No.: Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank Sample wt/vol: 5.0 (g/ml) G Lab File ID: V01201.D Level: (low/med) LOW Date Received: 06/26/97 % Moisture: not dec. 0 Date Analyzed: 07/09/97 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0 Soil Extract Volume: Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	7	U
107131	Acrylonitrile	7	U
75650	tert-Butyl alcohol	13	U
1634044	Methyl-tert-Butyl ether	3	U
108203	Di-isopropyl ether	2	U
	Dichlorodifluoromethane	4	U
74-87-3	Chloromethane	1	U_
75-01-4	Vinyl Chloride	3	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	3	U
75-69-4	Trichlorofluoromethane	2	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	2	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	2	U
75-35-3	1,1-Dichloroethane	1111	U
108-05-4	Vinyl Acetate	3	U
78-93-3	2-Butanone	3	υ
	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
75-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	2	U
71-43-2	Benzene	1	U
107-06-2	1,2-Dichloroethane	2	Ų
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	Ū
75-27-4	Bromodichloromethane	1	U
110-75-8	2-Chloroethyl vinyl ether	2	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-Pentanone	2	Ü
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	2	U
79-00-5	1,1,2-Trichloroethane	2	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	2	U
126-48-1	Dibromochloromethane	2	U
108-90-7	Chlorobenzene		Ū
100-41-4	Ethylbenzene	2	Ü

FIELD I	D
---------	---

3

3

U

U

U

-I- N1	E14571			N. 1 1	>== # 40	404	Daily	/ Blank	۱ ا
_ab Name:	FMETL			NJI	DEP # 13	461			
Project:	961226	Cas	e No.: 274	8 L	ocation: 5	50 S	DG No.:		
Matrix: (soil/	water)	SOIL			Lab Sa	mple ID:	Daily Blan	k	
Sample wt/ve	ol:	5.0	(g/ml) G		Lab Fil	e ID:	V01201.D)	
_evel: (low/r	med)	LOW			Date R	eceived:	06/26/97	-	
% Moisture:	not dec.	0			Date A	nalyzed:	07/09/97		
GC Column:	Rtx50	2.2 ID: 0.2	25 (mm)		Dilutio	n Factor:	1.0		
Soil Extract \	Volume:		_ (uL)		Soil Ali	quot Volu	me:		(uL
				CONCE	NTRATION	NUNITS:			
CAS NO	Ο.	COMPO	DUND	(ug/L or	ug/Kg)	UG/KG		Q	
1330-	20-7	m+p->	(ylenes				3	Ü	
1330-		o-Xyle					2	U	
100-4	2-5	Styrer					2	U	
75-25	-2	Bromo	oform				2	U	
70_3/	_5	112	2-Tetrachlor	nethane			2	11	

1,3-Dichlorobenzene

1,4-Dichlorobenzene
1,2-Dichlorobenzene

541-73-1

106-46-7

95-50-1

FIELD ID.

Project: 961226 Case No.: 2748	Location: 550 SD	
Project: 961226 Case No.: 2748)G No.:
Matrix: (soil/water) SOIL	Lab Sample ID:	2748.03
Sample wt/vol: 5.0 (g/ml) G	Lab File ID:	V01207.D
Level: (low/med) LOW	Date Received:	06/26/97
% Moisture: not dec. 14.2	Date Analyzed:	07/09/97
GC Column: Rtx502.2 ID: 0.25 (mm)	Dilution Factor:	10.0
Soil Extract Volume: (uL)	Soil Aliquot Volun	ne: (u

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	580	U
107131	Acrylonitrile	580	U
75650	tert-Butyl alcohol	580	U
1634044	Methyl-tert-Butyl ether	580	U
108203	Di-isopropyl ether	580	υ
	Dichlorodifluoromethane	58	U
74-87-3	Chloromethane	58	U
75-01-4	Vinyl Chloride	58	U
74-83-9	Bromomethane	58	U
75-00-3	Chloroethane	58	U
75-69-4	Trichlorofluoromethane	58	U
75-35-4	1,1-Dichloroethene	58	U
67-64-1	Acetone	58	U
75-15-0	Carbon Disulfide	58	U
75-09-2	Methylene Chloride	58	U
156-60-5	trans-1,2-Dichloroethene	58	U
75-35-3	1,1-Dichloroethane	58	U
108-05-4	Vinyl Acetate	58	U
78-93-3	2-Butanone	58	υ
-	cis-1,2-Dichloroethene	58	υ
67-66-3	Chloroform	58	J
75-55-6	1,1,1-Trichloroethane	58	U
56-23-5	Carbon Tetrachloride	58	U
71-43-2	Benzene	58	U
107-06-2	1,2-Dichloroethane	58	U
79-01-6	Trichloroethene	58	U
78-87-5	1,2-Dichloropropane	58	U
75-27-4	Bromodichloromethane	58	U
110-75-8	2-Chloroethyl vinyl ether	58	U
10061-01-5	cis-1,3-Dichloropropene	58	U
108-10-1	4-Methyl-2-Pentanone	58	U
108-88-3	Toluene `	58	U
10061-02-6	trans-1,3-Dichloropropene	58	U
79-00-5	1,1,2-Trichloroethane	58	U
127-18-4	Tetrachloroethene	58	U
591-78-6	2-Hexanone	58	Ü
126-48-1	Dibromochloromethane	58	Ū
108-90-7	Chlorobenzene	58	Ū
100-41-4	Ethylbenzene	45	JD

FIELD ID.

Lab Name:	FMETL			NJDEP# 13461	313	
Project:	961226		Case No.: 2748	Location: 550	SDG No.:	
Matrix: (soil/	water)	SOIL		Lab Sample ID	2748.03	
Sample wt/ve	ol:	5.0	(g/ml) G	Lab File ID:	V01207.D	
Level: (low/r	med)	LOW		Date Received	: 06/26/97	
% Moisture:	not dec.	14.2		Date Analyzed	: 07/09/97	
GC Column:	Rtx50	2.2 ID:	0.25 (mm)	Dilution Factor	: 10.0	
Soil Extract \	Volume:		(uL)	Soil Aliquot Vo	lume:	(uL)
			cc	NCENTRATION UNITS	:	
CAS NO	Ο.	CC	MPOUND (ug	g/L or ug/Kg) <u>UG/K</u> (<u>Q</u>	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIEL	D ID.
------	-------

Lab Name:	FMETL				NJDEP# 13461	313	
Project:	961226		Case No.:	2748	Location: 550 S	DG No.:	
Matrix: (soil/w	/ater)	SOIL			Lab Sample ID:	2748.03	_
Sample wt/vo	ıl:	5.0	(g/ml)	G	Lab File ID:	V01207.D	_
Level: (low/m	ned)	LOW			Date Received:	06/26/97	_
% Moisture: n	not dec.	14.2			Date Analyzed:	07/09/97	_
GC Column:	Rtx502	2.2 ID:	<u>0.25</u> (m	nm)	Dilution Factor:	10.0	-
Soil Extract V	olume:	1	(uL)		Soil Aliquot Volu	ume: 1	_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 15

- i

		1		
CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	27.34	730	JD
2. 015869-94-0	Octane, 3,6-dimethyl-	29.99	1200	JND
3. 014676-29-0	Heptane, 3-ethyl-2-methyl-	30.43	1100	JND
4.	unknown hydrocarbon	30.95	1400	JD
5.	unknown	32.08	820	JD
6. 017302-28-2	Nonane, 2,6-dimethyl-	32.83	2500	JND
7. 013151-34-3	Decane, 3-methyl-	33.45	770	JND
8. 000095-36-3	1,2,4-Trimethylbenzene	34.02	1400	JND
9. 001678-93-9	Cyclohexane, butyl-	34.26	1600	JND
10. 000493-02-7	Naphthalene, decahydro-, trans-	35.97	1900	JND
11. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	36.51	820	JND
12. 000535-77-3	Benzene, 1-methyl-3-(1-methylet	36.60	1400	JND
13. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	36.81	1300	JND
14.	unknown	37.43	1500	JD
15. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	38.00	1100	JND

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

		Indicate* Yes, No, N/A
1.	Cover Page, Title Page listing Lab Certification #, facility name & address, & data of report submitted	<u> </u>
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	<u> </u>
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	<u> </u>
4.	Document bound, paginated and legible	<u> </u>
5.	Chain of Custody submitted	<u> </u>
6.	Samples submitted to lab within 48 hours of sample collection	<u> </u>
7.	Methodology Summary submitted	
8.	Results submitted on a dry weight basis	
9.	Method Detection Limits	<u> </u>
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	<u> </u>
	ooratory Manager or Environmental Consultant's Signature	

Laboratory Certification # 13461

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

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:

Volatiles - EPA Method 8260

96-1226

550

Project #

2763

Date Rec.

07/01/97

Date Compl. 07/09/97

Released by:

Daniel K. Wright Laboratory Director

Table of Contents

Section	Pages
Cover Sheet	1
Table of Contents	2
Method Summary	3
Conformance/Non-Conformance	4-5
Chain of Custody	6
Qualifiers	7
Results Summary	8-27
Tentatively Identified Compound Summary	28-37
Initial Calibration Summary	38-39
Continuing Calibration Summary	40-41
Tune Summary	42-43
Blank Summary	44-45
MS/MSD Results Summary	46
Internal Standard Summary	47-48
Surrogate Summary	49
Raw Sample Data	50-69
Laboratory Deliverable Checklist	70

Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of Methanol Samples soil is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

			Indicate Yes, No, N/A
1.		Labeled/Compounds Identified	4
	(Field Sam	ples and Method Blanks)	
2.	Retention times	for chromatograms provided	4
3.	GC/MS Tune Sp	pecifications	
	a.	BFB Meet Criteria	4
	b.	DFTPP Meet Criteria	
4.	GC/MS Tuning	Frequency - Performed every 24 hours for 600	4
	series and 12 ho	urs for 8000 series	
5.	GC/MS Calibrat	tion - Initial Calibration performed before	
		and continuing calibration performed within	4
	24 hours of samp	ple analysis for 600 series and 12 hours for 8000 series	
6.	GC/MS Calibrat	tion Requirements	
	a.	Calibration Check Compounds Meet Criteria	Y
	b.	System Performance Check Compounds Meet Criteria	4
7.	Blank Contamin	nation - If yes, List compounds and concentrations in each blank:	7
	a.		
	b.	B/N Fraction	
	c.	Acid Fraction	
8.	Surrogate Recov	veries Meet Criteria	Y
		ist those compounds and their recoveries which fall acceptable range:	
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction	
	·	were the calculations checked and the results s "estimated"?	
9.	Matrix Snike/Ma	atrix Spike Duplicate Recoveries Meet Criteria	Y
		nose compounds and their recoveries which fall	
	outside the accep		
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction	

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

	Indicate Yes, No, N/A
10. Internal Standard Area/Retention Time Shift Meet Criteria (If not met, list those compounds which fall outside the acceptable ran a. VOA Fraction b. B/N Fraction c. Acid Fraction	nge)
11. Extraction Holding Time Met	(-
If not met, list number of days exceeded for each sample:	
12. Analysis Holding Time Met If not met, list number of days exceeded for each sample:	<u>~</u>
Additional Comments:	
Laboratory Manager Date: 1-24-4	



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: 5ML	/ Chiefe Apple Bij	Project No:	96122					Ana	lysis i	Param	eters			Comments	:	1
Phone #: 610 - 16	5 2700	Location:	550				Z							MeOH BOTT	中比	
Samplers Name / Cor	mpany: DAVID H DANIELY	19MC		Sample	#	1+15	% 50/18	735								
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles	Š	જ	2						Remarks / Pr	eservation Method	
2763-01	550- INV6	7-1-97	1400	Goil	2	χ	χ							970630	ان ۱۰	
.02	550-INV7		1405			X	X								-02	
.03	550 - INV 8		1410			×	X								.03	
- 04	590. INV 9		1415			X	X								_ اا _	
.05	550- INV 10		1420			Y	x_								,05	
.06	550 - INV 11		1425			X	X								.06 # HAS 0	NE JAC ONLY
.07	550 - 516		1430			×	*	X						<u> </u>	.07	'
80.	550 - 517		1435		6	y	γ	X		* NO	VOA	r15 0.	13 SAM	k		l
,09	550- B9		1440			×	X	Х		<u> </u>			<u> </u>	970630	.08	
١٥. ١٧	550 - 518	<u></u> 上	1445	1	لا		x	X								
				<u> </u>												
			 											<u> </u>		
Relinquished by (signatur	Date/Time:	Received by	gnature):	·	Reling	uished	by (sig	nature):		Date/	Time:	Recei	ved by ((signature):	-	
Relinquished by (signatur		Received by (s	ignature):		Relinq	uished	by (sig	nature):		Date/	Time:	Receiv	ved by ((signature):		
Report Type: (_)Full, 🔌	Reduced, ()Standard, ()Screen	/ non-certified				Remai	ks: Y	DATIS.	4N	mled 1	કે ા (Melho	B (M	ed r oup)		
Turnaround time: (Stand		()ASAP Verb	al Hrs.							INV		•				

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

Definition of Qualifiers

MDL: Method Detection Limit

J : Compound identified below detection limit
 B : Compound in both sample and blank
 D : Results from dilution of sample

U: Compound searched for but not detected

FIELD ID.

Lab Name:	FMETL			NJDEP#	13461		IIY DIATIK
Project:	961226	Case No.:	2763	Location	550	SDG No.:	

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank
Sample wt/vol: 10.0 (g/ml) G Lab File ID: V01089.D

Level: (low/med) MED Date Received: 07/01/97

% Moisture: not dec. 0 Date Analyzed: 07/08/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

- 1

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	6200	U
107131	Acrylonitrile	6200	U
75650	tert-Butyl alcohol	6200	U
1634044	Methyl-tert-Butyl ether	6200	U
108203	Di-isopropyl ether	6200	U
	Dichlorodifluoromethane	620	U
74-87-3	Chloromethane	620	U
75-01-4	Vinyl Chloride	620	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	620	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	620	U
67-64-1	Acetone	620	J
75-15-0	Carbon Disulfide	620	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	Ų
75-35-3	1,1-Dichloroethane	620	U
108-05-4	Vinyl Acetate	620	U
78-93-3	2-Butanone	620	U
	cis-1,2-Dichloroethene	620	U
67-66-3	Chloroform	620	U
75-55-6	1,1,1-Trichloroethane	620	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	620	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	620	U
78-87-5	1,2-Dichloropropane	620	U
75-27-4	Bromodichloromethane	620	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	620	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	620	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	620	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	Ū
108-90-7	Chlorobenzene	620	Ū
100-41-4	Ethylbenzene	620	U

FIELD ID.

Lab Name:	FMETL			<u> </u>	NJDEP# 13461	Daily Blank	
Project:	961226		Case No.:	2763	Location: 550 S	DG No.:	
Matrix: (soil/v	vater)	SOIL			Lab Sample ID:	Daily Blank	
Sample wt/vo	ol:	10.0	(g/ml)	G	_ Lab File ID:	V01089.D	
Level: (low/n	ned)	MED			Date Received:	07/01/97	
% Moisture: r	not dec.	0			Date Analyzed:	07/08/97	
GC Column:	Rtx502	2.2 ID:	<u>0.25</u> (n	nm)	Dilution Factor:	1.0	
Soil Extract V	/olume:	25000	(uL)		Soil Aliquot Volu	ıme: 100	(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
1330-20-7	m+p-Xylenes	620	U
1330-20-7	o-Xylene	620	U
100-42-5	Styrene	620	U
75-25-2	Bromoform	620	U
79-34-5	1,1,2,2-Tetrachloroethane	620	U
541-73-1	1,3-Dichlorobenzene	620	U
106-46-7	1,4-Dichlorobenzene	620	U
95-50-1	1.2-Dichlorobenzene	620	U

FIELD ID.

Daily Blank Lab Name: **FMETL** NJDEP # 13461 Project: 961226 SDG No.: Case No.: 2763 Location: 550 Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank Sample wt/vol: 10.0 (g/ml) G Lab File ID: V01201.D Level: (low/med) MED Date Received: 07/01/97 % Moisture: not dec. Date Analyzed: 07/09/97 Rtx502.2 ID: 0.25 GC Column: (mm) Dilution Factor: 1.0 Soil Extract Volume: 25000 Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	6200	U
107131	Acrylonitrile	6200	Ü
75650	tert-Butyl alcohol	6200	U
1634044	Methyl-tert-Butyl ether	6200	U
108203	Di-isopropyl ether	6200	U
	Dichlorodifluoromethane	620	Ü
74-87-3	Chloromethane	620	U
75-01-4	Vinyl Chloride	620	U
74-83-9	Bromomethane	620	U
75-00-3	Chloroethane	620	U
75-69-4	Trichlorofluoromethane	620	U
75-35-4	1,1-Dichloroethene	620	U
67-64-1	Acetone	620	U
75-15-0	Carbon Disulfide	620	U
75-09-2	Methylene Chloride	620	U
156-60-5	trans-1,2-Dichloroethene	620	U
75-35-3	1,1-Dichloroethane	620	U
108-05-4	Vinyl Acetate	620	U
78-93-3	2-Butanone	620	U
	cis-1,2-Dichloroethene	620	U
67-66-3	Chloroform	620	U
75-55-6	1,1,1-Trichloroethane	620	U
56-23-5	Carbon Tetrachloride	620	U
71-43-2	Benzene	620	U
107-06-2	1,2-Dichloroethane	620	U
79-01-6	Trichloroethene	620	U
78-87-5	1,2-Dichloropropane	620	U
75-27-4	Bromodichloromethane	620	U
110-75-8	2-Chloroethyl vinyl ether	620	U
10061-01-5	cis-1,3-Dichloropropene	620	U
108-10-1	4-Methyl-2-Pentanone	620	U
108-88-3	Toluene	620	U
10061-02-6	trans-1,3-Dichloropropene	620	U
79-00-5	1,1,2-Trichloroethane	620	U
127-18-4	Tetrachloroethene	620	U
591-78-6	2-Hexanone	620	U
126-48-1	Dibromochloromethane	620	U
108-90-7	Chlorobenzene	620	U
100-41-4	Ethylbenzene	620	U

FIELD ID.

Daily Blank Lab Name: **FMETL** NJDEP# 13461 Project: SDG No.: 961226 Case No.: 2763 Location: 550 Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank Sample wt/vol: 10.0 Lab File ID: (g/ml) G V01201.D MED Level: (low/med) Date Received: 07/01/97 % Moisture: not dec. Date Analyzed: 07/09/97 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q	
1330-20-7	m+p-Xylenes	620	Ū	
1330-20-7	o-Xylene	620	U	
100-42-5	Styrene	620	U	
75-25-2	Bromoform	620	U	
79-34-5	1,1,2,2-Tetrachloroethane	620	U	
541-73-1	1,3-Dichlorobenzene	620	U	
106-46-7	1,4-Dichlorobenzene	620	U	
95-50-1	1.2-Dichlorobenzene	620	U	

FIELD ID.

(uL)

Soil Aliquot Volume: 100

550-S16 Lab Name: **FMETL** NJDEP # 13461 Project: 961226 Case No.: 2763 Location: 550 SDG No.: Matrix: (soil/water) SOIL Lab Sample ID: 2763.07 10.7 Sample wt/vol: (g/ml) G Lab File ID: V01202.D Level: (low/med) MED Date Received: 07/01/97 % Moisture: not dec. 19.02 Date Analyzed: 07/09/97 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

CONCENTRATION UNITS:

(uL)

Soil Extract Volume: 25000

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	7200	U
107131	Acrylonitrile	7200	U
75650	tert-Butyl alcohol	7200	Ū
1634044	Methyl-tert-Butyl ether	7200	U
108203	Di-isopropyl ether	7200	U
	Dichlorodifluoromethane	720	U
74-87-3	Chloromethane	720	U
75-01-4	Vinyl Chloride	720	U
74-83-9	Bromomethane	720	U
75-00-3	Chloroethane	720	U
75-69-4	Trichlorofluoromethane	720	U
75-35-4	1,1-Dichloroethene	720	U
67-64-1	Acetone	720	U
75-15-0	Carbon Disulfide	720	Ü
75-09-2	Methylene Chloride	720	U
156-60-5	trans-1,2-Dichloroethene	720	U
75-35-3	1,1-Dichloroethane	720	U
108-05-4	Vinyl Acetate	720	כ
78-93-3	2-Butanone	720	Ų
	cis-1,2-Dichloroethene	720	υ
67-66-3	Chloroform	720	U
75-55-6	1,1,1-Trichloroethane	720	J
56-23-5	Carbon Tetrachloride	720	U
71-43-2	Benzene	720	U
107-06-2	1,2-Dichloroethane	720	U
79-01-6	Trichloroethene	720	U
78-87-5	1,2-Dichloropropane	720	U
75-27-4	Bromodichloromethane	720	U
110-75-8	2-Chloroethyl vinyl ether	720	U
10061-01-5	cis-1,3-Dichloropropene	720	U
108-10-1	4-Methyl-2-Pentanone	720	U
108-88-3	Toluene	720	U
10061-02-6	trans-1,3-Dichloropropene	720	U
79-00-5	1,1,2-Trichloroethane	720	U
127-18-4	Tetrachloroethene	720	U
591-78-6	2-Hexanone	720	Ū
126-48-1	Dibromochloromethane	720	U
108-90-7	Chlorobenzene	720	Ü
100-41-4	Ethylbenzene	720	U

FIELD ID

Lab Name:	FMETL			NJDEP# 13461	550-S16	
Project:	961226		Case No.: 2763	Location: 550 S	DG No.:	
Matrix: (soil/	water)	SOIL		Lab Sample ID:	2763.07	
Sample wt/ve	ol:	10.7	(g/ml) G	Lab File ID:	V01202.D	
Level: (low/r	med)	MED		Date Received:	07/01/97	
% Moisture:	not dec.	19.02		Date Analyzed:	07/09/97	
GC Column:	Rtx502	2.2 ID:	<u>0.25</u> (mm)	Dilution Factor:	1.0	
Soil Extract \	Volume:	25000	(uL)	Soil Aliquot Volu	ıme: <u>100</u> (uL	.)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or t	ıg/Kg) UG/KG	Q	
1330-20-7	m+p-Xylenes	720	U	
1330-20-7	o-Xylene	720	U	
100-42-5	Styrene	720	U	
75-25-2	Bromoform	720	U	
79-34-5	1,1,2,2-Tetrachloroethane	720	U	
541-73-1	1,3-Dichlorobenzene	720	U	
106-46-7	1,4-Dichlorobenzene	720	U	
95-50-1	1,2-Dichlorobenzene	720	Ū	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

550-S16 Lab Name: **FMETL** NJDEP# 13461 Project: 961226 SDG No.: Case No.: 2763 Location: 550 Matrix: (soil/water) SOIL Lab Sample ID: 2763.07 10.7 Sample wt/vol: (g/ml) G Lab File ID: V01202.D Level: (low/med) MED Date Received: 07/01/97 % Moisture: not dec. 19.02. Date Analyzed: 07/09/97 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

CO COIGITH. 10.002.2 ID. 0.20 (HIIII) Dilution 1 actor. 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 100 (uL)

CONCENTRATION UNITS:

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

				
CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000589-90-2	Cyclohexane, 1,4-dimethyl-	24.84	6400	JN
2. 000103-65-1	Benzene, propyl-	32.61	3200	JN
3. 000095-36-3	1,2,4-Trimethylbenzene	34.00	13000	JN
4. 000141-93-5	Benzene, 1,3-diethyl-	35.57	3800	JN
5. 001074-55-1	Benzene, 1-methyl-4-propyl-	35.71	2900	JN
6. 000104-51-8	Benzene, butyl-	35.79	3700	JN
7. 000493-02-7	Naphthalene, decahydro-, trans-	35.96	3300	JN
8. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	36.49	5800	JN
9. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	36.59	5800	JN
10. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	36.79	8300	JN
11. 003333-13-9	Benzene, 1-methyl-4-(2-propenyl)	37.16	3500	JN
12. 000767-58-8	Indan, 1-methyl-	37.40	4800	JN
13. 000099-87-6	Benzene, 1-methyl-4-(1-methylet	37.77	5000	JN
14. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	37.98	13000	JN
15. 002050-24-0	Benzene, 1,3-diethyl-5-methyl-	38.36	3000	JN

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

		Indicate* Yes, No, N/A
1.	Cover Page, Title Page listing Lab Certification #, facility name & address, & data of report submitted	<u>'</u>
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	1
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	<u> </u>
4.	Document bound, paginated and legible	<u> </u>
5.	Chain of Custody submitted	<u> </u>
6.	Samples submitted to lab within 48 hours of sample collection	_4
7.	Methodology Summary submitted	-
8.	Results submitted on a dry weight basis	<u> </u>
9.	Method Detection Limits	<u> </u>
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	4
	ooratory Manager or Environmental Consultant's Signature e <u>\ / ユ </u>	

Laboratory Certification # 13461

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

APPENDIX B GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL

TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

الله الله

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: UST Program

Bldg. 550

Field Location No. &	Laboratory	Matrix	Date and Time	Date Received
Location	Sample ID#		Of Collection	
Trip Blank	4136.01	Aqueous	10-Dec-98	12/10/98
Field Blank	4136.02	Aqueous	10-Dec-98 10:20	12/10/98
Bldg. 550 13-15'	4137.01	Aqueous	10-Dec-98 15:24	12/10/98
Bldg. 550 13-15'	4137.02	Aqueous	10-Dec-98 15:30	12/10/98

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

> Daniel Wright/Date Laboratory Director

Table of Contents

Section	Pages Pages
Chain of Custody	1-3
Field Documentation	4-6
Methodology Summary	7-8
Conformance/Non-Conformance Summary	9-11
Laboratory Chronicle	12-13
Volatile Organics	14-15
Analytical Results Summary	16-23
Tune Results Summary	24-28
Method Blank Results Summary	29-30
Calibration Summary	31-34
Surrogate Recovery Summary	35-36
MS/MSD Results Summary	37-38
Internal Standard Area & RT Summary	39-40
Chromatograms	41-48
Base Neutrals	49
Analytical Results Summary	50-55
Tune Results Summary	56-58
Method Blank Results Summary	59-60
Calibration Summary	61-62
Surrogate Recovery Summary	63-64
MS/MSD Results Summary	65-66
Internal Standard Area & RT Summary	67-70
Chromatograms	71-80
Laboratory Deliverables Checklist	81
Laboratory Authentication Statement	82

CHAIN OF CUSTODY



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: CA/VEL	sar /	Project No:	· · · · · · · · · · · · · · · · · · ·			Analysis Parameters				Comments:				
Phone #: 100	224	Location: Bo	UG. 550			V	V e							
()DERA (V)OMA ()Other:					VOA+	B							
Samplers Name / Cor	npany: Mark Laure T.	V.S. PWS	5 07	Sample	#	10.000000	4							
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles	15	15							Remarks / Preservation Method
4137.	BUSG. 550-13-15'	12-10-98	1524	AQ.	Z	X								HCL
2	11 -	٤١	1530	11	1		×							240ر
												<u> </u>		
·										<u> </u>				
·														
		-												
			· · · · · · · · · · · · · · · · · · ·											
		-												
							,							
	· ·													
												fi-		
Relinquished by (signatur		Received by (signature):		Relina	quished	by (sig	nature)):	Date/	Time:	Recei	ved by ((signature):
Mautan	12-10-98 1540	1./M	eller	r	la la									
Relinquished by (signatur		Received by (signature);		Relino	linquished:by (signature): Date/Time: Received by (signature):					(signature):			
Report Type: (_)Full, (_)F	teport Type: (_)Full, (_)Reduced, (_)Standard, (_)Screen / non-certified Remarks:													
urnaround time: (_)Stand	lard 4 wks, (_)Rush Days	, (_)ASAP Ve	rbalHr	S										



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: CHAS. APPLEBY / VERSAR		Project No:				Analysis Parameters								Comments:	
Phone		Location: 7	Location: BUDG, 447		1.72										
()DER	A (YOMA (, , , , , , , , , , , , , , , , , , ,		Ď	B							
Sample	ers Name / Co	mpany: Marn Laura	T.V.S. P	WS 07	Sample	#	¥04+	+							
	lample I.D.	Sample Location	Date	Time	Туре	bottles		15							Remarks / Preservation Method
91	36.1	TRIP BLANK	12-10-98		AQ.	2	X								MOL
	2	FIELD BLANK	b1	1020	-11	3	×	×							HOL/240C
	3	BLDG. 447 -6,5-10.5	' is	1050	11	2	×								
	4	(1 - 11	11	1122	11	1		X							
	·													<u> </u>	
					<u> </u>										,
			<u></u>												
			ļ						ļ						
													<u> </u>		
															
										,					
	· · · · · · · · · · · · · · · · · · ·														
									<u> </u>						
	shed by (signatu	re): Date/Time: /	Received by	101		Relinquished by (signature): Date/Time: Received by (signature):			(signature):						
/ /	hed by (signatu		Received by (71	\	Relino	Relinquished by (signature): Date/Time: Received by (signature):			(signature):					
		Reduced, ()Standard, ()Screedard 4 wks, ()Rush Days	en / non-certifi s, (_)ASAP Ve		, s,		Remar	ks:	<u></u>		· · · · · · ·				

FIELD DOCUMENTATION

Post Remedial Groundwater Sampling at Former Underground Storage Tank Site [# 2 fuel oil]

FOR BLDG. # 550

Ground Water Sampling with the use of a Passively Placed Narrow Diameter Point (PPNDP)

Objective:

To collect a representative groundwater sample utilizing a narrow diameter point [PPNDP] This is a small diameter [1-inch OD] screened casing passively placed in a borehole. The casing is of p.v.c. construction.

1. Methods

A. A solid push - rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0.010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. Installation

- A. Using a Geoprobe, a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 15 feet. The water table was at 13 feet below ground surface.
- B. The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 10 15 feet. Riser casing from 10 0 feet.

3. Purging

A. Three volumes of the standing water in the point were purged. The amount of water extracted was app. 0.123 gal. Three to five volumes are purged due to the potential for cross contamination of the screen from upper soil horizons. This was accomplished utilizing a peristaltic pump, and utilizing food grade tubing.

4. Sampling

A. Sampling methods, sample preservation requirements, sample handling times, decontamination procedure for field equipment, and frequency for field blanks, field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP "Field Sampling Procedures Manual" in effect as of the date on which sampling is performed. Any deviations from the methods in the "Field Sampling Procedures Manual" pursuant to N.J.A.C. 7:26E-1.6(c) has been approved by the person responsible for conducting the remediation.

All samples were preserved in the field immediately after collection and submitted to the laboratory as soon as possible and no later than 48 hours after sample collection.

The acquisition of samples and water level measurements were performed as recommended and described in the May 1992 edition of NJDEP Field Sampling Procedures Manual.

5. Quality Assurance/Quality Control

A. Decontamination

The associated equipment (bull point, riser pipe, etc.) was decontaminated between borings using the following procedure:

- 1. Remove all adherent soil material.
- 2. Wash with a laboratory grade glassware detergent.
- 3. Rinsed with potable water.
- 4. Rinse with distilled and deionized ASTM Type II water.

B. Field Blanks

- 1 Field blank was shared with bldg. 447, taken same day.
- C. Sample bottles: Supplied by Environmental Sampling Supply, Oakland, Calif. The sample bottles are certified clean and are sealed upon delivery.
- D. P.V.C. Screens: Supplied by Bedrock Enterprises, Forked River N.J.

Geoprobe Operator: Mark Laura

Employer: U.S. Army, Fort Monmouth

Phone Number: [732] 532-8990

NJDEP License #: J-1486

Mayestem 12-10-98 Mark Laura / Date

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 la	abeled/Compounds identified	
		s and method blanks)	<u>yes</u>
2.	Retention times for	r chromatograms provided	yes
3.	GC/MS Tune Spe	cifications	·
	a.	BFB Meet Criteria	<u>YeS</u>
	b.	DFTPP Meet Criteria	yes
4.		equency – Performed every 24 hours for 600	,
	series and 12 hour	s for 8000 series	yes_
5 .		n – Initial Calibration performed before sample	
		nuing calibration performed within 24 hours of	Lac
	sample analysis fo	r 600 series and 12 hours for 8000 series	<u> 400</u>
6.	GC/MS Calibratio	n requirements	
	a.	Calibration Check Compounds Meet Criteria	_ Ves
	b.	System Performance Check Compounds Meet Criteria	405
7 .	Blank Contaminati	ion - If yes, List compounds and concentrations in each blank:	<u>'NOO</u>
	a.	VOA Fraction	
	Ъ.	B/N Fraction	-
	c.	Acid Fraction NA	
8.	Surrogate Recover	ies Meet Criteria	yes
	If not met, list	those compounds and their recoveries, which fall	1
		ceptable range:	
	a.	VOA Fraction	
	ъ.	B/N Fraction	
	C.	Acid Fraction NA	
	If not met, we as "estimated"	re the calculations checked and the results qualified?	
9.	Matrix Spike/Matr	ix Spike Duplicate Recoveries Meet Criteria	(105
		se compounds and their recoveries, which fall	7
	outside the accepta		
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction NA	

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

			Indicate Yes, No, N/A
10.		Area/Retention Time Shift Meet Criteria nose compounds, which fall outside the acceptable range)	<u>yes</u>
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction NA	
11.	Extraction Holdin	ng Time Met	yes
	If not met, list the	e number of days exceeded for each sample:	•
12.	Analysis Holding	Time Met	405
	If not met, list the	number of days exceeded for each sample:	(
Add	itional Comments:		
Labo	oratory Manager:	Date: 2-5-99	

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4137

Site: Bldg. 550

		Date	Hold Time
Da	te Sampled	12/10/98	NA
Re	ceipt/Refrigeration	12/10/98	NA
	tractions Base Neutrals	12/14/98	14 days
An	alyses		
1. 2.	Volatile Organics Base Neutrals	12/15/98 12/21,22/98	14 days 40 days

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

Definition of Qualifiers

MDL: Method Detection Limit

J : Compound identified below detection limit
 B : Compound in both sample and blank
 D : Results from dilution of sample

U : Compound searched for but not detected

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

Data File Nam vb02376.d Operator

Skelton

Date Acquired 15 Dec 98 11:53 am

Sample Name Field ID

Vblk74 Vblk74

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ug/I)*	MDL	Qualifier
107028	Acrolein			not d	etected	50	1.85 ug/L	
107131	Acrylonitrile			not d	etected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not d	etected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not d	etected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not d	etected	nle	0.25 ug/L	
	Dichlorodifluoromethan			not d	etected	nie	1.68 ug/L	
74-87-3	Chloromethane			not d	etected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not d	etected	5	_1.06 ug/L	
74-83-9	Bromomethane			not d	etected	10	1.10 ug/L	
75-00-3	Chloroethane				etected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane				etected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene				etected	2	0.24 ug/L	
67-64-1	Acetone				etected	700	1.36 ug/L	
75-15-0	Carbon Disulfide				etected	nle	_0.46 ug/L	
75-09-2	Methylene Chloride		 		etected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene				etected	100	0.16 ug/L	
75-35-3	1.1-Dichloroethane				etected	70	0.12 ug/L	
108-05-4	Vinyl Acetate				etected	nlo	0.78 ug/L	
78-93-3	2-Butanone				etected	300	0.62 ug/L	
70-75-5	cis-1,2-Dichloroethene				etected	10	0.17 ug/L	
67-66-3	Chloroform				etected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane				etected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride				etected	2	0.47 ug/L	
71-43-2	Benzene				etected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane		· · · · · · · · · · · · · · · · · · ·		etected	2	0.18 ug/L	
79-01-6	Trichloroethene				letected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane				letected	i	0.40 ug/L	<u> </u>
75-27-4	Bromodichloromethane				letected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe				etected	nle	0.65 ug/L	
10061-01-5					etected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone				etected	400	0.59 ug/L	
108-88-3	Toluene				etected	1000	0.37 ug/L	
	trans-1,3-Dichloroprope		 		letected	nle	0.37 ug/L	
79-00-5	1,1,2-Trichloroethane				letected	3	0.48 ug/L	
127-18-4	Tetrachloroethene				etected	1	0.48 ug/L 0.32 ug/L	
591-78-6	2-Hexanone				letected	nle		
	Dibromochloromethane		 		etected	10	0.71 ug/L	
			 				- VISO 4772	
108-90-7	Chlorobenzene		 		letected	700	0.39 ug/L	
100-41-4	Ethylbenzene		 		letected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes		 		letected	nle	1.14 ug/L	
1330-20-7	o-Xylene		 		letected	nle	0.62 up/L	
100-42-5	Styrene		 		letected	100	0.56 ug/L	
75-25-2	Bromoform				letected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan		 		letected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene				letected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene				letected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene		<u> </u>	not d	letected	600	0.64 ug/L	

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

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

1E VOLAT

· —	
ILE ORGANICS ANALYSIS DATA SHEET	FIELD ID

		TENT		CNITICIE		LINIDO				
l ah Namai	CAJETI	I EN I /	ATIVELY ID			980211		v	bik74	}
Lab Name:	FMETL				_ Project	900211		. L		
NJDEP#	13461		case No.: 4	136	_ SDG N	lo	Lo	ocation	UST	
Matrix (soil/w	ater)	WATER			La	ab Sample	e ID:	Vblk74		
Sample wt/vo	l:	5.0	(g/mi)	ML	_ La	ab File ID:		VB02376	.D	_
Level: (low/m	ned)	LOW			D	ate Recei	ved:	12/10/98		_
% Moisture: n	ot dec.				D	ate Analyz	zed:	12/15/98		_
GC Column:	HP5M	S_ID:	0.25 (mr	n)	D	ilution Fac	ctor:	1.0		_
Soil Extract V	olume:		(uL)		s	oil Aliquot	Volu	me:	·	_ (uL)
				CC	NCENTRA	TION UN	ITS:			
Number TICs	found:	0		(ug	/L or ug/Kg) <u>UG</u>	i/L			
CAS NO		COMPO	MAM CIVILIC	F		RT	FS	T CONC		O

I KIN

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

Data File Nam vb02381.d Operator Skelton

Sample Name Field ID

4136.01 Trip Blank

Date Acquired 15 Dec 98 4:07 pm

Sample Multiplier

					Regulatory Level		
CAS#	Compound Name	R.T.	Response	Result	(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	
	Dichlorodifluoromethan			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	<u> </u>
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene		L	not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1_1_	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.65 ug/L	
	cis-1,3-Dichloropropene			not detected	nic	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	<u> </u>
	trans-1,3-Dichloroprope			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_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-Tetrachloroethan			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	
·							

0.64 ug/L * Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

not detected

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

1,2-Dichlorobenzene

95-50-1

PQL = Practical Quantitation Limit

MDL = Method Detection Limit NLE = No Limit Established

R.T. = Retention Time

1E VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

		TENTATIVELY IDEN	TIFIED COMPO	DUNDS	Γ		
Lab Name:	FMETL		Project	980211		Trip Bl	ank
NJDEP#	13461	Case No.: 4136	SDG	No	Loca	tion <u>US</u> 7	<u> </u>
Matrix (soil/v	vater)	WATER	l	.ab Sample	ID: 41	36.01	
Sample wt/vo	ol:	5.0 (g/ml) ML		.ab File ID:	VE	302381.D	
Level: (low/r	ned)	LOW	ſ	Date Receiv	red: 12	/10/98	
% Moisture: ı	not dec.		[Date Analyz	ed: 12	/15/98	
GC Column:	HP5M	S ID: <u>0.25</u> (mm)		Dilution Fac	tor: <u>1.0</u>)	
Soil Extract V	/olume:	(uL)	8	Soil Aliquot	Volume	·	(uL
Number TIC:	s found:	0	CONCENTR (ug/L or ug/K				
CAS NO.	-	COMPOUND NAME		RT	EST.	CONC.	Q

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

Data File Nam vb02382.d Operator Skelton

82.d Sample Name n Field ID 4136.02 Field Blank

Date Acquired 15 Dec 98 4:52 pm

Sample Multiplier

1101

CASH	Company Name	R.T.	Bernene	Damile	Regulatory Level	MDI	
CAS# 107028	Compound Name Acrolein	<u> </u>	Response	Result not detected	(ug/l)*	MDL	Qualifier
	Acrylonitrile			not detected		1.85 ug/L	
107131 75650	tert-Butyl alcohol			not detected	50	2.78 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	8.52 ug/L	
	Di-isopropyl ether				nle	0.16 ug/L	
108203	Dichlorodifluoromethan			not detected not detected	nle nle	0.25 ug/L	
74-87-3	Chloromethane			not detected	30	1.68 ug/L	
	Vinyl Chloride			not detected	5	1.16 ug/L	
75-01-4	Bromomethane					1.06 ug/L	
74-83-9	Chloroethane			not detected not detected	10	1.10 ug/L	
75-00-3	Trichlorofluoromethane			not detected	nie	1.01 ug/L	
75-69-4	1,1-Dichloroethene		 	not detected	nle	0.50 ug/L	
75-35-4	Acetone				2 700	0.24 ug/L	
67-64-1	Carbon Disulfide			not detected not detected	700	1.36 ug/L	
75-15-0 75-09-2	Methylene Chloride			not detected	nle 2	0.46 ug/L 0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L 0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70		
108-05-4	Vinyl Acetate			not detected		0.12 ug/L	
78-93-3	2-Butanone			not detected	nle 300	0.78 ug/L	
18-93-3	cis-1,2-Dichloroethene			not detected		0.62 ug/L	
67-66-3	Chloroform			not detected	10 6	0.17 ug/L 0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected			
56-23-5	Carbon Tetrachloride			not detected	30	0.23 ug/L	
71-43-2	Benzene			not detected	1	0.47 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L 0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.23 ug/L 0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.40 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.55 ug/L 0.65 ug/L	
	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	
	trans-1,3-Dichloroprope			not detected	nle	0.37 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.48 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.32 ug/L 0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.71 ug/L 0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.80 ug/L	
100-41-4	Ethylbenzene			not detected	700		
1330-20-7	m+p-Xylenes			not detected		0.65 ug/L	
1330-20-7	o-Xylene			not detected	nle	1.14 ug/L	
				not detected	nle	0.62 ug/L	
100-42-5	Styrene Bromoform				100	0.56 ug/L	
75-25-2			 -	not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan	<u> </u>		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	L		not detected	600	0.64 ug/L	4

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

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

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

							I
Lab Name:	FMETL		Project	980211	L	Field Bl	lank
NJDEP#	13461	Case No.: 4136	SDG N	0	Locati	ion <u>US</u> T	Γ
Matrix (soil/v	vater)	WATER	La	b Sample	ID: <u>413</u>	6.02	
Sample wt/vo	ol:	5.0 (g/ml) ML	La	b File ID:	VB	02382.D	
Level: (low/r	ned)	LOW	Da	ite Receive	ed: <u>12/</u>	10/98	
% Moisture: ı	not dec.		Da	ite Analyze	ed: <u>12/</u>	15/98	
GC Column:	HP5M	S ID: 0.25 (mm)	Dil	ution Fact	or: <u>1.0</u>		
Soil Extract Volume:		(uL)	So	il Aliquot V	/olume:		(uL)
		c	ONCENTRA	TION UNIT	rs:		
Number TICs	s found:	0 (1	ug/L or ug/Kg)	UG/I	L 	-	
CAS NO.		COMPOUND NAME		RT	EST. C	CONC.	Q

= 1

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

Data File Nam vb02384.d Operator Skelton Sample Name Field ID 4137.01 Bldg550

Date Acquired 15 Dec 98 6:22 pm

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifie
107028	Acrolein		respond	not detected	50	1.85 ug/L	Quantit
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	0.10 ug/L 0.25 ug/L	
100203	Dichlorodifluoromethan			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	1.16 ug/L 1.06 ug/L	
74-83-9	Bromomethane			not detected	10		
75-00-3	Chloroethane			not detected		1.10 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	1.01 ug/L	
	(nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2 700	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	<u> </u>		not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	<u> </u>
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone		<u> </u>	not detected	300	0.62 ug/L	<u> </u>
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	<u> </u>
67-66-3	Chloroform		<u> </u>	not detected	6	0.30 ug/L	<u> </u>
75-55-6	1,1,1-Trichloroethane		ļ	not detected	30	0.23 ug/L	<u> </u>
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 <u>-01</u> -6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	11	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	11	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			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-Dichloroprope			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	
	Dibromochloromethane			not detected	10	0.86 ug/L	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-Tetrachloroethan			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	E .

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

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

ATH E OBOAL

VOLATILE ORGANICS ANALYSIS DATA SHEET

1E

FIELD ID

		ICHIAIIVELT IDENIIF	ED COMPC	DOIND2		1		.
Lab Name: <u>F</u>	METL		Project	980211		BI	dg. 550	
NJDEP# 1	3461	Case No.: 4137	SDG	۷o	_ Lo	cation	UST	
Matrix (soil/wat	er)	WATER	L	ab Sample	ID:	4137.01		
Sample wt/vol:		5.0 (g/ml) ML	L	ab File ID:	,	VB02384	4.D	-
Level: (low/me	d)	LOW		ate Receiv	red:	12/10/98	3	~
% Moisture: not	dec.		C	ate Analyz	ed:	12/15/98	3	_
GC Column:	HP5MS	S ID: <u>0.25</u> (mm)		ilution Fac	tor:	1.0		_
Soil Extract Vol	ume:	(uL)	8	oil Aliquot	Volun	ne:		_ (uL)
Number TICs fo	ound:		ONCENTR/ g/L or ug/K(
CAS NO.		COMPOUND NAME		RT	ES	T. CONC) .	Q

BASE NEUTRAL

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BN02453.D
Operator Skelton

Sample Name

Sblk180

Date Acquired 21-Dec-98

Misc Info Sample Multiplier Sblk180 A 981214

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00 u	2/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.94 ս	/L
62-53-3	Aniline			not detected	NLE	0.15 u	z/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48 u	z/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23 u	ı/L
100-51-6	Benzyl alcohol			not detected	NLE	0.18 u	z/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16 u	ΛL
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61 u	/L
67-72-1	Hexachloroethane			not detected	. 10	0.33 u	ν/L
98-95-3	Nitrobenzene			not detected	10	0.46 u	2/L
<u>78-59-1</u>	Isophorone			not detected	100	0.35 ս	γL
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.46 ս	/L
65-85-0	Benzoic Acid			not_detected	· NLE	0.26 ս	g/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25 u	z/L
91-20-3	Naphthalene			not detected	NLE	0.25 u	√L
106-47-8	4-Chloroaniline			not detected	NLE	0.19 ս	z/L
87 <u>-68-3</u>	Hexachlorobutadiene			not detected	11	0.38 ս	VL .
91-57-6	2-Methylnaphthalene			not detected	NLE	0.16 u	z/L
77-47-4	Hexachlorocyclopeutadiene			not detected	50	1.50 u	√L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.32 u	z/L
88-74-4	2-Nitroaniline			not detected	NLE	0.21 u	v/L
131-11-3	Dimethylphthalate	_		not detected	7000	0.18 և	z/L
208-96-8	Acenaphthylene			not_detected	NLE	0.19 և	z/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.31 ս	g/L
99-09-2	3-Nitroaniline			not detected	NLE	0.26 ս	e/L
83-32-9	Acenaphthene			not detected	400	0.26 ս	z/L
132-64-9	Dibenzofuran	$oxed{oxed}$		not detected	NLE	0.32 u	z/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.36 u	g/L
84-66-2	Diethylphthalate	<u> </u>		not detected	5000	0.82 u	e/L
86-73-7	Fluorene			not detected	300	0.29 u	v/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.31 ս	z/L
100-01-6	4-Nitroaniline	<u> </u>		not detected	NLE	0.90 น	2/L
86-30-6	n-Nitrosodiphenylamine	1		not detected	20	0.23 น	v∕L
103-33-3	Azobenzene			not detected	NLE	0.80 u	/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.55 u	o/L
118-74-1	Hexachlorobenzene			not detected	10	0.82 u	e/L
85-01-8	Phenanthrene	$oldsymbol{ol}}}}}}}}}}}}}}}}}$		not detected	NLE	0.18 u	<u>√L</u>
120-12-7	Anthracene			not detected	2000	0.19 ս	g/L
84-74-2	Di-n-butylphthalate			not detected	900	0,23 ս	v/L
206-44-0	Fluoranthene			not detected	300	0.41 u	g/L
92-87-5	Benzidine			not detected	50	1.45 u	o/L
129-00-0	Pyrene	<u> </u>		not detected	200	0,32 u	v/L
85-68-7	Butylbenzylphthalate			not detected	100	0.47 u	ı/L
56-55-3	Benzo[a]anthracene			not detected	10	0.22 ນ	e/L
91-94-1	3,3'-Dichlorobenzidine	$oxed{oxed}$		not detected	60	0.46 u	g/L
218-01-9	Chrysene			not detected	20	0.20 น	g/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	0.51 u	g/L
117-84-0	Di-n-octylphthalate			not detected	100	0.82 น	g/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.37 น	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.32 u	g/L
50-32-8	Benzo[a]pyrene			not detected	20	0.31 u	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.79 u	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.28 u	
<u> </u>							

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

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

	2. W 400			
FMETL		_ Lab Cod	13461	Sblk180
98-0932	Case No.: 4137	Location: UST		SDG No:

98-0 Project: Matrix: (soil/water) **WATER** Lab Sample ID: Sblk180 Sample wt/vol: 1000 Lab File ID: BN02453.D (g/ml) ML Level: (low/med) LOW Date Received: 12/10/98 % Moisture: decanted: (Y/N) Date Extracted: 12/14/98 Concentrated Extract Volume: 1000 Date Analyzed: 12/21/98 (uL) Injection Volume: 1.0 Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Lab Name:

الله

CONCENTRATION UNITS:

Field ID:

 Number TICs found:
 0
 (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

BN02467.D

Sample Name

4136.02 Field Blank

Operator Date Acquired

ij

Skelton 22-Dec-98

Sample Multiplier

Misc Info

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00	up/L	
62-75-9	N-nitroso-dimethylamine			not detected	20		ug/L	
62-53-3	Aniline			not detected	NLE		ug/L	
111-44-4	bis(2-Chloroethyl)ethar			not detected	10		ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75		ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	-	ue/L	
95-50-1	1,2-Dichlorobenzene			not detected	600		ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300		ug/L	
67-72-1	Hexachloroethane			not detected	10		ug/L	
98-95-3	Nitrobenzene			not detected	10	0,46	υg/L	
78-59-1	Isophorone			not detected	100		ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE		ug/L	
55-85-0	Benzoic Acid			not detected	NLE		ug/L	
20-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25	ug/L	
91-20-3	Naphthalene			not detected	NLE	0,25	ug/L	
06-47-8	4-Chloroaniline			not detected	NLE		ug/L	
37-68-3	Hexachlorobutadiene			not detected	1	0.38	ug/L	
1-57-6	2-Methylnaphthalene			not detected	NLE		սց/Լ	
747-4	Hexachlorocyclopentadiene			not detected	50	1,50	ug/L	
1-58-7	2-Chloronaphthalene	1		not detected	NLE	0.32	ug/L	
8-74-4	2-Nitroaniline			not detected	NLE	0.21	ug/L	
31-11-3	Dimethylphthalate			not detected	7000	0.18	ue/L	
08-96-8	Acenaphthylene			not detected	NLE	0.19	ug/L	
06-20-2	2,6-Dinitrotoluene			not detected	NLE	0.31	ug/L	<u> </u>
9-09-2	3-Nitroaniline			not detected	NLE	0.26	ug/L	L
3-32-9	Acenaphthene			not detected	400	0.26	ug/L	
32-64-9	Dibenzofuran			not detected	NLE	0.32	ug/L	<u> </u>
21-14-2	2,4-Dinitrotoluene			not detected	10	0.36	ug/L	
4-66-2	Diethylphthalate		<u>. </u>	not detected	5000	0.82	ug/L	
6-73-7	Fluorene			not detected	300	0.29	ug/L	L
005-72-3	4-Chlorophenyl-phenylether			not detected	NLE_	0.31	uø/L	ļ
00-01-6	4-Nitroaniline			not detected	NLE	0.90	ug/L	
6-30-6	n-Nitrosodiphenylamine			not detected	20	0.23	ug/L	
03-33-3	Azobenzene	_		not detected	NLE	0,80	ug/L	ļ
01-55-3	4-Bromophenyl-phenylether			not detected	NLE		up/L	<u> </u>
18-74-1	Hexachlorobenzene	-		not detected	10	0,82	ug/L	
5-01-8	Phenanthrene			not detected	NLB	0.18	ug/L	
20-12-7	Anthracene			not detected	2000		ug/L	
4-74-2	Di-n-butylphthalate	1		not detected	900	0.23		├ ──
06-44-0	Fluoranthene	-		not detected	300	0,41	ug/L	
2-87-5	Benzidine	 		not detected	50	1.45		<u> </u>
29-00-0	Pyrene			not detected	200	0,32		ļ
5-68-7	Butylbenzylphthalate			not detected	100		ug/L	ļ
6-55-3	Benzofa]anthracene	-	<u> </u>	not detected	10		ug/L	
1-94-1	3,3'-Dichlorobenzidine	1		not detected	60		w/L	
18-01-9	Chrysene	1		not detected	20		up/L	<u> </u>
17-81-7	bis(2-Ethylhexyi)phthalate		<u> </u>	not detected	30	0.51	ug/L	
17-84-0	Di-n-octylphthalate	<u>_</u>		not detected	100	0.82	υ <u>ρ/Ι.</u>	<u> </u>
05-99-2	Benzo bifluoranthene			not detected	10	0.37	ug/L	L
07-08-9	Benzo[k]fluoranthene			not detected	2	0.32	ug/L	
0-32-8	Benzo[a]pyrene			not detected	20	0.31	ug/L	<u> </u>
93-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.79	ug/L	<u></u>
3-70-3	Dibenz[a,h]anthracene			not detected	20	0.28	ug/L	L
				not detected	NLE	0.40		

• Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6

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

Field ID: **TENTATIVELY IDENTIFIED COMPOUNDS** Field Blank Lab Cod 13461 Lab Name: **FMETL Project** 98-0932 Case No.: 4136 Location: UST SDG No: Lab Sample ID: 4136.02 Matrix: (soil/water) **WATER** Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN02467.D Level: (low/med) LOW Date Received: 12/10/98 Date Extracted: 12/14/98 % Moisture: decanted: (Y/N) Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/22/98 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		

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name

BN02469.D

Sample Name

4137,02 Bldg550

Operator

Date Acquired

Skeiton 22-Dec-98 Misc Info Sample Multiplier

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.94	ug/L	
62-53-3	Aniline			not detected	NLE	0.15	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.18	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	_600	0.16	ug/L	<u> </u>
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61	ug/L	<u> </u>
<u>67-72-1</u>	Hexachloroethane			not detected	10	0.33	ug/L	
98-95-3	Nitrobenzene	\perp		not detected	10	0,46	ug/L	
78-59-1	Isophorone			not detected	100	0.35	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0,46	ug/L	
65-85-0	Benzoic Acid	<u> </u>		not detected	NLE	0.26	սա/Լ	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25	ug/L	<u> </u>
91-20-3	Naphthalene			not detected	NLE	0.25	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	0.19	ug/L	
87-68-3	Hexachlorobutadiene			not detected		0.38	ug/L	<u> </u>
91-57-6	2-Methylnaphthalene	_		not detected	NLE	0.16	ug/L	<u> </u>
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.50	ug/L	<u> </u>
91-58-7	2-Chloronaphthalene			not detected	NLE	0.32	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.21	ug/L	<u> </u>
131-11-3	Dimethylphthalate			not detected	7000	0.18	ug/L	<u> </u>
208-96-8	Acenaphthylene			not detected	NLE	0.19	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.31	ug/L	<u> </u>
99-09-2	3-Nitroaniline			not detected	NLE	0.26	ug/L	<u> </u>
83-32-9	Acenaphthene			not detected	400	0.26	ug/L	<u> </u>
132-64-9	Dibenzofuran			not detected	NLE	0,32	ug/L	<u> </u>
121-14-2	2,4-Dinitrotoluene			not detected	10	0,36	ug/L	ļ
84-66-2	Diethylphthalate	1		not detected	5000	0.82	ug/L	Ļ
86-73-7	Fluorene			not detected	300	0.29	ug/L	<u> </u>
7005-72-3	4-Chlorophenyl-phenylether		·	not detected	NLE	0.31	ue/L	<u> </u>
100-01-6	4-Nitroaniline	-		not detected	NLE	0.90	ug/L	<u> </u>
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.23	ug/L	
103-33-3	Azobenzene	<u> </u>		not detected	NLE	0.80	ug/L	
101-55-3	4-Bromophenyl-phenylether	_		not detected	NLE	0.55	ug/L	ļ
118-74-1	Hexachlorobenzene			not detected	10	0.82	ug/L	<u> </u>
85-01-8	Phenanthrene		~	not detected	NLE	0.18	ug/L	
120-12-7	Anthracene			not detected	2000	0.19	ug/L	——
84-74-2	Di-n-butylphthalate			not detected	900	0.23	ug/L	 _
206-44-0	Fluoranthene	ļ		not detected	300	0,41	ug/L	
92-87-5	Benzidine			not detected	50	1.45	ug/L	ــــــ
129-00-0	Ругеле			not detected	200		ug/L	<u> </u>
85-68-7	Butylbenzylphthalate			not detected	100	0.47	ug/L	
56-55-3	Benzo[a]anthracene	\bot		not detected	10	0.22	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.46	ug/L	<u> </u>
218-01-9	Chrysene			not detected	20	0.20	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	0,51	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.82	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0,37	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	r	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20		ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20		ug/L	1
53-70-3	Dibenz[a,h]anthracene			not detected	20	•	ug/L	
191-24-2	Benzolg h,i]perylene	1		not detected	NLE		ug/L	

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

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

CENTATI	VELV IDEN	JTIFIFD CO	OMPOUNDS
IENIAIT	VELT IDEN	いいきにし し	UMPUUNUS

Field ID:

Lab Name:	FMETL			Lab Cod	13461	Bidg.550
Project:	98-0932	Ca	se No.: 4137	_ Locatio	n: <u>UST</u> S	SDG No:
Matrix: (soil/	water)	WATER		La	b Sample ID:	4137.02
Sample wt/vo	ol:	1000	(g/ml) ML	La	ab File ID:	BN02469.D
Level: (low/r	ned)	LOW	- - -	Da	ate Received:	12/10/98
% Moisture:		dec	anted: (Y/N)	N Da	ate Extracted	: 12/14/98
Concentrated	d Extract \	Volume:	1000 (uL)	Da	ate Analyzed:	12/22/98
Injection Volu	ume: <u>1.0</u>	(uL)		Di	lution Factor:	1.0
GPC Cleanu	p: (Y/N)	N	pH:			
				CONCEN	TRATION UN	IITS:

Numi	per TICs found:	4 (ug/L	or ug/Kg)	UG/L	· · · · · · · · · · · · · · · · · · ·
CAS	SNUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000629-78-7	Heptadecane	14.31	13	JN
2.	054105-67-8	Heptadecane, 2,6-dimethyl-	16.51	16	JN
3.	054105-67-8	Heptadecane, 2,6-dimethyl-	17.13	28	JN
4.	000629-62-9	Pentadecane	18.23	12	JN

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.	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	
	oratory Manager or Environmental Consultant's Signature	5

ID-C-+ NIAC 2-2/C Asserting A Continuity Dr. Date of Date of

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
NJDEP LABORATORY CERTIFICATION # 13461



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

Bldg. 550

Field Location No. &	Laboratory	Matrix	Date and Time	Date Received
Location	Sample ID#		Of Collection	
Trip Blank	4187.01	Aqueous	13-Jan-99	01/13/99
Field Blank	4187.02	Aqueous	13-Jan-99 09:10	01/13/99
Bldg. 550	4187.03	Aqueous	13-Jan-99 09:50	01/13/99
Bldg. 550	4187.04	Aqueous	13-Jan-99 09:59	01/13/99
Dup.	4187.05	Aqueous	13-Jan-99	01/13/99

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

2-13-99

Daniel Wright/Date
Laboratory Director

Table of Contents

Section	Pages
Chain of Custody	1-3
Field Documentation	4-6
Methodology Summary	7-8
Conformance/Non-Conformance Summary	9-11
Laboratory Chronicle	12-13
Volatile Organics	14-15
Analytical Results Summary	16-25
Tune Results Summary	26-29
Method Blank Results Summary	30
Calibration Summary	31-34
Surrogate Recovery Summary	35
MS/MSD Results Summary	36-37
Internal Standard Area & RT Summary	38
Chromatograms	39-52
Base Neutrals	53
Analytical Results Summary	54-61
Tune Results Summary	62-65
Method Blank Results Summary	66
Calibration Summary	67-68
Surrogate Recovery Summary	69
MS/MSD Results Summary	70-73
Internal Standard Area & RT Summary	74-77
Chromatograms	78-87
Laboratory Deliverables Checklist	88
Laboratory Authentication Statement	89

CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Cher	les Applebu	Project No:				Analysis Parameters				Comments:			
Phone #: XX le Zo		Location: Bldg 550 UST											
()DERA ()OMA (_J -	(c.t.).		15	b						/ .
Samplers Name / Con	npany: Core McC	ormach,	TUS	Sample	#	6	BN≠15					3	HCL/ < 4°C
Lab Sample I.D.	Sample Location	Date	Time	Туре	bottles	4	8					7	Remarks / Preservation Method
418701	Trip	1/13/99	0815	AQ	2	/						/	O.8 ppm Outher to 4,0;
.02	Field Blank) ' /	0910		3		~						, ,
.03	B16 550		0950		2	~							Outher to HO:
.04			0959		1		/			 			11.77 ft
.05	Dupe	4		4	3	<u> </u>	/			 			
	·		}							 			
		ļ								 			
		 	 		 					 	ļi		
					ļ								
		· 			<u> </u>					 			
					.				j	 			
	<u> </u>									 			
	· · · · · · · · · · · · · · · · · · ·												
Relinquished by (signatur	re): Date/Time:	Received by	(signature):		Reline	elinquished by (signature): Date/Time: Received by			ved by	(signature):			
long the Corner	6 //1×199 1105		yu		ļ								
Relinquished by (signatur	re): Date/Time:	Received by	signature):		Relinquished by (signature): Date/Time: Received by			ed by ((signature):				
Report Type: (_)Full,	educed, (_)Standard, (_)Scre	en / non-certifi	ed		Remarks: light fuel odon								
Turnaround time: (Stand	lard 4 wks, (_)Rush Days	, (_)ASAP Ve	rbal Hr	S.									

Field Duplicate Identification

Sample Id	Lab ID	Field Duplicate
Bldg. 550	4187.03	4187.05
Bldg. 550	4187.04	4187.05

FIELD DOCUMENTATION

Post Remedial Groundwater Sampling at Former Underground Storage Tank Site [# 2 fuel oil]

FOR BLDG. #550

Ground Water Sampling with the use of a Passively Placed Narrow Diameter Point (PPNDP)

Objective:

To collect a representative groundwater sample utilizing a narrow diameter point [PPNDP] This is a small diameter [1-inch OD] screened casing passively placed in a borehole. The casing is of p.v.c. construction.

1. Methods

A. A solid push - rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0.010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. Installation

- A. Using a Geoprobe, a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 15 feet. The water table was at 13 feet below ground surface.
- B. The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 10 15 feet. Riser casing from 10 0 feet.

3. Purging

A. Three volumes of the standing water in the point were purged. The amount of water extracted was app. 0.123 gal. Three to five volumes are purged due to the potential for cross contamination of the screen from upper soil horizons. This was accomplished utilizing a peristaltic pump, and utilizing food grade tubing.

4. Sampling

A. Sampling methods, sample preservation requirements, sample handling times, decontamination procedure for field equipment, and frequency for field blanks, field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP "Field Sampling Procedures Manual" in effect as of the date on which sampling is performed. Any deviations from the methods in the "Field Sampling Procedures Manual" pursuant to N.J.A.C. 7:26E-1.6(c) has been approved by the person responsible for conducting the remediation.

All samples were preserved in the field immediately after collection and submitted to the laboratory as soon as possible and no later than 48 hours after sample collection.

The acquisition of samples and water level measurements were performed as recommended and described in the May 1992 edition of NJDEP Field Sampling Procedures Manual.

5. Quality Assurance/Quality Control

A. Decontamination

The associated equipment (bull point, riser pipe, etc.) was decontaminated between borings using the following procedure:

- 1. Remove all adherent soil material.
- 2. Wash with a laboratory grade glassware detergent.
- 3. Rinsed with potable water.
- 4. Rinse with distilled and deionized ASTM Type II water.

B. Field Blanks

الآت

- 1 Field blank was shared with bldg. 447, taken same day.
- C. Sample bottles: Supplied by Environmental Sampling Supply, Oakland, Calif. The sample bottles are certified clean and are sealed upon delivery.
- D. P.V.C. Screens: Supplied by Bedrock Enterprises, Forked River N.J.

Geoprobe Operator: Mark Laura Employer: U.S. Army, Fort Monmouth Phone Number: [732] 532-8990 NJDEP License #: J-1486

> Maye Jem 12-10-98 Mark Laura / Date

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 la	beled/Compounds identified	
		s and method blanks)	ues
			1.00
2.	Retention times for	r chromatograms provided	<u>yes</u>
3.	GC/MS Tune Spec	ifications	•
	a.	BFB Meet Criteria	Les
	b.	DFTPP Meet Criteria	yes
4.		equency – Performed every 24 hours for 600	l
	series and 12 hours	for 8000 series	<u>yes</u>
5 .	analysis and contin	n — Initial Calibration performed before sample using calibration performed within 24 hours of	<u>.</u>
	sample analysis for	600 series and 12 hours for 8000 series	<u> 465</u>
6.	GC/MS Calibration	n requirements	•
	a.	Calibration Check Compounds Meet Criteria	Ves
	ъ.	System Performance Check Compounds Meet Criteria	yes
7.	Blank Contaminati	on - If yes, List compounds and concentrations in each blank:	<u>60</u>
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction NA	
8.	Surrogate Recoveri	es Meet Criteria	NO
	If not met, list outside the acc	those compounds and their recoveries, which fall eptable range:	
	a.	VOA Fraction	708
	b.	B/N Fraction 4/87. 04 NHeobensened 5 is C	ow at 29%
	C.	Acid Fraction NA O	
	If not met, wer	e the calculations checked and the results qualified	UOS.
	as estimated	•	7~
9.		x Spike Duplicate Recoveries Meet Criteria	yes yes
		se compounds and their recoveries, which fall	,
	outside the acceptal	ble range)	
	a.	VOA Fraction	
	b.	B/N Fraction	
	c.	Acid Fraction NA	

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (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	e range)
	a. VOA Fraction	
	b. B/N Fraction	
	c. Acid Fraction NA	
11.	Extraction Holding Time Met	yes
	If not met, list the number of days exceeded for each sample:	· .
12.	Analysis Holding Time Met	yes
	If not met, list the number of days exceeded for each sample:	· · · · · · · · · · · · · · · · · · ·
Add	litional Comments:	
I obe	Date: 2-	15.40

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4187

Site: Bldg. 550

Hold Time Date Date Sampled NA 01/13/99 Receipt/Refrigeration NA 01/13/99 **Extractions** 7 Days 1. Base Neutrals 01/14/99 Analyses 1. Volatile Organics 14 Days 01/22/99 2. Base Neutrals 01/26/99 40 Days

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

Definition of Qualifiers

MDL: Method Detection Limit

a, i

J : Compound identified below detection limitB : Compound in both sample and blank

D : Results from dilution of sample

U : Compound searched for but not detected

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

Data File Name v05520.d Operator

Skelton

Sample Name Field ID

Vblk146 Vblk146

Date Acquired 22 Jan 1999 9:08

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ng/l)*	MDL	Qualifiers
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	
	Dichlorodifluoromethane		,	not detected	nle	1.68 ug/L	<u> </u>
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene		_	not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene	1		not detected	10	0.17 ug/L	
67-66-3	Chloroform	<u> </u>		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	1		not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1_1_	0.23 ug/L	
107-06-2	1,2-Dichloroethane	<u> </u>		not detected	2	0.18 ug/L	
79-01-6	Trichloroethene		ļ	not detected	11	0.23 ug/L	
78-87-5	1,2-Dichloropropane	 		not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane	<u> </u>		not detected	11	0.55 ug/L	<u> </u>
110-75-8	2-Chloroethyl vinyl ether	ļ		not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene	 		not detected	nle	0.69 ug/L	<u> </u>
108-10-1	4-Methyl-2-Pentanone	<u> </u>		not detected	400	0.59 ug/L	
108-88-3	Toluene	ļ		not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene	 	ļ	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	ļ	 	not detected	1	0.32 ug/L	
591-78-6	2-Hexanone	 	<u> </u>	not detected	nle	0.71 ug/L	·
126-48-1	Dibromochloromethane	_		not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene	<u> </u>		not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes	<u> </u>		not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene	<u> </u>		not detected	nle	0.62 ug/I	
100-42-5	Styrene	 _	<u> </u>	not detected	100	0.56 ug/I	
75-25-2	Bromoform	 	<u> </u>	not detected	4	0.70 ug/I	
79-34-5	1,1,2,2-Tetrachloroethane	<u> </u>		not detected	2	0.47 ug/I	
541-73-1	1,3-Dichlorobenzene	1	<u> </u>	not detected	600	0.55 ug/I	
106-46-7	1,4-Dichlorobenzene		1	not detected	75	0.57 ug/I	
95-50-1	1,2-Dichlorobenzene	1		not detected	600	0.64 ug/l	.1

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

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

1E **VOLATILE ORGANICS ANALYSIS DATA**

Case No.: 4187

(g/ml) ML

TENITATIV	KEI V IDEN	TIFIED CO	OMPOUNDS
IENIAIIV	CLI IDEN	ココアにピレ しい	コミトしいいいつ

Project

IS DATA SHEET	FIELD ID
COMPOUNDS roject 980932	Vblk146
Location UST S	DG No.:
Lab Sample ID:	Vblk146
Lab File ID:	V05520.D
Date Received:	01/13/99
Date Analyzed:	01/22/99
Dilution Factor:	1.0
Soil Aliquot Volu	me: (uL)
ENTRATION UNITS:	

CONCENTRAT (ug/L or ug/Kg)

Number TICs found:

FMETL

13461

WATER

5.0

GC Column: RTX-502 ID: 0.25 (mm)

LOW

Lab Name:

Matrix: (soil/water)

Sample wt/vol:

Level: (low/med)

% Moisture: not dec.

Soil Extract Volume:

CAS NO.

NJDEP#

a. I

COMPOUND NAME

RT

EST. CONC.

Q

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

Operator

Data File Name v05538.d

Skelton

Date Acquired 22 Jan 1999 22:21

Sample Name

Field ID

4187.01 Trip Blank

Sample Multiplier

107028 Acryloinitile	CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifiers
1634044 Methyl-tert-Butyl ether	107028	Acrolein			not detected	50	1.85 ug/L	
1634044 Methyl-tert-Buryl ether	107131	Acrylonitrile			not detected	50	2.78 ug/L	
108203 Di-isopropyl ether Dichlorodifluoromethane Dichlorodifl	75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
Dichlorodifluoromethane	1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
T4-87-3 Chloromethane	108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75-01-4		Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
Telegraph Bromomethane	74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-09-3	75-01-4	Vinyl Chloride			not detected	5	1.06 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 76-64-1 Acetone not detected 700 136 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 75-09-3 Trichloroethene not detected 100 0.16 ug/L 75-35-3 1,1-Dichloroethene not detected 100 0.16 ug/L 75-35-3 1,1-Dichloroethane not detected nle 0.78 ug/L 78-93-3 2-Butanone not detected nle 0.79 ug/L 67-66-3 Chloroform not detected 10 0.17 ug/L 67-66-3 Chloroform not detected 30 0.23 ug/L 75-55-6 1,1,1-Trichloroethane not detected 2 0.47 ug/L 71-43-2 Benzene not detected 2 0.47 ug/L 71-43-2 Benzene not detected 1 0.23 ug/L 79-01-6 Trichloroethane 21.82 23212 5.72 ug/L 1 0.23 ug/L 79-01-6 Trichloroethane 21.82 23212 5.72 ug/L 1 0.23 ug/L 78-87-5 1,2-Dichloropropane not detected 1 0.40 ug/L 75-58 2-Chloroethyl vinyl ether not detected nle 0.65 ug/L 100-10-2 trians-1,3-Dichloropropene not detected nle 0.65 ug/L 108-10-1 4-Methyl-2-Pentanone not detected nle 0.69 ug/L 108-88-3 Toluene not detected nle 0.69 ug/L 108-88-3 Toluene not detected nle 0.69 ug/L 108-88-3 Toluene not detected nle 0.69 ug/L 108-90-7 Chlorobenzene not detected nle 0.69 ug/L 109-42-5 Syrene not detected nle 0.60 ug/L 1330-20-7 nrip-Xylenes not detected nle 0.62 ug/L	74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-35-4 1,1-Dichloroethene not detected 2 0.24 ug/L	75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
67-64-1 Acetone	75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-15-0 Carbon Disulfide	75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
75-09-2 Methylene Chloride	67-64-1	Acetone			not detected	700	1.36 ug/L	
156-60-5 trans-1_2-Dichloroethene not detected 100 0.16 ug/L	75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-35-3 1,1-Dichloroethane not detected 70 0.12 ug/L 108-05-4 Vinyl Acetate not detected ne 0.78 ug/L 78-93-3 2-Butanone not detected 300 0.62 ug/L cis-1,2-Dichloroethane 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 75-55-6 2-1,1-Trichloroethane 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 Trichloroethane 21.82 23212 5.72 ug/L 1 0.23 ug/L 78-87-5 1,2-Dichloropropane not detected 1 0.23 ug/L 75-27-4 Bromodichloromethane not detected 1 0.40 ug/L 107-75-8 2-Chloroethyl vinyl ether not detected 1 0.55 ug/L 108-10-1-5 is-1,3-Dichloropropene not detected nle 0.65 ug/L 108-10-1 4-Methyl-2-Pentanone not detected not detected not 0.59 ug/L 108-88-3 Toluene not detected 1000 0.37 ug/L 109-00-5 trans-1,3-Dichloropropene not detected not 0.69 ug/L 127-18-4 Tetachloroethane not detected nle 0.87 ug/L 126-48-1 Dibromochloromethane not detected nle 0.71 ug/L 126-48-1 Dibromochloromethane not detected nle 0.71 ug/L 1330-20-7 n+p-Xylenes not detected nle 0.65 ug/L 1330-20-7 nt-p-Xylenes not detected nle 0.65 ug/L 1330-20-7 nt-p-Xylenes not detected nle 0.65 ug/L 100-42-5 Syrene not detected nle 0.60 ug/L 100-43-5 Syrene not detected nle 0.60 ug/L 100-45-5 Syrene not detected 100 0.56 ug/L 100-45-5 Syrene not detected 100 0.65 ug/L 100-45-5 Syrene not detected 100 0.67 ug/L 100-45-5 Syrene not detected 100 0.67 ug/L 100-45-5 Syrene not detected 100 0.6	75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
108-05-4 Vinyl Acetate not detected nie 0.78 ug/L 78-93-3 2Butanone not detected 300 0.62 ug/L 67-66-3 Chloroform 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 0.48 ug/L 79-01-6 Trichloroethene 21.82 23212 5.72 ug/L 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 1061-01-5 cis-1,3-Dichloropropene not detected nle 0.69 ug/L 108-10-1 4-Methyl-2-Pentanone not detected not detected 100.57 ug/L 108-10-1 4-Methyl-2-Pentanone not detected not detected 100.00 ug/L 108-10-2-6 trans-1,3-Dichloropropene not detected nle 0.69 ug/L 108-10-3 4-Methyl-2-Pentanone not detected nle 0.87 ug/L 109-00-5 1,1,2-Trichloroethane not detected nle 0.87 ug/L 127-18-4 Tetrachloroethene not detected nle 0.87 ug/L 127-18-4 Tetrachloroethene not detected nle 0.71 ug/L 126-48-1 Dibromochloromethane not detected nle 0.71 ug/L 126-48-1 Dibromochloromethane not detected nle 0.71 ug/L 1330-20-7 m+p-Xylenes not detected nle 0.69 ug/L 1330-20-7 m+p-Xylenes not detected nle 0.69 ug/L 100-42-5 Syrene not detected nle 0.69 ug/L 100-43-5 Syrene not detected nle 0.69 ug/L 179-34-5 1,1,2,2-Tetrachloroethane not detected nle 0.69 ug/L 100-43-5 Syrene not detected nle 0.69 ug/L 100-43-5 Syrene not detected nle 0.69 ug/L 100-43-5 Syrene not detected 100 0.56 ug/L 100-43-5 Syrene not detected 100 0.69 ug/L 100-43-5 Syrene not detected	156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
78-93-3 2-Butanone not detected 300 0.62 ug/L	75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
cis-1,2-Dichloroethene not detected 10 0.17 ug/L	108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
67-66-3 Chloroform	78-93-3	2-Butanone			not detected	300		
75-55-6		cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
S6-23-5 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 21.82 23212 5.72 ug/L 79-01-6 Trichloroethene 21.82 23212 5.72 ug/L 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 108-83-3 Toluene not detected 1000 0.37 ug/L 10061-02-6 trans-1,3-Dichloropropene not detected nle 0.87 ug/L 127-18-4 Tetrachloroethane not detected nle 0.87 ug/L 127-18-4 Tetrachloroethene not detected nle 0.32 ug/L 126-48-1 Dibromochloromethane not detected nle 0.71 ug/L 108-90-7 Chlorobenzene not detected nle 0.71 ug/L 103-20-7 m+p-Xylenes not detected nle 1.14 ug/L 1330-20-7 m-y-Xylene not detected nle 0.65 ug/L 179-34-5 1,1,2-Tetrachloroethane not detected nle 0.60 ug/L 179-34-5 1,1,2,2-Tetrachloroethane not detected 100 0.56 ug/L 179-34-5 1,1,2,2-Tetrachloroethane not detected 100 0.50 ug/L 179-34-5 1,1,2,2-Tetrachloroethane not detected 100 0.40 ug/L 179-34-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L	67-66-3	Chloroform			not detected	6	0.30 ug/L	
71-43-2 Benzene	75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
107-06-2	56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
79-01-6 Trichloroethene 21.82 23212 5.72 ug/L 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 100-61-02-6 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 100-41-4 Ethylbenzene not detected	71-43-2	Benzene		L	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 100-41-4 Bthylbenzene not detected 10 0.65 ug/L 1330-20-7 mrp-Xylenes not detected nle 1.14 ug/L <td>107-06-2</td> <td>1,2-Dichloroethane</td> <td></td> <td></td> <td>not detected</td> <td>2</td> <td>0.18 ug/L</td> <td></td>	107-06-2	1,2-Dichloroethane			not detected	2	0.18 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 1000 0.37 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 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	79-01-6	Trichloroethene	21.82	23212	5.72 ug/L	1	0.23 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 179-00-5 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 nle 1.14 ug/L 1330-20-7 o-Xylene not detected nle 0.62 ug/L 100-42-5 Styrene not detected 4 0.70 ug/L 79-34-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L 100-42-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L 100-42-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L 100-42-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L	78-87-5	1,2-Dichloropropane			not detected	1	0.40 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 o-Xylene not detected nle 1.14 ug/L 100-42-5 Styrene not detected 100 0.56 ug/L 75-25-2 Bromoform not detected 2 0.47 ug/L	75-27-4	Bromodichloromethane			not detected	1	0.55 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 130-20-7 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 2 0.47 ug/L 79-34-5	110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 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 nrp-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	10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 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	108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 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	108-88-3	Toluene			not detected	1000	0.37 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	10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 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	79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 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	127-18-4	Tetrachloroethene			not detected	1	0.32 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	591-78-6	2-Hexanone			not detected	nle		
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		Dibromochloromethane			not detected	10	0.86 ug/I	
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	108-90-7	Chlorobenzene			not detected	4	0.39 ug/I	
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	100-41-4	Ethylbenzene			not detected	700		
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		,					1	
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								
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			T	!				
79-34-5 1,1,2,2-Tetrachloroethane not detected 2 0.47 ug/L			1					
				1				
	541-73-1	1,3-Dichlorobenzene	1	T	not detected	600		
106-46-7 1,4-Dichlorobenzene not detected 75 0.57 ug/L			1					
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

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

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD	ID
-------	----

Lab Name: FMET	L	Project 980932	Trip Blank
NJDEP# 13461	Case No.: 4187	Location UST S	DG No.:
Matrix: (soil/water)	WATER	Lab Sample ID:	4187.01
Sample wt/vol:	5.0 (g/ml) ML	Lab File ID:	V05538.D
Level: (low/med)	LOW	Date Received;	01/13/99
% Moisture: not ded	.	Date Analyzed:	01/22/99
GC Column: RTX	(-502 ID: 0.25 (mm)	Dilution Factor:	1.0
Soil Extract Volume	: (uL)	Soil Aliquot Volu	ime: (uL)
		CONCENTRATION UNITS:	
Number TICs found	l:0	(ug/L or ug/Kg) UG/L	
CAS NO.	COMPOUND NAME	RT E	ST. CONC. Q

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

Data File Name v05539.d Operator

Skelton

Date Acquired 22 Jan 1999 23:04

Sample Name Field ID

4187.02 Field Blank

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifiers
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	
	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	1		not detected	2	0.24 ug/L	<u> </u>
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	ĺ
75-09-2	Methylene Chloride			not detected	. 2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	1
	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		l .	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	1		not detected	100	0.56 ug/I	
75-25-2	Bromoform			not detected	4	0.70 ug/I	
79-34-5	1,1,2,2-Tetrachloroethane	1		not detected	2	0.47 ug/I	
541-73-1	1,3-Dichlorobenzene	1		not detected	600	0.55 ug/I	
106-46-7	1,4-Dichlorobenzene	1	T	not detected	75	0.57 ug/I	
	1-1						

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

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

1E VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

		TENTATI	VELY IDENTI	FIED COMPO	JNDS			
Lab Name:	FMETL			Project	980932		Field Blar	ık
NJDEP#	13461	Cas	e No.: 4187	Location	uST	SDG N	o.:	
Matrix: (soil/w	vater)	WATER		La	o Sample	ID: <u>4187</u>	.02	
Sample wt/vo	ol:	5.0	(g/ml) ML	La	b File ID:	V055	39.D	
Level: (low/n	ned)	LOW	_	Da	te Receive	ed: <u>01/1</u> 3	3/99	_
% Moisture: r	not dec.			Da	te Analyz	ed: <u>01/2</u> 2	2/99	
GC Column:	RTX-5	02 ID: 0.2	25 (mm)	Dil	ution Fact	or: <u>1.0</u>		_
Soil Extract V	olume:		_ (u L)	So	il Aliquot \	/olume:		_ (uL)
				CONCENTRA	TION UNI	TS:		
Number TICs	found:	0	_	(ug/L or ug/Kg)	UG/	<u> </u>		
CAS NO.		COMPOL	ND NAME		RT	EST. CO	ONC.	Q

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

Data File Name v05540.d Operator

Date Acquired

Skelton

22 Jan 1999 23:47

Sample Name

4187.03

Field ID

Sample Multiplier

Bldg550

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Oualifiers
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	
	Dichlorodifluoromethane	1		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	1		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	1
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene	T		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		1	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		1	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		1	not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane		1	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		T	not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene	1		not detected	100	0.56 ug/L	
75-25-2	Bromoform	1		not detected	4	0.70 ug/I	
79-34-5	1,1,2,2-Tetrachloroethane	1		not detected	2	0.47 ug/I	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/I	
106-46-7	1,4-Dichlorobenzene	1		not detected	75	0.57 ug/I	
95-50-1	1,2-Dichlorobenzene	+	 	not detected	600	0.64 ug/I	

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Lab Name:	FMETL			Project	980932		Bldg550	
NJDEP#	13461	Cas	se No.: 4187	Locatio	n UST	SD	G No.:	
Matrix: (soil/v	vater)	WATER	_	La	b Sample ID	D: 4	187.03	
Sample wt/vo	ol:	5.0	(g/ml) ML	La	b File ID:	<u>\</u>	/05540.D	
Level: (low/n	ned)	LOW	_	Da	ite Receive	d: <u>C</u>	1/13/99	
% Moisture: ı	not dec.			Da	ite Analyzed	d: <u>C</u>	1/22/99	
GC Column:	RTX-8	502 ID: <u>0.</u> 2	25_ (mm)	Di	ution Facto	r: <u>1</u>	1.0	
Soil Extract \	/olume:		_ (uL)	Sc	il Aliquot Vo	olum	ne:	(uL)

CONCENTRATION UNITS:

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

Number TICs found: 15

				
CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 005911-04-6	Nonane, 3-methyl-	29.47	7	JN
2.	unknown	30.42	10	J
3. 000103-65-1	Benzene, propyl-	32.08	12	JN
4. 017302-28-2	Nonane, 2,6-dimethyl-	32.29	13	JN
5. 000526-73-8	Benzene, 1,2,3-trimethyl-	33.47	39	JN
6.	unknown	33.71	8	J
7. 000141-93-5	Benzene, 1,3-diethyl-	35.04	19	JN
8.	unknown	35.28	10	J
9	unknown	35.42	12	J
10. 000496-11-7	Indane	35.53	22	JN
11. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	35.96	11	JN
12. 000527-84-4	Benzene, 1-methyl-2-(1-methylet	36.05	12	JN
13. 001758-88-9	Benzene, 2-ethyl-1,4-dimethyl-	36.25	17	JN
14. 001587-04-8	Benzene, 1-methyl-2-(2-propenyl)	36.61	11	JN
15. 000767-58-8	Indan, 1-methyl-	36.86	20	JN

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

Data File Name V05541.D Operator

Date Acquired

Skelton

23 Jan 1999 00:30

Sample Name

Field ID

4187.05 Field Dup

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifiers
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	
	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	пle	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	T
75-09-2	Methylene Chloride	1		not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene	T		not detected	100	0.16 ug/L	
75-35-3	1.1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	T
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	T
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	T
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	пle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene		1	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		1	not detected	nle	0.62 ug/I	
100-42-5	Styrene	1		not detected	100	0.56 ug/I	
75-25-2	Bromoform	T		not detected	4	0.70 ug/I	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/I	
541-73-1	1,3-Dichlorobenzene	1	 	not detected	600	0.55 ug/I	
106-46-7	1,4-Dichlorobenzene	1	 	not detected	75	0.57 ug/I	
95-50-1	1,2-Dichlorobenzene		+	not detected	+ '-	0.57 ug/I	

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD I	D
---------	---

Lab Name:	FMETL			_ Project	980932	Dupe	
NJDEP#	13461	Cas	e No.: 4187	Location	UST S	DG No.:	
Matrix: (soil/v	vater)	WATER	-	Lat	Sample ID:	4187.05	
Sample wt/vo	ol:	5.0	(g/ml) ML	Lat	File ID:	V05541.D	
Level: (low/n	ned)	LOW	-	Da	te Received:	01/13/99	_
% Moisture: ı	not dec.			Da	te Analyzed:	01/23/99	_
GC Column:	RTX-5	02 ID: <u>0.2</u>	25 (mm)	Dile	ution Factor:	1.0	
Soil Extract \	/olume:		_ (uL)	So	il Aliquot Volu	ıme:	(uL)

CONCENTRATION UNITS:

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

Number TICs found: 15

				
CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	29.46	8	J
2.	unknown	30.42	11	J
3. 000103-65-1	Benzene, propyl-	32.09	11	JN
4.	unknown	32.29	14	J
5. 000095-36-3	1,2,4-Trimethylbenzene	33.47	30	JN
6.	unknown	33.71	10	J
7. 017057-82-8	1H-Indene, 2,3-dihydro-1,2-dimet	34.23	12	JN
8. 000141-93-5	Benzene, 1,3-diethyl-	35.04	19	JN
9.	unknown	35.42	8	J
10. 000496-11-7	Indane	35.53	28	JN
11.	unknown	35.74	16	J
12. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	35.95	10	JN
13. 000934-74-7	Benzene, 1-ethyl-3,5-dimethyl-	36.05	9	JN
14. 000527-84-4	Benzene, 1-methyl-2-(1-methylet	36.26	14	JN
15. 000767-58-8	Indan, 1-methyl-	36.86	18	JN

BASE NEUTRAL

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name Operator

BN02687.D Bhaskar Sample Name Misc Info Sblk192

Date Acquired

26-Jan-99

Sample Multiplier

Sblk192 A 990114

					Regulatory Level			
CAS#	Name	R.T.	Response	Result	(ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00 us	v/L	<u> </u>
62-75-9	N-nitroso-dimethylamine			not detected	20	0,94 us		
62-53-3	Aniline			not detected	NLE	0.15 us		
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48 us		
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23 us		
100-51-6	Benzyl alcohol			not detected	NLE	0.18 us	$\overline{}$	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16 ug	_	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61 uş	g/L	
67-72-1	Hexachloroethane			not detected	10	0.33 ພ	g/L	
98-95-3	Nitrobenzene			not detected	10	0.46 պ	g/L	
78-59-1	Isophorone		-	not detected	100	0.35 us	g/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.46 us	g/L	
65-85-0	Benzoic Acid		-	not detected	NLE	0.26 ug	g/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25 us	g/L	
91-20-3	Naphthalene			not detected	NLE	0.25 u	g/L	
106-47-8	4-Chloroaniline			not detected	NLE	0.19 պ	g/L	
87-68-3	Hexachlorobutadiene			not detected	i	0.38 u	g/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.16 այ	g/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1,50 պ	g/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.32 นุ	g/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.21 u	g/L	
131-11-3	Dimethylphthalate			not detected	7000	0.18 պ	g/L	
208-96-8	Acenaphthylene	L	. 	not detected	NLE	0.19 ա	g/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.31 պ	g/L	
99-09-2	3-Nitroaniline	<u> </u>		not_detected	NLE	0.26 ա	g/L	
83-32-9	Асепарhthепе			not detected	400	0.26 պ	g/L	
132-64-9	Dibenzofuran	ļ		not detected	NLE	0.32 u	g/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0,36 ս	g/L	
84-66-2	Diethylphthalate			not detected	5000	0.82 u	g/L	
86-73-7	Fluorene			not detected	300	0.29 u	g/L	
7005-72-3	4-Chlorophenyl-phenylether	<u> </u>		not detected	NLE	0.31 u	g/L	
<u>100-01-6</u>	4-Nitroaniline	ļ		not detected	NLE	0.90 կ	g/L	<u> </u>
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.23 u	g/L	
103-33-3	Azobenzene			not detected	NLE	0.80 ս	e/L	<u> </u>
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.55 u	g/L	
118-74-1	Hexachlorobenzene			not detected	10	0.82 u		<u> </u>
85-01-8	Phenanthrene			not detected	NLE	0.18 u	g/L	
120-12-7	Anthracene			not detected	2000	0.19 u	g/L	
84-74-2	Di-n-butylphthalate			not detected	900	0,23 u	g/L	
206-44-0	Fluoranthene			not detected	300	0.41 u	g/L	
92-87-5	Benzidine			not detected	50	1.45 u	g/L	
129-00-0	Рутепе			not detected	200	0.32 ս	g/L	
85- <u>6</u> 8-7	Butylbenzylphthalate	<u> </u>		not detected	100	0.47 ս	g/L	
56-55-3	Benzo[a]anthracene	L		not detected	10	0,22 ս		
91-94-1	3,3'-Dichlorobenzidine	L		not detected	60	0.46 և	g/L	
218-01-9	Chrysene			not detected	20	0,20 u	g/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	0.51 u		<u> </u>
117-84-0	Di-n-octylphthalate	ļ		not detected	100	0.82 ս	g/L	<u> </u>
205-99-2	Benzo[b]fluoranthene	L		not detected	10	0.37 u	g/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.32 ս	g/L	
50-32-8	Benzo[a]pyrene			not detected	20	0,31 u	g/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.79 น	g/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.28 u	g/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.40 11	g/L	

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

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 CO	OMPOUNDS
---------------------------	----------

Lab Cod

	Sblk192
SDG	No:

Field ID:

Project: UST Case No.: 4187 Location: 550 Matrix: (soil/water) **WATER** Lab Sample ID: Sblk192 Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN02687.D LOW Date Received: 1/13/99 Level: (low/med) Date Extracted: 1/14/99 % Moisture: decanted: (Y/N) **Concentrated Extract Volume:** 1000 (uL) Date Analyzed: 1/26/99 Injection Volume: 1.0 Dilution Factor: 1.0 (uL)

GPC Cleanup: (Y/N) N pH:

Lab Name:

FMETL

CONCENTRATION UNITS:

13461

Number TICs found:	0	(ug/L or i	ug/Kg)	UG/L	
CAS NUMBER	COMPOUND NAME		RT	EST. CONC.	O

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name Operator BN02692.D Bhaskar Sample Name Misc Info 4187.02 Field Blank

Date Acquired

26-Jan-99

Sample Multiplier

1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Oualifiers
110-86-1	Pyridine			not_detected	NLE	5.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.94	ug/L	
62-53-3	Aniline	\perp		not detected	NLE	0.15	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48	ug/L	
106-46-7	1,4-Dichlorobenzene	\bot		not detected	75	0.23	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0,18	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.33	ug/L	ļ
98-95-3	Nitrobenzene			not detected	10	0.46	ug/L	
78 <u>-59-1</u>	Isophorone			not detected	100	0.35	ug/L	
111-91-1	bis(2-Chloroethoxy)methane	1_		not_detected	NLE	0.46	ug/L	<u> </u>
65-85-0	Benzoic Acid			not detected	NLE	0,26	ug/L	ļ
120-82-1	1,2,4-Trichlorobenzene	4		not detected	9	0.25	ug/L	<u> </u>
91-20-3	Naphthalene	1		not_detected	NLE	0.25	ug/L	ļ <u>.</u>
106-47-8	4-Chloroaniline	1		not detected	NLE		ug/L	
87-68-3	Hexachlorobutadiene			not_detected	1		ug/L	<u> </u>
91-57-6	2-Methylnaphthalene			not detected	NLE		ug/L	
17-47-4	Hexachlorocyclopentadiene	+		not detected	50		ug/L	
9 <u>1-58-7</u>	2-Chloronaphthalene			not detected	NLE		ug/L	
88-74-4	2-Nitroaniline			not detected	NLE		ug/L	<u> </u>
31-11-3	Dimethylphthalate			not detected	7000`		ug/L	
208-96-8	Acenaphthylene	_		not detected	NLB		ug/L	
506-20-2	2,6-Dinitrotoluene	+	<u> </u>	not detected	NLE		ug/L	 -
99-09-2	3-Nitroaniline	+		not detected	NLE	_	ug/L	
83-32-9	Acenaphthene	1		not_detected	400		ug/L	
132-64-9	Dibenzofuran	+		not detected	NLE		ug/L	 -
121-14-2	2,4-Dinitrotoluene	+		not detected	10		ug/L	┼
84-66-2	Diethylphthalate	- 		not_detected	5000		ug/L	
86-73-7	Fluorene			not detected	300		ug/L	
7005-72-3	4-Chlorophenyl-phenylether	+		not detected	NLE		ug/L	
100-01-6	4-Nitroaniline	+		not detected	NLE		ug/L	
36-30-6	n-Nitrosodiphenylamine	+		not detected	20 NLE		ug/L	
103-33-3	Azobenzene	+		not detected	NLE		ug/L	
101-55-3	4-Bromophenyl-phenylether	+		not detected	10		ug/L	
118-74-1 35-01-8	Hexachlorobenzene Phenanthrene			not detected	NLE		ug/L	
120-12-7	Anthracene			not detected	2000		ug/L	
1 <u>20-12-7</u> 14-74-2	Дінпасене Di-п-butylphthalate	+		not detected	900		ug/L	
206-44-0	Fluoranthene	1		not detected	300	0.41		
2-87-5	Benzidine			not detected	50		ug/L	
29-00-0				not detected	200		ug/L	
35-68-7	Pyrene Butylbenzylphthalate			not detected	100		ug/L	
56-55-3	Benzofalanthracene	1		not detected	10		ug/L	†
91-94-1	3,3'-Dichlorobenzidine	1		not detected	60		ug/L	<u> </u>
218-01-9				not detected	20		ug/L	— —
_	Chrysene	 		not detected	30		ug/L	
117-81-7	bis(2-Ethylhexyf)phthalate Di-n-octylphthalate	+		not detected	100		ug/L	
17-84-0		 		not detected	10		ug/L	
205-99-2	Benzo[b]fluoranthene	+		not detected	2		ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	20		ug/L	\vdash
03.30.5	Benzolalpyrene	+			20		7-	
93-39-5	Indeno[1,2,3-cd]pyrene	1		not detected			ug/L	
3-70-3	Dibenz[a,h]anthracene	-		not detected	20	0.28	ug/L	₩-

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

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

•	CENTILE	CINOA	1410071		יואט טוי	, 01 11	-
	TENTATI\	VELY IC	DENTIF	ED CC	MPOUN	NDS	

Field i	D:
---------	----

		16111/1	WEET IDENTI	ILD COMI C	01100		mi ata mi	
Lab Name:	FMETL			Lab Cod	13461		Field B	lank
Project:	UST	Ca	se No.: 4187	Locatio	n: <u>550</u>	s	DG No:	
Matrix: (soil/	water)	WATER	_	La	b Sampi	e ID:	4187.02	
Sample wt/ve	ol:	1000	(g/ml) ML	La	b File ID	:	BN02692.D	
Level: (low/r	med)	LOW		Da	ate Rece	ived:	1/13/99	
% Moisture:		dec	anted: (Y/N)	N Da	ate Extra	cted:	1/14/99	
Concentrate	d Extract	Volume:	1000 (uL)	Da	ate Analy	zed:	1/26/99	
Injection Vol	ume: 1.	0 (uL)		Di	lution Fa	ctor:	1.0	
GPC Cleanu	p: (Y/N)	<u>N</u>	pH:					
				CONCEN [*]	TRATIOI	N UNI	TS:	
Number TIC	s found:	0		(ug/L or u	g/Kg)	UG/	L	
CAS NUM	BER	COMPO	JND NAME		RT	ES	ST. CONC.	C

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

 Data File Name
 BN02693.D
 Sample Name
 4187.04

 Operator
 Biaskar
 Misc Info
 Bidg550

 Date Acquired
 26-Jan-99
 Sample Multiplier
 1

					Regulatory		
CAS#	Name	R.T.	Response	Result	Level (ug/L)*	MDL	o .re
110-86-1	Pyridine	7~" 1	Kespouse	not detected	NLE	5.00 u	Qualifiers
62-75-9	N-nitroso-dimethylamine	+		not detected	20	0.94 u	
62-53-3	Aniline	+		not detected	NLE	0.15 u	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48 u	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23 u	
100-51-6	Benzyl alcohol			not detected	NLE	0.18 u	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16 u	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61 u	
67-72-1	Hexachloroethane			not detected	10	0.33 u	
98-95-3	Nitrobenzene			not detected	10	0.46 u	
78-59-1	Isophorone			not detected	100	0.35 u	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.46 u	
65-85-0	Benzoic Acid			not detected	NLE	0.26 u	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25 u	
91-20-3	Naphthalene	10.36	2892681	42.80 ug/L	NLE	0.25 u	
106-47-8	4-Chloroaniline			not detected	NLE	0.19 ս	g/L
87-68-3	Hexachlorobutadiene			not detected	1	0.38 u	g/L
91-57-6	2-Methylnaphthalene	11.99	2940828	53.52 ug/L	NLE	0.16 u	g/L
77- <u>4</u> 7-4	Hexachlorocyclopentadiene			not detected	50	1.50 u	g/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.32 u	g/L
88-74-4	2-Nitroaniline			not detected	NLE	0.21 น	g/L
131-11-3	Dimethylphthalate			not detected	7000	0.18 u	g/L
208-96-8	Acenaphthylene			not detected	NLE	0.19 u	g/L
606-20-2	2,6-Dinitrotoluene	\perp		not detected	NLE	0,31 u	g/L
99-09-2	3-Nitroaniline			not detected	NLE	0.26 u	e/L
83-32-9	Acenaphthene	14.46	170776	5.26 ug/L	400	0.26 u	g/L
132-64-9	Dibenzofuran	14.84	146411	3.01 ug/L	NLE	0.32 น	g/L
121-14-2	2,4-Dinitrotoluene	4		not detected	10	0.36 u	g/L
84-66-2	Diethylphthalate	\bot		not detected	5000	0.82 u	g/L
86-73-7	Fluorene	15.63	245677	7.02 ug/L	300	0.29 u	g/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE		g/L
100-01-6	4-Nitroaniline	+		not detected	NLE	0.90 u	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.23 u	
103-33-3	Azobenzene	1 1		not detected	NLE	0.80 u	
101-55-3	4-Bromophenyl-phenylether	-		not detected	NLE	0.55 u	
118-74-1	<u>Hexachlorobenzene</u>			not detected	10	0.82 u	
85-01-8	Phenanthrene	17.82	435549	10.62 ug/L	NLE	0.18 u	
120-12-7	Anthracene			not detected	2000	0.19 u	
84-74-2	Di-n-butylphthalate			not detected	900	0.23 u	
206 <u>-44-0</u>	Fluoranthene			not detected	300		g/L
92- <u>87-5</u>	Benzidine			not detected	50	1.45 u	
129-00-0	Pyrene			not detected	200		g/L
85-68-7	Butylbenzylphthalate			not detected	100	0.47 u	
56-55-3	Benzofa anthracene			not detected	10	0.22 u	
9 <u>1-94-1</u>	3,3'-Dichlorobenzidine			not detected	60	0.46 u	
218-01-9	<u>Chrysene</u>	+		not detected	20	0.20 u	
117-81-7	bis(2-Ethylhexyl)phthalate	+		not detected	30	0.51 u	
117-84-0	Di-n-octylphthalate			not detected	100	0.82 u	
205-99-2	Benzo[b]fluoranthene	+		not_detected	10	0.37 u	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.32 u	
50-32-8	Benzo[a]pyrene			not detected	20	0.31 u	
193-39-5	Indeno[1,2,3-cd]pyrene	4		not detected	20	0.79 u	
53-70-3	Dibenz[a,h]anthracene	1		not detected	20	0.28 u	
191-24-2	Benzofg,h,i]perylene			not detected	NLE	0.40 u	ig/L

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

<u>Qualifiers</u>

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

TENTATI \	/FIY	IDENTIFIED	COMPOUNDS
1 12 1 1 1 1 1 1 1 1			

Field ID:

Lab Name:	FMETL				Lab Cod	13461	Bldg.550
Project:	UST	с	ase No.: 418	37	Location	n: <u>550</u> S	DG No:
Matrix: (soil/v	vater)	WATER			La	b Sample ID:	4187.04
Sample wt/vo	ol:	1000	(g/ml) ML	-	La	b File ID:	BN02693.D
Level: (low/n	ned)	LOW			Da	te Received:	1/13/99
% Moisture:		de	canted: (Y/N)	N	Da	ite Extracted:	1/14/99
Concentrated	Extract	Volume:	1000 (uL)	Da	ite Analyzed:	1/26/99
Injection Volu	ıme: <u>1.0</u>) (uL)			Dil	ution Factor:	1.0
GPC Cleanu	p: (Y/N)	N	pH:				

CONCENTRATION UNITS:

(ug/c of ug/kg) OG/c	Number TICs found:	25	(ug/L or ug/Kg)	UG/L
----------------------	--------------------	----	-----------------	------

	· · · · · · · · · · · · · · · · · · ·			
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000108-67-8	Benzene, 1,3,5-trimethyl-	7.21	41	JN
2. 000496-11-7	Indane	7.94	30	JN
3. 000527-84-4	Benzene, 1-methyl-2-(1-methylet	8.68	30	JN
4. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	9.14	13	JN
5. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	9.29	15	JN
6. 000488-23-3	Benzene, 1,2,3,4-tetramethyl-	9.36	14	JN
7. 002039-89-6	Benzene, 2-ethenyl-1,4-dimethyl-	9.65	19	JN
8. 027133-93-3	2,3-Dihydro-1-methylindene	9.83	23	JN
9. 000119-64-2	Naphthalene, 1,2,3,4-tetrahydro-	10.01	24	JN
10.	unknown	10.56	17	J
11. 017301-23-4	Undecane, 2,6-dimethyl-	10.75	14	JN
12. 002809-64-5	Naphthalene, 1,2,3,4-tetrahydro-5	11.55	23	JN
13. 000091-57-6	Naphthalene, 2-methyl-	12.22	42	JN
14.	unknown	12.56	14	J
15. 000092-52-4	Biphenyl	13.11	16	JN
16. 000939-27-5	Naphthalene, 2-ethyl-	13.29	23	JN
17. 000575-43-9	Naphthalene, 1,6-dimethyl-	13.45	35	JN
18. 000581-40-8	Naphthalene, 2,3-dimethyl-	13.64	46	JN
19. 000571-61-9	Naphthalene, 1,5-dimethyl-	13.69	27	JN
20. 000571-58-4	Naphthalene, 1,4-dimethyl-	13.89	19	JN
21. 000575-37-1	Naphthalene, 1,7-dimethyl-	14.08	24	JN
22. 002131-42-2	Naphthalene, 1,4,6-trimethyl-	15.00	16	JN
23.	unknown	16.26	26	J
24. 074645-98-0	Dodecane, 2,7,10-trimethyl-	16.90	36	JN
25. 054833-48-6	Heptadecane, 2,6,10,15-tetramet	17.99	21	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

 Data File Name
 BN02694.D
 Sample Name
 4187.05

 Operator
 Bhaskar
 Misc Info
 Dupe

 Date Acquired
 26-Jan-99
 Sample Multiplier
 1

					Regulatory Level		
CAS#	Name	R.T.	Response	Result	(ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.94 ug/L	
62-53-3	Aniline			not detected	NLE	0.15 ug/L	
111-44-4	bis(2-Chloroethyl)ether	-		not detected	10	0.48 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23 ug/L	
100-51-6	Benzyl alcohol	+		not detected	NLE	0.18 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16 ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61 ug/L	
67-72-1	Hexachloroethane			not detected	10	0.33 ug/L	
98-95-3	Nitrobenzene	+		not detected	10	0.46 ug/L	
78-59-1	Isophorone	+	<u> </u>	not detected	100	0.35 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.46 ug/L	
65-85-0	Benzoic Acid			not_detected	NLE	0.26 ug/L	
120-82-1	1,2,4-Trichlorobenzene	-		not detected	9	0.25 ug/L	
91-20-3	Naphthalene	10,36	2522449	37.53 ug/L	NLE_	0.25 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	0.19 սգ/Լ	
87-68-3	Hexachlorobutadiene			not detected	1	0.38 ug/L	
91-57-6	2-Methylnaphthalene	11.98	2658081	48.65 ug/L	NLE	0.16 պա/L	<u> </u>
77-47-4	Hexachlorocyclopentadiene	4		not detected	50	1.50 ug/L	
91-58-7	2-Chloronaphthalene	44		not detected	NLE	0.32 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.21 ug/L	
131-11-3	Dimethylphthalate	4		not detected	7000	0.18 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.19 ug/L	
606-20-2	2,6-Dinitrotoluene	\perp		not_detected	NLE	0.31 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.26 ug/L	
83-32-9	Acenaphthene	14,45	135860	4.24 ug/L	400	0.26 ug/L	
132-64-9	Dibenzofuran	14.83	122785	2.56 ug/L	NLE	0.32 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0,36 ug/L	
84-66-2	Diethylphthalate	J		not detected	5000	0.82 ug/L	
86-73-7	Fluorene	15.63	190556	5.52 ug/L	300	0.29 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.31 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.90 นย/โ	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.23 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.80 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.55 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.82 ug/L	
85-01-8	Phenanthrene	17.82	318663	7.74 ug/L	NLE	0.18 ug/L	
120-12-7	Anthracene			not detected	2000	0.19 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.23 ug/L	
206-44-0	Fluoranthene			not detected	300	0.41 ug/L	
92-87-5	Benzidine			not detected	50	1.45 ug/L	
129-00-0	Pyrene			not detected	200	0.32 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.47 ug/L	
56-55-3	Benzofa]anthracene			not detected	10	0.22 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.46 ug/L	
218-01-9	Chrysene			not detected	20	0.20 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	1-1		not detected	30	0.51 ug/L	
117-84-0	Di-n-octylphthalate	1-1		not detected	100	0.82 ug/L	
		 		not detected	10	0.82 ug/L	
205-99-2	Benzo[b]fluoranthene	- 		not detected	2	0.37 ug/L	
207-08-9	Benzo[k]fluoranthene	 					
50-32-8	Benzo[a]pyrene	+		not detected	20	0.31 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene	- 		not detected	20	0.79 ug/L	
53-70-3	Dibenz[a,h]anthracene	╁╾╌┨		not detected	20	0.28 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.40 ug/L	<u> L</u>

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

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank

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

ORGANICS ANALYSIS DATA SHEET	Field ID:
VELV IDENTIFIED COMPOUNDS	

	_				_	_	•
		-	_	_			

Lab Name:	FMETL			_ Lab Cod	13461	Dabe
Project:	UST	C	ase No.: 4187	Locatio	n: <u>550</u> S	DG No:
Matrix: (soil/	water)	WATER		La	b Sample ID:	4187.05
Sample wt/v	ol:	1000	(g/ml) ML	La	b File ID:	BN02694.D
Level: (low/r	med)	LOW		Da	te Received:	1/13/99
% Moisture:	· · · · · · · · · · · · · · · · · · ·	de	canted: (Y/N)	N Da	ite Extracted:	1/14/99
Concentrate	d Extract	Volume:	1000 (uL)	Da	te Analyzed:	1/26/99
njection Vol	ume: <u>1</u> .	0 (uL)		Dil	ution Factor:	1.0
GPC Cleanu	p: (Y/N)	N	pH:			

CONCENTRATION UNITS:

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

			T	· · · · · ·
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000108-67-8	Benzene, 1,3,5-trimethyl-	7.21	35	JN
2. 000496-11-7	Indane	7.94	25	JN
3. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	8.67	27	JN
4. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	9.13	11	JN
5. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	9.29	14	JN
6. 000527-53-7	Benzene, 1,2,3,5-tetramethyl-	9.36	14	JN
7.	unknown	9.65	18	J
8. 000767-58-8	Indan, 1-methyl-	9.83	23	JN
9. 000119-64-2	Naphthalene, 1,2,3,4-tetrahydro-	10.01	23	JN
10.	unknown	10.56	15	J
11.	unknown	11.11	11	J
12. 002809-64-5	Naphthalene, 1,2,3,4-tetrahydro-5	11.54	22	JN
13. 000090-12-0	Naphthalene, 1-methyl-	12.21	44	JN
14. 013065-07-1	Naphthalene, 1,2,3,4-tetrahydro-2	12.28	11	JN
15. 000092-52-4	Biphenyl	13.11	12	JN
16. 000939-27-5	Naphthalene, 2-ethyl-	13.29	20	JN
17. 000571-61-9	Naphthalene, 1,5-dimethyl-	13.44	30	JN
18. 000569-41-5	Naphthalene, 1,8-dimethyl-	13.64	37	JN
19. 000582-16-1	Naphthalene, 2,7-dimethyl-	13.68	22	JN
20. 000573-98-8	Naphthalene, 1,2-dimethyl-	13.88	16	JN
21. 000571-58-4	Naphthalene, 1,4-dimethyl-	14.07	17	JN
22. 002245-38-7	Naphthalene, 1,6,7-trimethyl-	14.99	11	JN
23.	unknown	16.25	14	J
24. 054105-67-8	Heptadecane, 2,6-dimethyl-	16.89	19	JN
25. 000630-02-4	Octacosane	17.97	11	JN

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	
	oratory Manager or Environmental Consultant's Signature	

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

Laboratory Certification #13461

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.

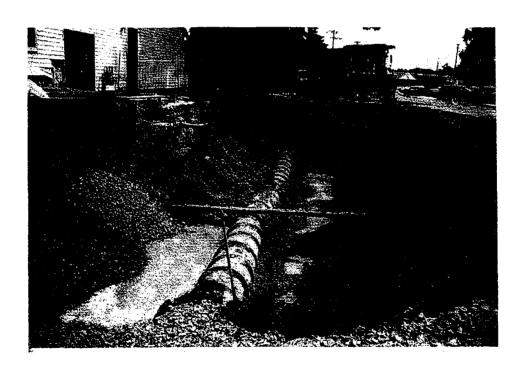
2-15-49

Daniel K. Wright Laboratory Manager APPENDIX C PHOTOGRAPHS

_ 1

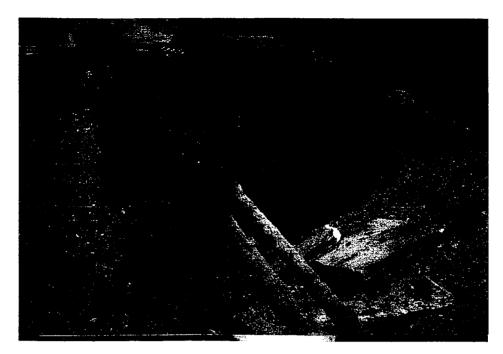


REMEDIATION ALONG 24" STORM WATER PIPE



REMEDIATED AREA AROUND STORM WATER PIPE BENEATH MALTERER AVENUE





REMEDIATION BENEATH ABANDONED GAS LINES IN FRONT OF BUILDING 550



REMEDIATION BENEATH SALTZMAN AVENUE



GPS SAMPLE LOCATION MAP(BLDG.550)

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

(IN US SURVEY FEET)

SAMPLE POINT

POSITION/DESC.	Y COORD.(NORTHING)	X COORD.(EASTING)
16-Jun		
B1	539449.488	619787.052
B2	539446.760	619775.664
B3	539446.760	619775.664
S1	539438.408	619770.692
19-Jun		
S2	539465.220	619786.088
S3	539469.556	619799.404
S4	539466.984	619806.620
S5	539458.636	619802.288
S6	539458.636	619802.288
24-Jun		
S 7	539453.096	619800.204
S8	539455.664	619807.744
S9	539467.532	619811.112
B4	539463.844	619800.844
B5	539471.544	619805.016
S10	539476.996	619807.904
\$11	539479.576	619762.832
B6	539469.620	619786.248
B7	539469.620	619786.248
S12	539460.788	619769.244
26-Jun		
S13	539423.628	619796.196
S14	539408.328	619782.560
S15	539443.868	619792.824
В8	539435.360	619792.024

GPS SAMPLE LOCATION MAP(BLDG.550)

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

(IN US SURVEY FEET)

SAMPLE POINT

POSITION/DESC.	Y COORD.(NORTHING)	X COORD.(EASTING)
1-Jul		
S16	539421.988	619799.996
S10 S17	539421.966	619806.520
B9	539411.516	619798.624
S18	539385.592	619801.540
15-Jul		
P1	539389.712	619798.452
P2	539413.248	619790.384
P3	539436.964	619782.484
P4	539460.456	619773.388
P5	539460.456	619773.388
28-Jul		
B10	539481.804	619801.028
B11	539491.084	619787.808
B12	539491.084	619787.808
B13	539482.320	619781.800
B14	539491.256	619770.812
S19	539490.912	619802.916
S20	539502.600	619792.444
S21	539503.800	619776.476
S22	539499.848	619765.148
S23	539485.412	619754.332
S24	539461.868	619762.572

BLDG. 550 UST GROUND WATER SAMPLE GPS POSITION & COORIDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
550 GW (GW denotes <u>G</u> round <u>W</u> ater)	539445.384	619792.374

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)	
550 BLDG CRNR	539386.472	619812.239	
550 BLDG CRNR	539448.701	619798.719	