United States Army
Fort Monmouth, New Jersey

Site/Remedial Investigation Report

Building 290
Main Post-West Area

July 1999

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 290

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

290.DOC

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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 in an area that was discovered during construction activities at Building 290. The area may have been related to a gasoline dispensing island. Building 290 is located 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 by past operations. 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, 7 post-excavation soil samples were collected from within the excavation between March 28 and April 1, 1997. All samples were analyzed for TPHC, volatile organic compounds, lead and total solids. The post-excavation soil samples collected from the excavation contained concentrations of TPHC, lead and volatile organic compounds below the NJDEP soil cleanup criteria.

Management of Excavated Soils

A total of approximately 40 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

The results of the analysis of the post-remediation soil samples reveal that there are no target compounds present above applicable NJDEP cleanup standards within the excavation associated with Building 290. Therefore, SMC does not recommend any further site investigation or remediation.

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 in an area that was discovered during construction activities at Building 290. The area may have been related to a gasoline dispensing island. Building 290 is located at the Main Post-West area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to the 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 past operations.

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 290 is located in the Main Post-West area of the Fort Monmouth Army Base. The excavation was located a few feet west of the southwest corner of Building 290. 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 290. 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 290 is located approximately 300 feet south of Parkers Creek, the nearest water body. Based on Main Post topography, groundwater flow in the area of Building 290 is anticipated to be to the north.

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

2.3 MANAGEMENT OF EXCAVATED SOILS

A total of approximately 40 cubic yards of contaminated soil (soil displaying PID readings above 5 ppm) was 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 in all directions until non-detectable field screening readings (i.e., less than 5 ppm) were obtained with the PID. The excavation extended vertically to a depth of 4 feet below ground surface (bgs). Groundwater was encountered at a depth of 3-½ feet bgs.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 7 post-excavation soil samples were collected from within the excavation between March 28 and April 1, 1997. Of these, 3 soil samples were collected from the excavation sidewalls at a depth of 3 feet bgs. The sidewall samples were designated 290-N, 290-S and 290-P1. The remaining 4 post-excavation soil samples were collected from the bottom of the excavation at a depth of 4 feet bgs. The bottom samples were designated 290-B, 290-P2, 290-P3 and 290-P4. Sample 290-P5 was a duplicate. The locations of the 7 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 analyzed for total petroleum hydrocarbons (TPHC), volatile organic compounds, lead and total solids. The TPHC post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994).

A summary of the TPHC analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2. A summary of the results of the volatile organic compounds and lead 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 greater than 1,000 mg/kg in two of the samples (290-P1 and 290-P2). All of the samples revealed levels below the NJDEP soil cleanup criteria for volatile organic compounds and lead.

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 B provides photographs of the site/remedial investigations.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

SMC was retained by the U.S. Army DPW to implement a site/remedial investigation in an area that was discovered during construction activities at Building 290. The area may have been related to a gasoline dispensing island. Building 290 is located 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 past operations.

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 40 cubic yards of contaminated soil was excavated from the 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, 7 post-excavation soil samples were collected from within the excavation between March 28 and April 1, 1997. All samples were analyzed for TPHC, volatile organic compounds, lead and total solids. The post-excavation soil samples collected from the excavation contained concentrations of TPHC, volatile organic compounds and lead 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 RECOMMENDATIONS

The results of the analysis of the post-remediation soil samples reveal that there are no target compounds present above applicable NJDEP cleanup standards within the excavation associated with Building 290. Therefore, SMC does not recommend any further site investigation or remediation.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 290, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
290-P1	3/28/97	3/31/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-N	3/28/97	3/31/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-B	3/28/97	3/31/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-S	3/28/97	3/31/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 290, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
290-P2	4/1/97	4/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-P3	4/1/97	4/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-P4	4/1/97	4/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
290-P5	4/1/97	4/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 290, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria.
290-P1=	2416.01	3/28/97	3/31/97	Total Solid	--	--	75.64	--	--
				TPHC	207	Yes	3816.37	10,000	No
290-N=	2416.02	3/28/97	3/31/97	Total Solid	--	--	76.62	--	--
				TPHC	200	Yes	ND	10,000	No
290-B=	2416.03	3/28/97	3/31/97	Total Solid	--	--	78.53	--	--
				TPHC	198	Yes	242.92	10,000	No
290-S=	2416.04	3/28/97	3/31/97	Total Solid	--	--	75.32	--	--
				TPHC	207	Yes	322.23	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
POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 290, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
290-P2=	2420.01	4/1/97	4/2/97	Total Solid	--	--	80.63	--	--
				TPHC	182	Yes	6092.65	10,000	No
290-P3=	2420.02	4/1/97	4/2/97	Total Solid	--	--	66.91	--	--
				TPHC	237	Yes	293.57	10,000	No
290-P4=	2420.03	4/1/97	4/2/97	Total Solid	--	--	81.33	--	--
				TPHC	190	Yes	501.69	10,000	No
290-P5=	2420.04	4/1/97	4/2/97	Total Solid	--	--	78.98	--	--
				TPHC	188	Yes	952.13	10,000	No

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2416 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

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

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2416 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

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

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2416 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

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

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2420 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

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

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2420 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
75-55-6	1,1,1-Trichloroethane	1	U	NA	NA
56-23-5	Carbon Tetrachloride	2	U	2000(k)	4000(k)
71-43-2	Benzeze	1	U	3000	13000
107-06-2	1,2-Dichloroethane	2	U	6000	24000
79-01-6	Trichloroethene	1	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	1	U	10000	43000
75-27-4	Bromodichloromethane	1	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	2	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	1	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	2	U	1000000(d)	1000000(d)
108-88-3	Toluene	22		1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	2	U	NA	NA
79-00-5	1,1,2-Trichloroethane	34		22000	420000
127-18-4	Tetrachloroethene	1	U	4000(k)	6000(k)
591-78-6	2-Hexanone	2	U	NA	NA
126-48-1	Dibromochloromethane	2	U	NA	NA
108-90-7	Chlorobenzene	1	U	37000	680000
100-41-4	Ethylbenzene	220	E	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	590	E	NA	NA

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: 2420 Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

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

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
1330-20-7	o-Xylene	380	E	NA	NA
100-42-5	Styrene	2	U	23000	97000
75-25-2	Bromoform	2	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	2	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	4	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	4	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	4	U	5100000	10000000(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.

(H) 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.

(O) 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
TOTAL LEAD

Lab Name: FMETL NJDEP # 13461 Project: 2429

Case No.: _____ Location: AREA 290 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01-.04 And 2420.01-.04

CONCENTRATION UNITS:
(mg/kg)

LABORATORY I.D. #	SAMPLE LOCATION	RESULT (mg/kg)	MDL (mg/kg)	RESIDENTIAL	NON-RESIDENTIAL
2416.01	290-P1	3.05	2.03	400 (p)	600 (q)
2416.02	290-N	ND	1.50	400 (p)	600 (q)
2416.03	290-B	292.17	1.19	400 (p)	600 (q)
2416.04	290-S	23.01	1.77	400 (p)	600 (q)
2420.01	290-P2	93.89	2.32	400 (p)	600 (q)
2420.02	290-P3	23.60	2.62	400 (p)	600 (q)
2420.03	290-P4	24.13	2.30	400 (p)	600 (q)
2420.04	290-P5	33.91	2.26	400 (p)	600 (q)

FIGURES

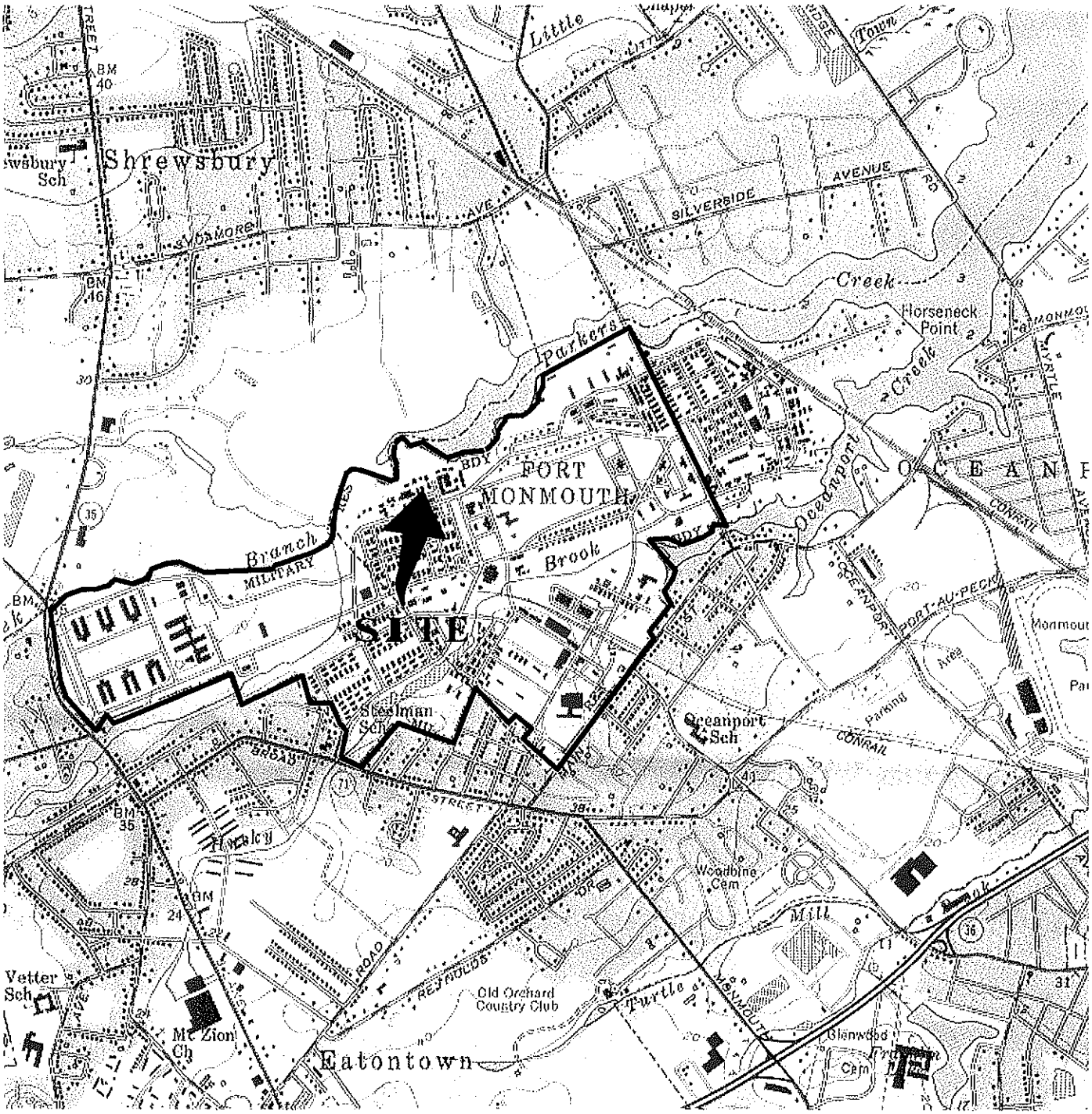


FIGURE 1

SITE LOCATION MAP
Building 290
Main Post-West
Fort Monmouth Army Base
Monmouth County, NJ

SMC Environmental
Services Group
Engineers, Managers, Scientists & Planners
Valley Forge, PA.

SCALE: 1"= 2000'

DATE: MARCH 1997

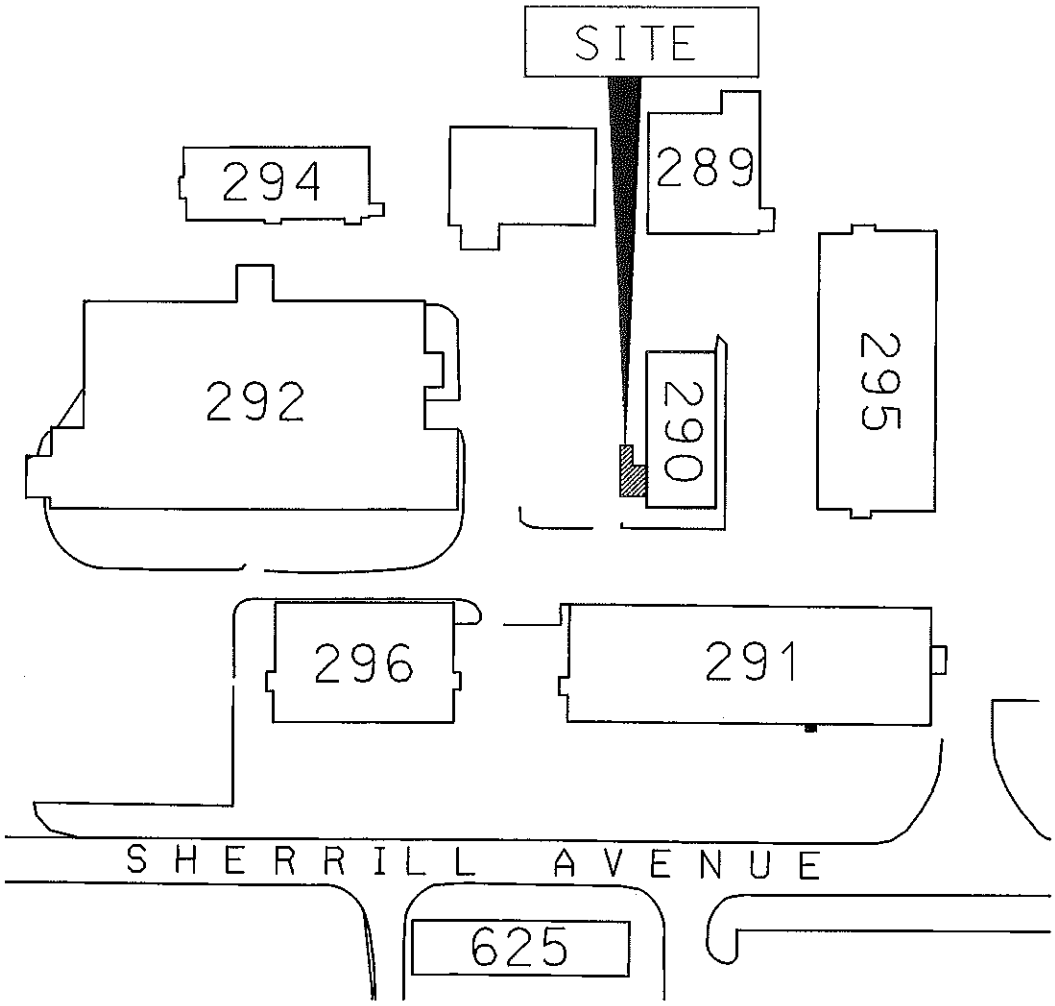


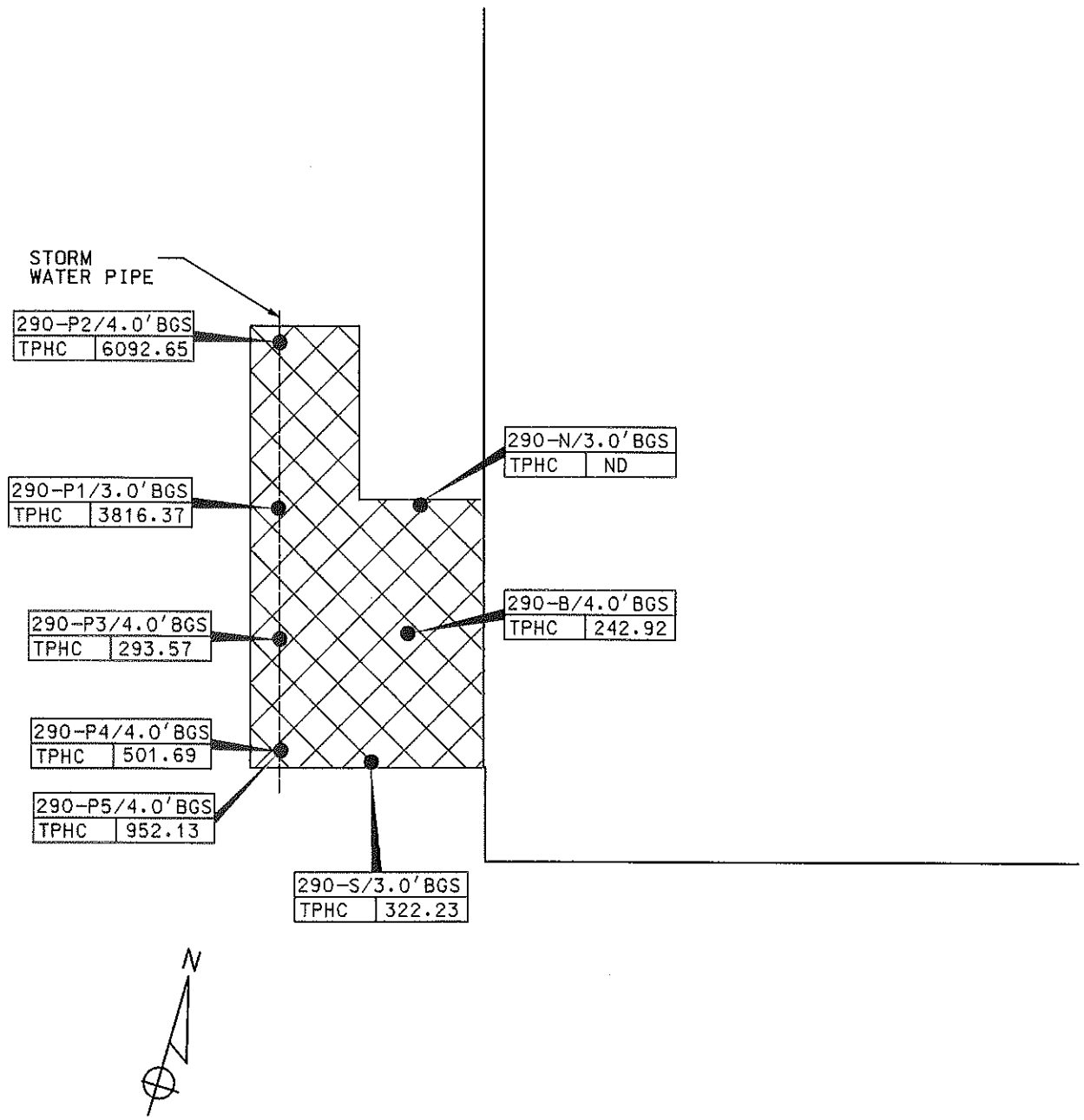
FIGURE 2
SITE MAP
BUILDING 290
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL
SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=100'

DATE: MARCH 1997

290 2429 FIG2



LEGEND

- SOIL SAMPLE LOCATION (MARCH 28, 1997)
- SOIL SAMPLE LOCATION (APRIL 1, 1997)
- LIMIT OF EXCAVATION (APRIL 1, 1997)

NOTES:

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

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 290
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=10' | DATE: MARCH 1997

290 2429 FIG3

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
2429
AREA-290

Project # 2416
Date Rec. 03/28/97
Date Comp. 03/31/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

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

Additional Comments: _____

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Page 1 of 1

Customer: SMC
( )DERA (X)OMA ( )Other:_____

Project No: 2429

Location: Area 290

Sampler's Signature: David H. Dames

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	TPH	Vo+15	Lead	%Solids	Remarks / Preservation Method
2416.01	290-P1	3.28.97	10:35	Soil	X	X	X	X	← Very high OVA reading (Strong Gas Odors)
.02	290-N	↓	10:40	↓	↓	↓	↓	↓	Remaing three (3) samples had no OVA readings
.03	290-B	↓	10:45	↓	↓	↓	↓	↓	
.04	290-S	↓	10:50	↓	↓	↓	↓	↓	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Dames	3.28.97 13:10	Sarah J. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

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

Client :	U.S. Army	**Lab. ID # :**	2416
	DPW. SELFM-PW-EV	**Date Rec'd:**	28-Mar-97
	Bldg. 173	**Analysis Start:**	31-Mar-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	31-Mar-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	Area 290

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2416.01	290-P1	1.00	15.04	75.64	207	3816.37
2416.02	290-N	1.00	15.30	76.62	200	0.00
2416.03	290-B	1.00	15.10	78.53	198	242.92
2416.04	290-S	1.00	15.06	75.32	207	322.23
METHOD BLANK		1.00	15.00	100.00	157	0.00

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature _____

Date 1/22/98

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
Area 290
2429

Project # 2416
Date Rec. 03/28/97
Date Compl. 04/02/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

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. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks) — Y

2. Retention times for chromatograms provided — Y

3. GC/MS Tune Specifications

   a. BFB Meet Criteria — Y
   b. DFTPP Meet Criteria — ____

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

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 — Y

6. GC/MS Calibration Requirements

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

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 — Y

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

   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction _____

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

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

   a. VOA Fraction Toluene RPD= 16%
   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 Y
(If not met, list those compounds which fall outside the acceptable range)
    a. VOA Fraction _____
    b. B/N Fraction _____
    c. Acid Fraction _____

11. Extraction Holding Time Met —

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

12. Analysis Holding Time Met Y

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

Additional Comments:
_____
_____
_____

Laboratory Manager : _____ Date: 2-11-96

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

Page 1 of 1

Customer: SMC
( )DERA (X)OMA ( )Other:

Project No: 2429

Location: Area 290

Sampler's Signature: David H. Dawes

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	TPH-418.1	VOA+15	Lead	% Solids	Comments: Remarks / Preservation Method
2416.01	290-P1	3-28-97	10:35	Soil	X	X	X	X	← Very high OVA reading (strong Gas odors)
.02	290-N	↓	10:40	↓	↓	↓	↓	↓	Remaing three (3) samples had no OVA readings
.03	290-B	↓	10:45	↓	↓	↓	↓	↓	
.04	290-S	↓	10:50	↓	↓	↓	↓	↓	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Dawes	3-28-97 13:10	Sarah J. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. **Daily Blank**

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	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	1	U
108-05-4	Vinyl Acetate	3	U
78-93-3	2-Butanone	3	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
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	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	m+p-Xylenes	3	U
1330-20-7	o-Xylene	2	U
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P1

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00413.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.36 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	4	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	3	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	U
156-60-5	trans-1,2-Dichloroethene	3	U
75-35-3	1,1-Dichloroethane	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	3	U
71-43-2	Benzene	1	U
107-06-2	1,2-Dichloroethane	3	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
110-75-8	2-Chloroethyl vinyl ether	3	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	3	U
126-48-1	Dibromochloromethane	3	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	3	U
1330-20-7	m+p-Xylenes	4	U
1330-20-7	o-Xylene	3	U
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
79-34-5	1,1,2,2-Tetrachloroethane	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P1

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00413.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.36 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-N

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00414.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 23.38 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	4	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	3	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	4	
156-60-5	trans-1,2-Dichloroethene	3	U
75-35-3	1,1-Dichloroethane	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	3	U
71-43-2	Benzene	1	U
107-06-2	1,2-Dichloroethane	3	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
110-75-8	2-Chloroethyl vinyl ether	3	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	3	U
126-48-1	Dibromochloromethane	3	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	3	U
1330-20-7	m+p-Xylenes	4	U
1330-20-7	o-Xylene	3	U
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
79-34-5	1,1,2,2-Tetrachloroethane	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-N

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00414.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 23.38 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	2	J
95-50-1	1,2-Dichlorobenzene	4	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-B

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00415.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 21.47 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	4	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	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
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	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	m+p-Xylenes	4	U
1330-20-7	o-Xylene	2	U
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-B

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00415.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 21.47 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-S

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00416.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.28 Date Analyzed: 04/02/97

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

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	4	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	3	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	3	U
75-35-3	1,1-Dichloroethane	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	3	U
71-43-2	Benzene	1	U
107-06-2	1,2-Dichloroethane	3	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
110-75-8	2-Chloroethyl vinyl ether	3	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-Pentanone	3	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	3	U
126-48-1	Dibromochloromethane	3	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	3	U
1330-20-7	m+p-Xylenes	4	U
1330-20-7	o-Xylene	3	U
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
79-34-5	1,1,2,2-Tetrachloroethane	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-S

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00416.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.28 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-P1

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00413.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.36 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 15

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	21.95	560	J
2. 016883-48-0	Cyclopentane, 1,2,4-trimethyl-, (1.	22.71	710	JN
3. 015890-40-1	Cyclopentane, 1,2,3-trimethyl-, (1.	23.14	620	JN
4. 020309-77-7	Cyclopentane, 1,1,3,4-tetramethyl	24.11	1000	JN
5. 000638-04-0	Cyclohexane, 1,3-dimethyl-, cis-	24.80	1200	JN
6. 002532-67-4	1.alpha.,2.beta.,3.alpha.,4.beta.-T	25.30	2000	JN
7. 006876-23-9	Cyclohexane, 1,2-dimethyl-, trans	25.81	430	JN
8. 003073-66-3	Cyclohexane, 1,1,3-trimethyl-	27.28	820	JN
9.	unknown hydrocarbon	27.47	400	J
10. 001795-26-2	Cyclohexane, 1,3,5-trimethyl-, (1.	27.82	600	JN
11. 001678-81-5	Cyclohexane, 1,2,3-trimethyl-, (1.	28.91	440	JN
12. 019489-10-2	cis-1-Ethyl-3-methyl-cyclohexane	30.15	580	JN
13.	unknown	30.89	410	J
14.	unknown	32.45	520	J
15. 000493-02-7	Naphthalene, decahydro-, trans-	35.91	450	JN

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-N

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00414.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 23.38 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 3

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown	32.91	8	J
2.	unknown	33.72	11	J
3.	unknown	34.91	11	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-B

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.03

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00415.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 21.47 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-S

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2416 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2416.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00416.D

Level: (low/med) LOW Date Received: 03/28/97

% Moisture: not dec. 24.28 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

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	Y
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	Y
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	Y
4.	Document bound, paginated and legible	Y
5.	Chain of Custody submitted	Y
6.	Samples submitted to lab within 48 hours of sample collection	Y
7.	Methodology Summary submitted	Y
8.	Results submitted on a dry weight basis	Y
9.	Method Detection Limits	Y
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	Y

Laboratory Manager or Environmental Consultant's Signature _____

Date 2/11/16

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 Lead
2429
Area 290

Project # 2416
Date Rec. 03/28/97
Date Compl. 04/02/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Methodology Summary

EPA SW-846 Method 3151 Volume One, Third Edition: Digestion Pb

Milestone MLS 1200 MEGA
A representative sample of 1.0 to 0.5 g is digested in 10 ml of concentrated nitric acid for 10 min. using microwave heating with a suitable laboratory microwave unit. The sample and acid are placed in a fluorocarbon (TFM) microvessel. This vessel is capped and heated in the microwave unit. After cooling the vessel contents are filtered and then diluted to 100ml volume and analyzed by ICP.

EPA SW-846 Method 7421 Volume One, Third Edition: GFAA Pb

Varian SpectrAA-640Z Graphite Furnace Atomic Absorption Spectrometer
A representative aliquot of sample is placed in the graphite tube in the furnace, evaporated to dryness, charred, and atomized. The absorption of hollow cathode or EDL radiation during atomization will be proportional to the lead concentration.

METAL ANALYSIS CONFORMANCE / NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Calibration Summary Meet Criteria	___	✓
2.	ICP Interference Check Sample Results Summary Submitted (if applicable) / Meet Criteria	NA	___
3.	Serial Dilution Summary Submitted (if applicable) / Meet Criteria	NA	___
4.	Laboratory Control Sample Summary Submitted (if applicable) / Meet Criteria	___	✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:	✓	___
6.	Matrix Spike / Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and thier recoveries which fall outside of the acceptable range)	___	✓
7.	Extracion Holding Time Met	___	✓
	If not met, list number of days exceeded for each sample:		
8.	Analysis Holding Time Met	___	✓
	If not met, list number of days exceeded for each sample:		

Additional Comments: _____

Laboratory Manager: _____ Date: 3-6-96

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

Page 1 of 1

Customer: SMC
( )DERA (X)OMA ( )Other:

Project No: 2429

Location: Area 290

Sampler's Signature: David H. Dames

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	TPHs	Vo+1S	Lead	% Solids	Remarks / Preservation Method
2416.01	290-P1	3-28-97	10:35	Soil	X	X	X	X	← Very high OVA reading (Strong Gas odors)
.02	290-N		10:40						
.03	290-B		10:45						Remaing three (3) samples had no OVA readings
.04	290-S		10:50						

Analysis Parameters

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Dames	3-28-97 13:10	Sarah J. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

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

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

Lab ID #: 2416.01-.04
Sample Received: 3/28/97
Analysis Start: 3/31/97
Analysis Completed: 4/02/97

Site: Ft. Monmouth
Area 290

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
Method of Digestion: SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)
2416.01	290-P1	3.05	2.03
2416.02	290-N	ND	1.50
2416.03	290-B	292.17	1.19
2416.04	290-S	23.01	1.77

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature _____

Date 3/6/96

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
2429
290

Project # 2420
Date Rec. 04/01/97
Date Comp. 04/02/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

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

Additional Comments:_____

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC
( )DERA (X)OMA ( )Other:

Project No: 2429

Location: 290

Sampler's Signature: David H. Dames

Lab Sample I.D.	Sample Location	~~Time~~ Date	~~Date~~ Time	Sample Type	TPH	Pb	% Solid	Volatiles			Comments: Remarks / Preservation Method
2420.01	290 - P2	14:45	4.1.97	Soil	X	X	X	X			20-30
.02	290 - P3	14:50	↓	↓	↓	↓	↓	↓			None
.03	290 - P4	14:55	↓	↓	↓	↓	↓	↓			None
.04	290 - P5	15:00	↓	↓	↓	↓	↓	↓			None

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Dames	4.1.97 16:00	Sarah J. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

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

Client :	U.S. Army	**Lab. ID # :**	2420
	DPW. SELFM-PW-EV	**Date Rec'd:**	1-Apr-97
	Bldg. 173	**Analysis Start:**	2-Apr-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	2-Apr-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	290

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2420.01	290-P2	1.00	16.00	80.63	182	**6092.65**
2420.02	290-P3	1.00	14.85	66.91	237	**293.57**
2420.03	290-P4	1.00	15.21	81.33	190	**501.69**
2420.04	290-P5	1.00	15.82	78.98	188	**952.13**
METHOD BLANK	4/2/97	1.00	15.00	100.00	157	**0.00**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature _____

Date 1/21/98

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
Area 290
2429

Project # 2420
Date Rec. 04/01/97
Date Compl. 04/07/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

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. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks) — Y

2. Retention times for chromatograms provided — Y

3. GC/MS Tune Specifications

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

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

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 — Y

6. GC/MS Calibration Requirements

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

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 — N

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

   a. VOA Fraction Tol - 75, 45 BFB - 144
   b. B/N Fraction _____
   c. Acid Fraction _____

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

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

   a. VOA Fraction Toluene RPD = 16.6
   b. B/N Fraction _____
   c. Acid Fraction _____

4

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

Indicate
Yes, No, N/A

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

11. Extraction Holding Time Met ___—___

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

12. Analysis Holding Time Met ___Y___

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

Additional Comments:
_____
_____
_____

Laboratory Manager : _____ Date: 2-11-98

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.mon.mth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Page 1 of 1

Customer: SMC ( )DERA (X)OMA ( )Other:	Project No: 2429	Location: 290	Analysis Parameters	Comments:
Sampler's Signature: David H. Daniel			TPH: Pb % Solid VOA+15	H-M
Lab Sample I.D.	Sample Location	~~Time~~ Date	~~Date~~ Time / Sample Type	Remarks / Preservation Method
2420.01	290 - P2	14:45	4.1.97 Soil	X X X X 20-30
.02	290 - P3	14:50		None
.03	290 - P4	14:55		None
.04	290 - P5	15:00		None

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniel	4.1.97 16:00	Sarah J. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

Custody.xls3/13/97

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

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	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	1	U
108-05-4	Vinyl Acetate	3	U
78-93-3	2-Butanone	3	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
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	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	m+p-Xylenes	3	U
1330-20-7	o-Xylene	2	U
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00455.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/07/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	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	1	U
108-05-4	Vinyl Acetate	3	U
78-93-3	2-Butanone	3	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
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	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	m+p-Xylenes	3	U
1330-20-7	o-Xylene	2	U
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00455.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/07/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P2

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00417.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 19.37 Date Analyzed: 04/02/97

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

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	4	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	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
108-88-3	Toluene	22	
10061-02-6	trans-1,3-Dichloropropene	2	U
79-00-5	1,1,2-Trichloroethane	34	
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	2	U
126-48-1	Dibromochloromethane	2	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	220	E
1330-20-7	m+p-Xylenes	590	E
1330-20-7	o-Xylene	380	E
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

290-P2

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00417.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 19.37 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P3

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00418.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 33.09 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	6	U
74-87-3	Chloromethane	2	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	4	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	2	U
67-64-1	Acetone	720	E
75-15-0	Carbon Disulfide	2	U
75-09-2	Methylene Chloride	60	
156-60-5	trans-1,2-Dichloroethene	3	U
75-35-3	1,1-Dichloroethane	2	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	190	E
	cis-1,2-Dichloroethene	2	U
67-66-3	Chloroform	2	U
75-55-6	1,1,1-Trichloroethane	2	U
56-23-5	Carbon Tetrachloride	3	U
71-43-2	Benzene	2	U
107-06-2	1,2-Dichloroethane	3	U
79-01-6	Trichloroethene	2	U
78-87-5	1,2-Dichloropropane	2	U
75-27-4	Bromodichloromethane	2	U
110-75-8	2-Chloroethyl vinyl ether	3	U
10061-01-5	cis-1,3-Dichloropropene	2	U
108-10-1	4-Methyl-2-Pentanone	3	U
108-88-3	Toluene	2	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	2	U
591-78-6	2-Hexanone	3	U
126-48-1	Dibromochloromethane	3	U
108-90-7	Chlorobenzene	2	U
100-41-4	Ethylbenzene	3	U
1330-20-7	m+p-Xylenes	5	
1330-20-7	o-Xylene	3	U
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
79-34-5	1,1,2,2-Tetrachloroethane	3	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P3

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00418.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 33.09 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

290-P4

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.03

Sample wt/vol: 0.5 (g/ml) G Lab File ID: V00462.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 18.67 Date Analyzed: 04/07/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	49	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	37	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	37	U
75-69-4	Trichlorofluoromethane	25	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	25	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
75-35-3	1,1-Dichloroethane	12	U
108-05-4	Vinyl Acetate	37	U
78-93-3	2-Butanone	37	U
	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
75-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	25	U
71-43-2	Benzene	12	U
107-06-2	1,2-Dichloroethane	25	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
110-75-8	2-Chloroethyl vinyl ether	25	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-Pentanone	25	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	25	U
126-48-1	Dibromochloromethane	25	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	25	U
1330-20-7	m+p-Xylenes	37	U
1330-20-7	o-Xylene	25	U
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

290-P4

Lab Name: FMETL NJDEP.# 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.03

Sample wt/vol: 0.5 (g/ml) G Lab File ID: V00462.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 18.67 Date Analyzed: 04/07/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	37	U
106-46-7	1,4-Dichlorobenzene	37	U
95-50-1	1,2-Dichlorobenzene	37	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P5

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00420.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 21.02 Date Analyzed: 04/02/97

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	4	U
74-83-9	Bromomethane	2	U
75-00-3	Chloroethane	4	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	15	
156-60-5	trans-1,2-Dichloroethene	2	U
75-35-3	1,1-Dichloroethane	1	U
108-05-4	Vinyl Acetate	4	U
78-93-3	2-Butanone	4	U
	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	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
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	U
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	1	U
100-41-4	Ethylbenzene	2	U
1330-20-7	m+p-Xylenes	4	U
1330-20-7	o-Xylene	2	U
100-42-5	Styrene	2	U
75-25-2	Bromoform	2	U
79-34-5	1,1,2,2-Tetrachloroethane	2	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

290-P5

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00420.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 21.02 Date Analyzed: 04/02/97

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

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00412.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

Daily Blank

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: Daily Blank

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00455.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 0 Date Analyzed: 04/07/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-P2

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.01

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00417.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 19.37 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 15

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	21.96	530	J
2. 000108-87-2	Cyclohexane, methyl-	22.48	550	JN
3. 016883-48-0	Cyclopentane, 1,2,4-trimethyl-, (1.	22.73	410	JN
4. 006876-23-9	Cyclohexane, 1,2-dimethyl-, trans	24.82	1000	JN
5. 000583-57-3	Cyclohexane, 1,2-dimethyl- (cis/tr	25.83	450	JN
6.	unknown	27.29	630	J
7. 007667-60-9	Cyclohexane, 1,2,4-trimethyl-, (1.	27.82	420	JN
8. 000108-67-8	Benzene, 1,3,5-trimethyl-	33.96	1000	JN
9. 000526-73-8	Benzene, 1,2,3-trimethyl-	35.19	670	JN
10.	unknown	35.53	560	J
11. 001758-88-9	Benzene, 2-ethyl-1,4-dimethyl-	35.72	750	JN
12. 000099-87-6	Benzene, 1-methyl-4-(1-methylet	36.75	820	JN
13. 027133-93-3	2,3-Dihydro-1-methylindene	37.36	470	JN
14. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	37.73	610	JN
15. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	37.93	790	JN

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-P3

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.02

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00418.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 33.09 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 15

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 027133-93-3	2,3-Dihydro-1-methylindene	23.16	53	JN
2.	unknown	27.28	36	J
3.	unknown	27.82	25	J
4. 017851-27-3	Benzene, 1-ethyl-2,4,5-trimethyl-	28.91	39	JN
5.	unknown	30.14	36	J
6. 000091-20-3	Naphthalene	31.14	120	JN
7.	unknown	32.02	34	J
8.	unknown	32.94	24	J
9. 006682-71-9	1H-Indene, 2,3-dihydro-4,7-dimet	33.73	39	JN
10. 000620-14-4	Benzene, 1-ethyl-3-methyl-	33.95	17	JN
11.	unknown hydrocarbon	34.91	33	J
12. 000108-67-8	Benzene, 1,3,5-trimethyl-	35.18	22	JN
13. 000496-11-7	Indane	36.03	140	JN
14. 055319-72-7	Benzene, 1-ethenyl-3-ethyl-, mixt.	37.35	29	JN
15. 000091-57-6	Naphthalene, 2-methyl-	38.13	360	JN

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-P4

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.03

Sample wt/vol: 0.5 (g/ml) G Lab File ID: V00462.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 18.67 Date Analyzed: 04/07/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

290-P5

Lab Name: FMETL NJDEP # 13461

Project: 2429 Case No.: 2420 Location: Area29 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 2420.04

Sample wt/vol: 5.0 (g/ml) G Lab File ID: V00420.D

Level: (low/med) LOW Date Received: 04/01/97

% Moisture: not dec. 21.02 Date Analyzed: 04/02/97

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

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 15

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	32.13	28	J
2.	unknown	32.76	20	J
3. 001120-21-4	Undecane	35.13	85	JN
4.	unknown	35.40	13	J
5.	unknown	35.53	41	J
6.	unknown	35.90	22	J
7.	unknown	36.04	16	J
8.	unknown	36.75	20	J
9.	unknown hydrocarbon	36.85	15	J
10.	unknown	37.11	15	J
11.	unknown	37.36	26	J
12. 000112-40-3	Dodecane	37.88	110	JN
13.	unknown	38.00	15	J
14. 017301-23-4	Undecane, 2,6-dimethyl-	38.15	23	JN
15.	unknown	38.31	13	J

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	Y
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	Y
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	Y
4.	Document bound, paginated and legible	Y
5.	Chain of Custody submitted	Y
6.	Samples submitted to lab within 48 hours of sample collection	Y
7.	Methodology Summary submitted	Y
8.	Results submitted on a dry weight basis	Y
9.	Method Detection Limits	Y
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	Y

Laboratory Manager or Environmental Consultant's Signature _____

Date 1/12/06

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 Lead
2429
Area 290

Project # 2420
Date Rec. 04/01/97
Date Compl. 04/09/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Methodology Summary

EPA SW-846 Method 3151 Volume One, Third Edition: Digestion Pb

Milestone MLS 1200 MEGA
A representative sample of 1.0 to 0.5 g is digested in 10 ml of concentrated nitric acid for 10 min. using microwave heating with a suitable laboratory microwave unit. The sample and acid are placed in a fluorocarbon (TFM) microvessel. This vessel is capped and heated in the microwave unit. After cooling the vessel contents are filtered and then diluted to 100ml volume and analyzed by ICP.

EPA SW-846 Method 7421 Volume One, Third Edition: GFAA Pb

Varian SpectrAA-640Z Graphite Furnace Atomic Absorption Spectrometer
A representative aliquot of sample is placed in the graphite tube in the furnace, evaporated to dryness, charred, and atomized. The absorption of hollow cathode or EDL radiation during atomization will be proportional to the lead concentration.

METAL ANALYSIS CONFORMANCE / NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Calibration Summary Meet Criteria		✓
2.	ICP Interference Check Sample Results Summary Submitted (if applicable) / Meet Criteria	NA	
3.	Serial Dilution Summary Submitted (if applicable) / Meet Criteria	NA	
4.	Laboratory Control Sample Summary Submitted (if applicable) / Meet Criteria		✓
5.	Blank Contamination - If yes, list compounds and concentrations in each blank:	✓	
6.	Matrix Spike / Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and thier recoveries which fall outside of the acceptable range)		✓
7.	Extracion Holding Time Met		
8.	Analysis Holding Time Met		✓

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

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

Additional Comments: _____

Laboratory Manager: _____ Date: 3-6-96

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 Re[illegible]

Page 1 of 1

Customer: SMC
( )DERA (X)OMA ( )Other:

Project No: 2429

Location: 290

Sampler's Signature: David H. Dames

Lab Sample I.D.	Sample Location	~~Time~~ Date	~~Date~~ Time	Sample Type	TPH	Pb	% Solid	Vo + IS	Comments: Remarks / Preservation Meth
2420.01	290 - P2	14:45	4.1.97	Soil	X	X	X	X	20-30 H-Nu
.02	290 - P3	14:50	↓	↓	↓	↓	↓	↓	None
.03	290 - P4	14:55							None
.04	290 - P5	15:00							None

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (si[illegible]
David H. Dames	4.1.97 16:00	Sarah F. Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (si[illegible]
Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:	

print legibly

Cust[illegible]

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

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

Lab ID #: 2420.01-.04
Sample Received: 4/01/97
Analysis Start: 4/07/97
Analysis Completed: 4/09/97

Site: Ft. Monmouth
290 Area

Matrix: Soil

Method of Analysis: Std. Methods 18th, Method 3111B
Method of Digestion: SW-846, Method 3051

TEST PARAMETER: Lead

Laboratory I.D. #	Sample Location	RESULT (mg/Kg)	MDL (mg/Kg)	Percent Solids
2420.01	290-P2	93.89	2.32	80.63
2420.02	290-P3	23.60	2.62	66.91
2420.03	290-P4	24.13	2.30	81.33
2420.04	290-P5	33.91	2.26	78.98

ND = Not Detected, MDL = Method Detection Limit, NA = Not Applicable

Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature 

Date 3/6/96

Laboratory Certification #13461

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

APPENDIX B
PHOTOGRAPHS

REMEDIATION NEXT TO BUILDING 290

REMEDIATED AREA AT BUILDING 290